

**THE MACRO-ECONOMIC IMPACT OF  
THE WINE INDUSTRY ON THE  
WESTERN CAPE**

**FINAL REPORT**

**CONNINGARTH CONSULTANTS  
ECONOMIC CONSULTANTS**

**COMMISSIONED BY SAWIS**

**PO BOX 238**

**PAARL**

**7620**

**Tel + 27 (0) 21 807 5700**

**Fax + 27 (0) 21 871 1360**

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## PART I

### A GENERAL DESCRIPTION OF THE WINE INDUSTRY

#### 1 Important developments in the wine industry, 1990-2000

The South African wine industry has undergone major changes over the past 10 years. This was mainly brought about by South Africa's re-entry into the world economy after the changes in the political dispensation since 1990. South Africa's wine producers had a large amount of catching up to do to re-establish themselves as sellers of quality brands on world markets.

Another important development was the reorganisation of the regulatory and institutional framework of the industry, involving mainly the role of KWV. KWV was transformed into a public company in 1997, and an agreement was reached with the government to create the Wine Industry Trust in 1999, to be financed jointly by KWV and the State. In the process, KWV divested its statutory obligation to regulate the industry, ushering in a new era of deregulated marketing.

The wine industry, like many others, is faced with constantly changing market conditions domestically and abroad. For example, the industry currently faces a surplus of white wines and a shortage of quality red wines. The demand for red wines has risen sharply in recent years, *inter alia* because of the increasing awareness by consumers of red wine's health attributes. There are possibly a number of reasons for this demand/supply discrepancy, but it is believed that a main contributor was the wine producers' inability to foresee the dramatic shift in the demand in favour of red wine that started a number of years ago. This was possibly caused by South Africa's isolation and sanctions before the 1990s, and hence its over-dependence on the local market. The shift in South Africa to red varietal plantings started a few years ago and presently constitutes 26% of the area planted. Hopefully South Africa will now be in a better position to provide for the strong growth in the demand for red wines locally and overseas, provided this strong tendency in red wine demand continues.

Over and above the structural changes referred to above, the industry has been battling in recent years with a rather volatile domestic market. Total wine consumption for example, declined by 2,4% in volume terms between 1996 and 1999, while the demand for brandy declined by no less than 26,8%. Research has shown that there are several reasons for these declining tendencies, including the advent of the state lottery, more casinos, the popularity of cellphones and other telecommunications equipment and the increasing influence of Aids. The optimism that reigned after 1994, when wine and spirits sales increased handsomely for a few years, has, therefore, abated somewhat.

The industry has acknowledged the challenges that need to be addressed in a co-ordinated way to ensure its long-term financial viability. It will have to become more market driven and will need to ensure its information requirements are met on a more regular basis. This is illustrated by the launch of various studies such as Winetech Vision 2020, to assist in devising a strategic plan of action for the industry. The economic impact study that forms

the basis of this report will also assist in providing vital information on the broader role of the wine industry in the South African economy in general and in the Western Cape in particular. A recent study by the Industrial Development Corporation on the wine industry's so-called "Competitive Platform", also brought to light important insights into this industry's short to medium term prospects<sup>1)</sup>.

## **2 Important aspects of the 2000 study compared to the 1997 study**

Three and a half years have elapsed since the 1997 study. This is a long time in the history of any industry that is dependent on the private consumer (at home and abroad) for its growth. The information in Table 2 provides the broad framework within which the study was conducted. It shows the main macro-economic downstream relationships of the wine industry, updated to reflect the situation in the 1999 calendar year. However, before interpreting the data in Table 2 and the conclusions that are based on it, certain developments that may have had a bearing on the outcomes reflected in the Table should be noted, namely:

- Sharp increases in the average grape prices of noble varieties used to make wine;
- Producers' income increased by 16%<sup>2)</sup>, and total litres of wine produced rose by 1,6%<sup>3)</sup>;
- Production costs increased on average by 43%;
- The average price of good wine sold in bulk increased by 24%<sup>4)</sup>;
- The volume of exports increased by 29 %<sup>5)</sup>, and in value terms by 133%<sup>6)</sup>;
- Imports, in current terms, also increased;
- Wine and wine-based alcoholic beverages consumed declined by 5,7%<sup>7)</sup> in volume terms;
- The South African tourism industry flourished.

Table 2 provides a static or snapshot view of the conditions in the wine industry in 1999. Taking into account the trends referred to above, it can be concluded that the wine industry finds itself under pressure to remain profitable and competitive.

The institutional chain that forwardly links all the participants in the whole economic process of beneficiation is shown below in Figure 1.

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<sup>1)</sup> Industry Analysis, The South Africa Wine Industry, February 2000. IDC, Sandton

<sup>2)</sup> South Africa Wine Industry Information and Systems (SAWIS), South African Wine Industry Statistics No. 24, par. 6.1

<sup>3)</sup> SAWIS, par 5.1.

<sup>4)</sup> SAWIS, par. 6.2

<sup>5)</sup> SAWIS, par 7.1.

<sup>6)</sup> See Table 2.

<sup>7)</sup> See Annexure A, note no. 4.

**FIGURE 1: INSTITUTIONAL FRAMEWORK OF THE WINE INDUSTRY (1999)**

<b>PRODUCERS</b>			
<b>WINE GROWERS 4 515</b>			
<b>PRODUCTION CATEGORY</b>			
<b>TONS</b>		<b>PRODUCERS</b>	
1 – 100		2 247	
> 100 – 500		1 557	
> 500 – 1 000		462	
> 1 000 – 5 000		246	
> 5 000 – 10 000		<u>3</u>	
		4 515	

  

<b>CELLARS</b>			
<b>CELLARS WHICH PRESS GRAPES 337</b>			
<b>CO-OPS</b>	<b>ESTATES</b>	<b>NON-ESTATES</b>	<b>PRODUCING WHOLESALERS</b>
69	92	168	8

  

<b>WHOLESALE &amp; RETAIL</b>	
<b>WHOLESALE TRADE (buy in bulk)</b>	
PRODUCING WHOLESALERS	8
OTHER WHOLESALERS	45
<b>RETAIL TRADE</b>	
ON-CONSUMPTION LICENCES	18 084
OFF-CONSUMPTION LICENCES	9 316

  

<b>EXPORTERS</b>	
	<b>EXPORTERS</b>
	300

T  
O  
U  
R  
I  
S  
M

Note: Cellars that press grapes sell directly to producing wholesalers, wholesalers, retailers and the public.

Although the major portion of actual economic value added through the process of beneficiation takes place in the Western Cape, a substantial part thereof realises in other parts of the country, mainly through the wholesale and retail components.

At the retail level a large portion of the sale of alcoholic beverages is directed at the organised leisure market, i.e. people visiting restaurants, hotels, clubs etc. This is also where the tourism market is becoming increasingly important. In relation to the wine industry, the impact of tourism on demand can be categorised in two parts viz.:

- Tourists' direct consumption of wine at hotels, restaurants etc.
- Tourists visiting the Western Cape with the specific aim of visiting the Wine Routes and also to buy wine (see Table 2 for estimates of total spending by tourists on the wine routes and also Annexure A, note no. 3).

Recent SATOUR data shows that in 1999 approximately 58% of all foreign tourists to South Africa visited the Western Cape. In 1999 it was estimated by SATOUR that a foreign tourist spends  $\pm$  R1 200 on average per day in South Africa (excluding airfare). Of this amount  $\pm$  16% is spent on food and beverages.

### 3 Macro-economic magnitudes of the wine industry

An important aim of this study is to quantify in Rand terms the economic value added to each phase of the institutional chain that constitutes the production, distribution and selling of wine locally and overseas. In broad terms this represents the various levels set out in Figure 1.

Table 1 contains the monetary values of each successive stage of the beneficiation process of wine making and selling for the year 1999. The data is classified according to the main economic sectors and market segments. The Table does not deal directly with the regional impact (except for foreign trade), which will be dealt with in Part II of this study.

Table 1 shows that the value of the total turnover of the wine alcohol industry in 1999 amounted to R7 369,8 million<sup>8)</sup>. Of that amount R1 595,9 million was from exports. Imports amounted to R500,6 million or  $\pm$  8,6% of domestic sales. Put another way, primary agricultural output valued at R1 435,9 million was beneficiated and added in value downstream to the value of R7 369,8 million i.e.  $\pm$  5 times the initial value of the raw materials. In the process, income (consisting of the remuneration of both labour and capital) to the tune of R7 370 million was directly and indirectly generated in the RSA and overseas (via exports). Furthermore, it is estimated that an additional amount of R3 471,5 million was generated indirectly through tourism<sup>9)</sup>.

Compared with the 1997-study, it is evident that the wine industry as a whole did not do well between 1996 and 1999. Total turnover grew by only 13,4%. The rise in production and distribution costs has therefore placed the wine industry's profitability under pressure. This situation will also be reflected in certain parts of the impact analysis in Part II. Exports on the other hand did exceptionally well and more than doubled in current value terms. Based on new data regarding tourist activities in the Western-Cape (especially domestic tourists), it is clear that the wine industry's indirect effects on the tourist industry were grossly underestimated in 1996. It is important that when interpreting the results of the present study, the above-mentioned opposing trends be kept in mind.

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<sup>8)</sup> R1 435,9 + R5 933,9 = R7 369,8 million. (The tourism industry was left out of this equation).

<sup>9)</sup> This figure was indirectly derived from data received from WESGRO. See Annexure A, note no. 3.

**Table 1: Economic structure and the flow of goods and services (Rm. 1999)**

Market Segment  Economic Sector	R Million, 1999					
	Turnover Added at each Phase	Exports	Domestic Sales	Current Import level	Potential Import Source of business	Western Cape <sup>1)</sup> Sourced Production
	(1)	(2)	(3)	(4)	(5)	(6)
1. Primary Agricultural Production						
2. Cellars		(148,4)				
Total Primary	1435,9	148,4 <sup>2)</sup>	1287,5			1435,9
3. Manufacturing Wholesale & Retail						
3.1 Manufacturing <sup>3)</sup>	2254,8	743,4	1511,4	250,3		2004,5
3.2 Total Trade & Transport	3679,1	704,1 <sup>4)</sup>	2975,0	250,3 <sup>5)</sup>	953,6 <sup>6)</sup>	2475,2
Sub-total	5933,9 <sup>7)</sup>	1447,5	4486,4	500,6	953,6	4479,7 <sup>8)</sup>
<b>TOTAL (1+2+3)</b>	<b>7369,8</b>	<b>1595,9<sup>9)</sup></b>	<b>5773,9</b>	<b>500,6</b>	<b>953,6</b>	<b>5915,6</b>
4. Tourism <sup>10)</sup>						
4.1 Foreign	935,1	935,1				935,1
4.2 Local	2536,4		2537,4			2536,4
Sub-Total	3471,5	935,1	2536,4	500,6	953,6	3471,5
<b>GRAND TOTAL</b>	<b>10841,3</b>	<b>2531,0</b>	<b>8310,3</b>	<b>500,6</b>	<b>953,6</b>	<b>9299,5</b>

**Source:** SAWIS, except where otherwise indicated. See Annexure A for more detail on specific sources and statistical calculations to arrive at figures in the table.

<sup>1)</sup> Including Orange River Production

<sup>2)</sup> According to the 1998 Input-Output Table, primary sector inputs as a % of total output (fob value) amounts to 9,3 %

<sup>3)</sup> Defined as processing, distilling, packaging, bottling and labelling (including grape juice)

<sup>4)</sup> Department of Customs and Excise (through Department of Trade and Industry (Website: [www.dti.pwv.gov.za](http://www.dti.pwv.gov.za)) – 4 digit level.

<sup>5)</sup> Assumed trade margin constitutes  $\pm \frac{1}{3}$  of fob value.

<sup>6)</sup> Based on the assumption that  $\pm 35$  % of the Trade component of domestic sales value (excluding imports) will still remain intact even if local sourcing of unrefined wine is terminated (See Annexure A, note no 5).

<sup>7)</sup> See Annexure A, note 1.

<sup>8)</sup> This figure represents a rough estimate of the total Rand value of economic activities solely dependent on raw wine production in the Western Cape. (Column 1(-) Column 4(-) Column 5 = 6)

<sup>9)</sup> Data from Department of Customs and Excise (the same as exports, but at 8 digit level). See summary in Annexure A, note no. 2.

<sup>10)</sup> Data provided by WESGRO – see Annexure A, note no. 3.

The analysts also attempted to put a value on what the loss would be to the country if the wine producing activities in the Western Cape were terminated for some reason. In column 5 an amount of R953,6 million is shown to reflect what the size of the business would have been if the primary raw material was imported and not produced in the Western Cape at all<sup>10)</sup>. By subtracting this amount from total turnover, (less direct imports) an amount of R5951,6 million is shown in column 6, which represents what the total loss to the economy, would be if primary wine production in the Western Cape ceased. The loss to the tourism industry is put at R3471,5 million, assuming that tourists

<sup>10)</sup> The basic assumption was that if there was no local production of wine, the wine “business” would be based on imports and would reduce to  $\pm 35$  % of the present level of business. (see Annexure A, note no 5).

would shorten their visits to the Western Cape or some would not come at all. While this amount might be exaggerated, it is a first approximation to illustrate the principle involved.

It is important to take an initial view on what the impact of the wine industry is on the Western Cape region's economy. (This will be dealt with in more detail in Part II of this study). Table 1 can be of assistance in this regard, although it has certain shortcomings. Firstly, it can safely be assumed that the bulk of the amount of R1435,9 million, representing the primary value of wine production, was spent in the Western Cape. However, a certain portion will be spent on raw materials and other inputs that came from outside the Western Cape, even from overseas (this will be allowed for in the regional model). The same reasoning can be followed with respect to the manufacturing component, where it is known that most of these plants are situated in the Western Cape.

The wholesale and retail sectors of the wine industry represent a more problematical situation because these outlets are spread throughout the RSA. The domestic sales value (turnover added) of R2975,0 million should roughly be spread over the RSA in terms of the population distribution and their buying power. The trade component of exports would most probably also be largely Western Cape based.

The wine-related sector of tourism is obviously Western Cape based. The extent to which the annual amount of R3471,5 million, estimated to be spent in the Western Cape, will have "leakages" in terms of goods and services imported from outside the area, will be taken into account in Part II.

Although Table 1 does not present the full picture of the economic impact of the wine industry on the Western Capes' economy, the conclusion can already be made that a minimum of 50,0 %<sup>11)</sup> of the turnover, in terms of financial outlays, have taken place in the Western Cape. The extent to which these outlays will lead to actual income generation in the province will depend on the indirect stimulatory effect of the amount of money spent by the wine industry in the Western Cape. Use will be made of sectoral input-output multiplier coefficients in Part II of the study to estimate these aggregates.

Provision must also be made for so-called direct and indirect import leakages in the form of goods and services acquired outside the Western Cape Province by the wine industry itself and those businesses in the region who supply it with a whole range of goods and services.

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<sup>11)</sup> Made up as follows:

Primary Agriculture	1435.9	
Manufacture	2254.8	
Tourism*	-	
		3690.7
Total turnover	7369.8	
Less direct imports	500.6	
		6869.8

$$\frac{3690,7}{6869,8} \times \frac{100}{1} = 53.72\%$$

\* (The tourism impact was not considered for this calculation)

## PART II

### THE MACRO-ECONOMIC IMPACT OF THE WINE INDUSTRY

#### 1 Background and methodology

The picture presented in Table 1 provides no more than a broad indication of the order of magnitude of the wine industry's contribution to the level of overall economic activities in the RSA, based on the structure and magnitude of its forwardly linked beneficiation processes. In order to establish the indirect impact of these value-added processes in the wine industry on various linked economic variables such as Gross Domestic Product (GDP), demand for capital, employment, sectoral development and income distribution, some further quantitative analyses are required.

In view of the magnitude and nature of the wine industry, (see Table 1) the backward linkages of the sector will be of great significance in terms of their contribution.

Economic equilibrium analysis was used to quantify the direct and indirect effects with regard to the backward linkages of the wine industry. The Social Accounting Matrix (SAM) for South Africa, which was transformed into an economic model (the so-called semi-closed input-output model) by Wang and Mullins<sup>13)</sup> (1988), was used as the basis for the economic equilibrium analysis. The SAM, however, differs importantly from the input-output table in one respect. Apart from information on the interdependence among the different sectors of the economy taken up in the input-output table, the SAM also includes detailed information on the income and spending patterns of households and other institutional relationships. Important to note is that the semi-closed input-output model is a linear model, which in some cases can under or overstate the impact.

The "direct effect" emanating from the wine industry refers to the effect occurring in the industry, while the "indirect effect" refers to those effects occurring in other economic sectors (those that link backwards to the wine industry due to the supply of intermediate inputs). Lastly, the "derived effect" refers to the chain reaction triggered by the salaries and profits that are ploughed back into the economy in the form of private consumer spending.

#### 2 Capital utilisation

Capital investment is required to support or generate any given amount of economic activity. Capital investment, together with labour and entrepreneurship, form the basic productive factors needed for production. Obviously the effectiveness and efficiency with which these factors are combined will determine the overall level of productivity and profitability of such production processes. The latter will in turn depend on a whole array

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<sup>13)</sup> Wang, T.F. & Mullins, D. (1988). The model of income distribution, employment and growth for South Africa: A semi-closed input-output approach. *Studies in Economics and Econometrics*, 12(3). (Updated version by the DBSA)

of factors, of which the appropriate technology and skills content of the labour force are most important.

The results of the application of the general equilibrium model to the wine industry are given in the following Tables. Table 2 shows the overall demand for capital needed to sustain the present level of production. The total column shows that a capital stock of R11 176 million is required directly in the wine industry to sustain a level of production/turnover of  $\pm$  R7,4 billion (Capital/Output ratio of 1,5).

Indirectly, the capital requirements of supporting industries escalate quite substantially, which is, on the one hand, a reflection of the relative capital intensity of such industries, but also of the measure of specialisation already achieved in the main production activity.

Looking at the situation from an intra-regional perspective, it is quite interesting to note that as far as primary agriculture is concerned (i.e. the on-farm situation), capital stock (investment) to the level of  $\pm$  R5,7 billion was required by farmers to ensure the present level of production (whether it represents an over or under utilisation of capital already invested is not known and will require additional research which does not form part of the present brief).

TABLE 2: CAPITAL UTILIZATION

Total Capital needed to support the forward and backward linkages of the wine industry of the Western Cape [R million, 1999 prices]

ECONOMIC SECTOR	Orange River	Olifants River	Klein Karoo	Paarl/ Malmesbury	Robertson	Stellenbosch	Worcester	TOTAL	%
<b>A: PRIMARY AGRICULTURE</b>									
1. Direct	438	962	297	1,415	792	840	990	5,735	
2. Indirect	158	357	127	852	344	442	666	2,945	
<b>3. Total</b>	<b>595</b>	<b>1,319</b>	<b>424</b>	<b>2,267</b>	<b>1,136</b>	<b>1,282</b>	<b>1,656</b>	<b>8,680</b>	<b>22.7</b>
<b>B: CELLARS</b>									
1. Direct	174	432	78	451	422	123	553	2,233	
2. Indirect	186	262	75	326	470	154	189	1,663	
<b>3. Total</b>	<b>361</b>	<b>694</b>	<b>154</b>	<b>776</b>	<b>892</b>	<b>278</b>	<b>742</b>	<b>3,897</b>	<b>10.2</b>
<b>C: MANUFACTURING</b>									
1. Direct	202	323	95	370	352	195	520	2,057	
2. Indirect	407	651	191	747	709	394	1,050	4,149	
<b>3. Total</b>	<b>608</b>	<b>974</b>	<b>285</b>	<b>1,117</b>	<b>1,061</b>	<b>590</b>	<b>1,570</b>	<b>6,206</b>	<b>16.2</b>
<b>D: WHOLESALE and RETAIL</b>									
1. Direct	113	181	53	207	197	109	291	1,151	
2. Indirect	522	837	245	959	911	506	1,348	5,330	
<b>3. Total</b>	<b>635</b>	<b>1,017</b>	<b>298</b>	<b>1,167</b>	<b>1,108</b>	<b>616</b>	<b>1,640</b>	<b>6,481</b>	<b>16.9</b>
<b>WINE INDUSTRY</b>									
1. Direct	927	1,898	523	2,443	1,763	1,268	2,354	11,176	
2. Indirect	1,273	2,108	638	2,884	2,435	1,497	3,253	14,088	
<b>3. Total</b>	<b>2,200</b>	<b>4,005</b>	<b>1,161</b>	<b>5,327</b>	<b>4,197</b>	<b>2,765</b>	<b>5,607</b>	<b>25,263</b>	<b>66.0</b>
<b>E: TOURISM</b>									
1. Direct	134	555	280	1,244	770	1,087	1,035	5,105	
2. Indirect	208	857	433	1,924	1,190	1,682	1,600	7,894	
<b>3. Total</b>	<b>342</b>	<b>1,412</b>	<b>713</b>	<b>3,168</b>	<b>1,960</b>	<b>2,769</b>	<b>2,635</b>	<b>13,000</b>	<b>34.0</b>
<b>GRAND TOTAL</b>									
1. Direct	1,061	2,452	803	3,688	2,532	2,355	3,389	16,281	
2. Indirect	1,481	2,965	1,071	4,808	3,625	3,179	4,854	21,982	
<b>3. Total</b>	<b>2,542</b>	<b>5,417</b>	<b>1,874</b>	<b>8,495</b>	<b>6,157</b>	<b>5,534</b>	<b>8,243</b>	<b>38,263</b>	<b>100.0</b>

### 3 Employment impact

As indicated previously, capital together with labour and entrepreneurship form the primary productive factors needed for economic production. The manpower requirements, in terms of people employed in the wine industry itself as well as its supporting industries, are shown in Table 3. Again, as with capital, the model produced the direct and indirect impacts for every level of beneficiation as well as for each production area.

Starting with the total column, it is significant to note that the wine industry directly and indirectly supports 159 952 job opportunities throughout the economy. The industry directly employs 103 800 people. What is important is that the primary agricultural sector of the wine making process directly employs the most people, while directly and indirectly it is also responsible for 42,6 % of the 159 952 jobs which are dependent on the wine industry (32,8 % for the grand total).

It is also important to take note of the intra-regional impact on employment of the wine industry. One can safely assume that close to 90 % of the employment impact of primary agriculture and cellars will be in the Western Cape itself<sup>14)</sup>. When moving further up the ladder, it becomes much more difficult to arrive at reasonable conclusions. One can assume that at least  $\pm$  56,5 % of the total number of 103 800 jobs that are directly dependent on the wine industry (excluding tourism), would be found in the Western Cape.

Lastly, as far as the level and structure of the wine industry's impact on employment is concerned, it is important to take note of the differences in the ratios between direct and total impacts of the various economic sectors. In the case of primary agriculture the ratio is 1:1,2, cellars 1:2,7, manufacturing 1:2,1 and wholesale and retail 1:1,7.

The relative size of these ratios is determined by various factors, including the nature and levels of mechanisation; nature of the production processes, specialisation and even seasonal movements.

With tourism, the direct and indirect impact is distributed between the production areas on the basis of cellars present in a particular area, together with the productive hectares of each region and data regarding the number of tourists visiting each region.

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<sup>14)</sup> The distribution of the employment impact between production areas must be carefully interpreted. For instance, Orange River figures were arrived at by using the effective hectares planted, times average tonnage per hectare, times average income/price realization to determine its share of total farmers' income. This figure is then used to determine Orange River's share in all subsequent levels of manufacturing as well as wholesale and retail activities, irrespective of where it actually took place.

TABLE 3: EMPLOYMENT

Total labour needed to support the forward and backward linkages of the wine industry of the Western Cape

ECONOMIC SECTOR	Orange River	Olifants River	Klein Karoo	Paarl/ Malmesbury	Robertson	Stellenbosch	Worcester	TOTAL	%
<b>A: PRIMARY AGRICULTURE</b>									
1. Direct	2,837	5,325	1,891	19,706	6,758	9,864	8,837	55,218	
2. Indirect	733	1,550	559	3,805	1,540	1,939	2,882	13,007	
<b>3. Total</b>	<b>3,571</b>	<b>6,874</b>	<b>2,450</b>	<b>23,512</b>	<b>8,298</b>	<b>11,803</b>	<b>11,719</b>	<b>68,226</b>	<b>32.8</b>
<b>B: CELLARS</b>									
1. Direct	400	541	159	669	999	336	351	3,455	
2. Indirect	670	948	272	1,178	1,691	554	694	6,006	
<b>3. Total</b>	<b>1,069</b>	<b>1,489</b>	<b>431</b>	<b>1,847</b>	<b>2,690</b>	<b>890</b>	<b>1,044</b>	<b>9,461</b>	<b>4.5</b>
<b>C: MANUFACTURING</b>									
1. Direct	1,544	2,474	725	2,836	2,694	1,497	3,986	15,755	
2. Indirect	1,673	2,680	785	3,072	2,919	1,622	4,318	17,069	
<b>3. Total</b>	<b>3,217</b>	<b>5,153</b>	<b>1,510</b>	<b>5,908</b>	<b>5,613</b>	<b>3,118</b>	<b>8,304</b>	<b>32,824</b>	<b>15.8</b>
<b>D: WHOLESALE and RETAIL</b>									
1. Direct	2,878	4,611	1,351	5,287	5,023	2,790	7,431	29,372	
2. Indirect	1,967	3,151	923	3,613	3,432	1,907	5,078	20,070	
<b>3. Total</b>	<b>4,845</b>	<b>7,762</b>	<b>2,274</b>	<b>8,900</b>	<b>8,455</b>	<b>4,697</b>	<b>12,509</b>	<b>49,442</b>	<b>23.7</b>
<b>WINE INDUSTRY</b>									
1. Direct	7,659	12,951	4,127	28,498	15,474	14,487	20,605	103,800	
2. Indirect	5,043	8,328	2,539	11,669	9,581	6,021	12,972	56,152	
<b>3. Total</b>	<b>12,702</b>	<b>21,279</b>	<b>6,665</b>	<b>40,167</b>	<b>25,055</b>	<b>20,508</b>	<b>33,576</b>	<b>159,952</b>	<b>76.8</b>
<b>E: TOURISM</b>									
1. Direct	383	1,579	797	3,543	2,192	3,096	2,947	14,536	
2. Indirect	890	3,672	1,854	8,239	5,098	7,202	6,854	33,809	
<b>3. Total</b>	<b>1,273</b>	<b>5,251</b>	<b>2,651</b>	<b>11,782</b>	<b>7,289</b>	<b>10,299</b>	<b>9,801</b>	<b>48,346</b>	<b>23.2</b>
<b>GRAND TOTAL</b>									
1. Direct	8,042	14,530	4,924	32,041	17,665	17,583	23,552	118,336	
2. Indirect	5,933	12,001	4,393	19,908	14,679	13,223	19,826	89,962	
<b>3. Total</b>	<b>13,975</b>	<b>26,530</b>	<b>9,316</b>	<b>51,949</b>	<b>32,344</b>	<b>30,806</b>	<b>43,378</b>	<b>208,298</b>	<b>100.0</b>

#### 4 Impact on GDP

The total income ratio for the wine industry is calculated at 3,1<sup>15)</sup>. This means that for every R1 production-factor income generated directly in the industry, R3,0 will be generated throughout the economy based on its sectoral backward linkage structure. It will be noted that the GDP ratios for the different production areas differ slightly. This can mainly be attributed to slightly different input/production structures and gross operating margins.

As could be expected, the measure of beneficiation that takes place within every economic sector will also impact differently on the GDP ratios because of different production processes and technologies employed. The beneficiation factor in the manufacturing process amounts to 3,8<sup>16)</sup> as compared to the 2,8 of the cellars, where a relatively smaller level of value added takes place.

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<sup>15)</sup>  $\frac{9385}{3047} = 3,1$

<sup>16)</sup>  $\frac{2529}{662} = 3,8$

TABLE 4: GROSS DOMESTIC PRODUCT (GDP)

Total GDP generated through forward and backward linkages of the wine industry of the Western Cape [R million, 1999 prices]

ECONOMIC SECTOR	Orange River	Olifants River	Klein Karoo	Paarl/ Malmesbury	Robertson	Stellenbosch	Worcester	TOTAL	%
<b>A: PRIMARY AGRICULTURE</b>									
1. Direct	16	86	21	58	14	43	206	443	
2. Indirect	73	163	58	390	157	201	307	1,349	
<b>3. Total</b>	<b>90</b>	<b>249</b>	<b>79</b>	<b>448</b>	<b>170</b>	<b>244</b>	<b>513</b>	<b>1,792</b>	<b>12.3</b>
<b>B: CELLARS</b>									
1. Direct	38	62	16	79	100	29	62	387	
2. Indirect	80	113	33	141	202	66	83	718	
<b>3. Total</b>	<b>118</b>	<b>176</b>	<b>49</b>	<b>220</b>	<b>302</b>	<b>96</b>	<b>144</b>	<b>1,105</b>	<b>7.6</b>
<b>C: MANUFACTURING</b>									
1. Direct	65	104	30	119	113	63	168	662	
2. Indirect	183	293	86	336	319	177	472	1,866	
<b>3. Total</b>	<b>248</b>	<b>397</b>	<b>116</b>	<b>455</b>	<b>432</b>	<b>240</b>	<b>640</b>	<b>2,529</b>	<b>17.4</b>
<b>D: WHOLESALE &amp; RETAIL</b>									
1. Direct	152	244	72	280	266	148	393	1,554	
2. Indirect	236	378	111	433	411	228	608	2,405	
<b>3. Total</b>	<b>388</b>	<b>622</b>	<b>182</b>	<b>713</b>	<b>677</b>	<b>376</b>	<b>1,002</b>	<b>3,959</b>	<b>27.2</b>
<b>WINE INDUSTRY</b>									
1. Direct	271	496	139	536	492	283	828	3,047	
2. Indirect	572	947	287	1,299	1,089	673	1,470	6,338	
<b>3. Total</b>	<b>844</b>	<b>1,443</b>	<b>426</b>	<b>1,836</b>	<b>1,582</b>	<b>956</b>	<b>2,298</b>	<b>9,385</b>	<b>64.5</b>
<b>E: TOURISM</b>									
1. Direct	45	185	93	414	256	362	345	1,700	
2. Indirect	91	377	190	846	524	740	704	3,473	
<b>3. Total</b>	<b>136</b>	<b>562</b>	<b>284</b>	<b>1,261</b>	<b>780</b>	<b>1,102</b>	<b>1,049</b>	<b>5,173</b>	<b>35.5</b>
<b>GRAND TOTAL</b>									
1. Direct	316	681	232	951	749	645	1,173	4,747	
2. Indirect	664	1,324	477	2,146	1,613	1,413	2,174	9,811	
<b>3. Total</b>	<b>980</b>	<b>2,005</b>	<b>710</b>	<b>3,096</b>	<b>2,362</b>	<b>2,058</b>	<b>3,347</b>	<b>14,557</b>	<b>100.0</b>

## 5 Income distribution

The semi-input output equilibrium model, based on the SAM national accounting system, was used to give an indication of the wine-industry's impact on income distribution in South Africa. It should be noted right at the start that due to the lack of more industry related information on employment structures, the consultants were forced to make certain assumptions that might have affected the quality of the results.

In the case of agriculture, industry-specific information, especially with regard to the cost structures of various production areas, produced differences in per centages of low income consumers vs. total labour remuneration. As shown in Table 5, the wine farming sector differs from the total agricultural sector, mainly because, on average, it is more capital intensive than the agriculture sector<sup>17)</sup>.

In the case of the manufacturing sub-sector, use was made of information on the employment structure of the wine distilling sector as contained in the SAM, to subdivide the total workers' income into high, medium and low categories. Again, more industry specific information is needed to provide a more realistic picture.

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<sup>17)</sup> It is estimated that it costs approximately R50 000 to establish one hectare of wine grapes, excluding land costs.

**TABLE 5: INCOME DISTRIBUTION**

Household income (mostly salaries and wages) generated through forward and backward linkages of the wine industry of the Western Cape [R million, 1999 prices]

<b>ECONOMIC SECTOR</b>	<b>Orange River</b>	<b>Olifants River</b>	<b>Klein Karoo</b>	<b>Paarl/ Malmesbury</b>	<b>Robertson</b>	<b>Stellenbosch</b>	<b>Worcester</b>	<b>TOTAL</b>
<b>A: PRIMARY AGRICULTURE</b>								
1. Low Income	10.4	28.8	9.1	53.2	20.0	28.9	59.2	209.5
2. Total Income	67.8	164.6	54.9	363.1	138.6	190.6	321.6	1,301.2
<b>3. Low income as % of Total income</b>	<b>15.4%</b>	<b>17.5%</b>	<b>16.6%</b>	<b>14.6%</b>	<b>14.4%</b>	<b>15.2%</b>	<b>18.4%</b>	<b>16.1%</b>
<b>B: CELLARS</b>								
1. Low Income	13.9	20.7	5.8	25.8	35.6	11.3	16.8	130.0
2. Total Income	80.4	116.2	32.9	144.8	203.9	65.8	89.6	733.6
<b>3. Low income as % of Total income</b>	<b>17.4%</b>	<b>17.8%</b>	<b>17.5%</b>	<b>17.8%</b>	<b>17.5%</b>	<b>17.2%</b>	<b>18.8%</b>	<b>17.7%</b>
<b>C: MANUFACTURING</b>								
1. Low Income	32.9	52.7	15.4	60.4	57.4	31.9	84.9	335.6
2. Total Income	158.9	254.5	74.6	291.8	277.2	154.0	410.1	1,621.0
<b>3. Low income as % of Total income</b>	<b>20.7%</b>	<b>20.7%</b>	<b>20.7%</b>	<b>20.7%</b>	<b>20.7%</b>	<b>20.7%</b>	<b>20.7%</b>	<b>20.7%</b>
<b>D: WHOLESALE and RETAIL</b>								
1. Low Income	46.2	73.9	21.7	84.8	80.5	44.7	119.1	470.9
2. Total Income	264.7	424.0	124.2	486.1	461.8	256.6	683.3	2,700.6
<b>3. Low income as % of Total income</b>	<b>17.4%</b>	<b>17.4%</b>	<b>17.4%</b>	<b>17.4%</b>	<b>17.4%</b>	<b>17.4%</b>	<b>17.4%</b>	<b>17.4%</b>
<b>WINE INDUSTRY</b>								
1. Low Income	103	176	52	224	194	117	280	1,146
2. Total Income	572	959	287	1,286	1,081	667	1,505	6,356
<b>3. Low income as % of Total income</b>	<b>18.1%</b>	<b>18.4%</b>	<b>18.1%</b>	<b>17.4%</b>	<b>17.9%</b>	<b>17.5%</b>	<b>18.61%</b>	<b>18.03%</b>
<b>E: TOURISM</b>								
1. Low Income	17.2	70.8	35.7	158.8	98.3	138.8	132.1	651.7
2. Total Income	89.7	370.1	186.8	830.4	513.7	725.8	690.8	3,407.3
<b>3. Low income as % of Total income</b>	<b>19.1%</b>	<b>19.1%</b>	<b>19.1%</b>	<b>19.1%</b>	<b>19.1%</b>	<b>19.1%</b>	<b>19.1%</b>	<b>19.1%</b>
<b>GRAND TOTAL</b>								
1. Low Income	120.6	246.8	87.7	383.0	291.8	255.7	412.2	1,797.7
2. Total Income	661.4	1,329.4	473.4	2,116.1	1,595.2	1,392.8	2,195.4	9,763.7
<b>3. Low income as % of Total income</b>	<b>18.2%</b>	<b>18.6%</b>	<b>18.5%</b>	<b>18.1%</b>	<b>18.3%</b>	<b>18.4%</b>	<b>18.8%</b>	<b>18.4%</b>

Given the shortcomings of the model structure, it is still significant to note from Table 5 that  $\pm 18,0\%$  of the workers' remuneration generated by the wine industry as a whole is destined for the lower income groups.

## **6 Macro-economic efficiency of the wine industry**

The macro-economic impact is also measured in terms of certain economic effectiveness criteria. These establish the extent to which the wine industry utilises resources efficiently. Since capital is a scarce resource in South Africa, the criteria measured the effectiveness of the utilisation of capital in terms of labour and GDP creation, relative to the rest of the economy. In order to make these comparisons, certain multipliers or ratios were calculated. The absolute impacts illustrated in Tables 2 to 5 were used to determine these ratios.

The accompanying Table 6 reflects the effect of the project on economic growth and job opportunities. It also reflects the Gross Domestic Product/Capital ratio (GDP/Capital ratio) and Labour/Capital ratio. The contribution towards economic growth and job creation, relative to the capital employed in the process, is established in this manner. If continuous economic growth in the long-term is considered more important than job creation in the short term, the GDP/Capital ratio is the more important of the two macro-economic measures in question. On the other hand, if job creation, particularly in the short term, has priority, the Labour/Capital ratio is of more importance.

According to the Labour/Capital ratio it is obvious that capital is applied effectively regarding job creation and the ratio is higher than that of the economy as a whole. The average for the economy is 5,04 compared to 5,4 for the wine industry including tourism, and 6,33 excluding tourism.

The relative capital intensity of the agricultural segment of the wine industry is again demonstrated by the fact that its Labour/Capital ratio amounts to 7,8 compared to the 8,5 of the agricultural sector in total. But it is still much more labour intensive than most other sectors in the economy.

The GDP/Capital ratio is somewhat lower (0,37) than that of the economy as a whole, namely 0,47. The picture that emerges from the above is that the wine industry per se (excluding the tourism sector) has steadily become more capital intensive, from the primary level upwards (excluding trade and accommodation). Especially since 1996, the capital intensifying trend was caused by, for example, more cellars making red wines, which are more capital intensive. The growth in private cellars has been fast, and these use the latest, generally more capital intensive production technologies.

Table 6 also reflects the low income/total income ratio. This ratio shows the portion of household income that goes to the low-income households as generated by the wine industry. The ratio for the wine industry is 18%, which is lower than that of the total economy. This is again a reflection that the industry is becoming more mechanized.

**Table 6: A multiplier analysis of the wine industry in the Western Cape [1999 prices]**

<b>MACRO-ECONOMIC INDICATORS</b>	<b>Total (including tourism)</b>		<b>Wine industry only</b>
GDP [Rm]	14,557		9,385
Total labour	208,298		159,952
Total capital [Rm]	38,263		25,263
<b>Household income</b>			
Total [Rm]	9,764		6356,4
Low income groups [Rm]	1,798		1146,0
<b>EFFECTIVENESS CRITERIA</b>			
<b>A: Wine industry in the Western Cape</b>			
<b>GDP/CAPITAL ratio</b>	<b>0.38</b>		0.37
- Primary agriculture	0.21		
- Cellars	0.28		
- Refining	0.41		
- Wholesale & retail	0.61		
- Tourism	0.40		
<b>LABOUR/CAPITAL ratio</b>	<b>5.444</b>		6.33
- Primary agriculture	7.860		
- Cellars	2.428		
- Refining	5.289		
- Wholesale & retail	7.629		
- Tourism	3.719		
<b>Low income/Total income (%)</b>	<b>18.4%</b>		18.0
<b>B: Sectors of the economy</b>			
	<b>GDP/ Capital</b>	<b>Labour/ Capital</b>	<b>Low income/ Total income</b>
<b>Agriculture</b>	0.43	8.52	22.4%
<b>Gold &amp; other mining</b>	0.42	4.36	21.4%
<b>Food manufacturing</b>	0.47	6.14	20.8%
<b>Beverages</b>	0.41	3.81	20.8%
<b>Tobacco products</b>	0.55	5.06	19.8%
<b>Textiles</b>	0.55	5.61	20.0%
<b>Clothing</b>	0.70	12.03	17.8%
<b>Leather &amp; leather products</b>	0.58	8.24	19.8%
<b>Footwear</b>	0.68	8.88	18.4%
<b>Wood &amp; wood products</b>	0.54	8.91	20.8%
<b>Furniture</b>	0.63	8.95	18.9%
<b>Paper &amp; paper products</b>	0.53	4.69	19.7%
<b>Printing &amp; publishing</b>	0.60	6.35	16.0%
<b>Chemicals</b>	0.42	3.24	18.8%
<b>Rubber &amp; rubber products</b>	0.52	4.85	20.2%
<b>Plastics</b>	0.51	5.68	19.5%
<b>Non-metallic mineral products</b>	0.50	5.29	21.2%
<b>Basic metals</b>	0.35	2.68	18.4%
<b>Fabricated metals</b>	0.57	4.65	19.8%
<b>Machinery</b>	0.60	4.77	17.3%
<b>Electrical machinery</b>	0.59	7.08	18.2%
<b>Transport equipment</b>	0.53	4.73	19.1%
<b>Other manufacturing</b>	0.64	5.23	17.3%
<b>Electricity, gas &amp; water</b>	0.28	1.65	20.1%
<b>Building construction &amp; civil engineering</b>	0.56	6.87	19.7%
<b>Trade &amp; accommodation</b>	0.60	5.18	17.8%
<b>Transport &amp; communication</b>	0.32	2.40	18.3%
<b>Business &amp; financial services</b>	0.34	2.33	15.9%
<b>Community services</b>	0.41	3.88	18.1%
<b>C: Total manufacturing</b>	0.49	4.88	19.1%
<b>D: Total economy (Private Sector)</b>	0.47	5.04	19.2%

## **7 Sectoral impact analysis**

### **Agriculture**

The agricultural sector's impact is more a reflection of the general agricultural backward linkage structure in South Africa. The biggest impact is with the agriculture sector (inter impact), chemicals and the trade and accommodation sectors.

### **Cellars**

Cellars also have a big inter impact, reflecting the process of beneficiation of the wine "in-house".

### **Manufacturing**

The manufacturing sector of the wine industry has a more evenly spread backward linkage structure than cellars, reflecting a more specialised process of wine making and distilling (more capital intensive and technology driven).

### **Wholesale and retail trade**

This sector's impact structure portrays the classic trade business activity. For example, 56% of the GDP impact is within itself, again reflecting the whole range of "in-house" value adding activities (packaging, labelling, bottling, distributing etc.) that take place in the wholesale and retail trade sector.

### **Tourism**

The tourism GDP impact is much more widespread over the sectoral range in the economy, the largest impact going to transport and communication services (19,4%).

### **Total**

In its totality the wine industry's sectoral impact structure reflects the "weighted average" of all the sub-sectors combined. It is important to note that the GDP impact coefficients make allowance for import "leakages" from overseas. The sectoral impacts therefore only reflect the impacts on the domestic production sectors.

TABLE 7a      **SECTORAL IMPACT: Production [R million, 1999 Prices]**

<b>ECONOMIC SECTOR</b>	<b>AGRI-CULTURE</b>	<b>%</b>	<b>CELLARS</b>	<b>%</b>	<b>REFINING</b>	<b>%</b>	<b>WHOLESALE &amp; RETAIL</b>	<b>%</b>	<b>TOURISM</b>	<b>%</b>	<b>TOTAL</b>	<b>%</b>
agric	1,439	36.1%	46	2.2%	187	3.3%	178	2.6%	532	5.2%	2,383	8.3%
gold-min	0	0.0%	0	0.0%	0	0.0%	0	0.0%	18	0.2%	19	0.1%
other-min	62	1.5%	34	1.6%	60	1.1%	60	0.9%	120	1.2%	337	1.2%
food-mfg	165	4.1%	81	3.8%	312	5.5%	310	4.6%	1,204	11.9%	2,073	7.2%
beverage	34	0.8%	762	35.4%	2,232	39.6%	70	1.0%	390	3.8%	3,487	12.1%
tobacco	7	0.2%	3	0.2%	8	0.1%	12	0.2%	16	0.2%	47	0.2%
textiles	20	0.5%	10	0.5%	25	0.5%	38	0.6%	55	0.5%	148	0.5%
clothing	20	0.5%	11	0.5%	30	0.5%	43	0.6%	60	0.6%	164	0.6%
leather	3	0.1%	2	0.1%	4	0.1%	6	0.1%	10	0.1%	24	0.1%
footwear	8	0.2%	4	0.2%	9	0.2%	14	0.2%	19	0.2%	54	0.2%
woodprdt	25	0.6%	5	0.2%	18	0.3%	17	0.2%	24	0.2%	88	0.3%
furniture	11	0.3%	6	0.3%	14	0.2%	28	0.4%	31	0.3%	89	0.3%
paper	43	1.1%	20	0.9%	182	3.2%	122	1.8%	155	1.5%	522	1.8%
printing	18	0.5%	12	0.5%	42	0.7%	61	0.9%	63	0.6%	196	0.7%
chemicals	392	9.8%	210	9.7%	236	4.2%	320	4.7%	553	5.4%	1,711	6.0%
rubber	28	0.7%	5	0.2%	13	0.2%	18	0.3%	35	0.3%	99	0.3%
plastics	288	7.2%	12	0.6%	72	1.3%	51	0.8%	65	0.6%	489	1.7%
n-met-min	25	0.6%	12	0.6%	92	1.6%	26	0.4%	54	0.5%	209	0.7%
base-metal	15	0.4%	10	0.5%	25	0.4%	19	0.3%	34	0.3%	103	0.4%
fabr-metal	63	1.6%	23	1.0%	156	2.8%	52	0.8%	132	1.3%	425	1.5%
machines	49	1.2%	59	2.7%	45	0.8%	38	0.6%	60	0.6%	251	0.9%
elect-mach	11	0.3%	9	0.4%	14	0.2%	22	0.3%	36	0.4%	91	0.3%
trnsp-eqip	57	1.4%	35	1.6%	77	1.4%	132	1.9%	175	1.7%	477	1.7%
mfg-mfg	4	0.1%	3	0.1%	7	0.1%	10	0.1%	396	3.9%	419	1.5%
elect/G&W	153	3.8%	103	4.8%	173	3.1%	192	2.8%	342	3.4%	962	3.4%
constr	10	0.3%	67	3.1%	15	0.3%	64	0.9%	49	0.5%	205	0.7%
civ-eng	6	0.1%	4	0.2%	7	0.1%	10	0.2%	24	0.2%	51	0.2%
trade	330	8.3%	173	8.0%	486	8.6%	3,282	48.5%	1,002	9.9%	5,273	18.4%
accom	24	0.6%	17	0.8%	40	0.7%	69	1.0%	1,123	11.1%	1,274	4.4%
transp	118	3.0%	97	4.5%	190	3.4%	219	3.2%	1,565	15.4%	2,190	7.6%
commun-srv	60	1.5%	25	1.2%	64	1.1%	105	1.6%	110	1.1%	365	1.3%
fin-serv	308	7.7%	177	8.2%	427	7.6%	876	12.9%	986	9.7%	2,775	9.7%
com-serv	191	4.8%	117	5.5%	373	6.6%	309	4.6%	721	7.1%	1,711	6.0%
<b>TOTAL</b>	<b>3,988</b>	<b>100.0%</b>	<b>2,155</b>	<b>100.0%</b>	<b>5,637</b>	<b>100.0%</b>	<b>6,770</b>	<b>100.0%</b>	<b>10,160</b>	<b>100.0%</b>	<b>28,710</b>	<b>100.0%</b>

TABLE 7b SECTORAL IMPACT: GDP [R million, 1999 Prices]

ECONOMIC SECTOR	AGRICULTURE	%	CELLARS	%	REFINING	%	WHOLESALE & RETAIL	%	TOURISM	%	TOTAL	%
agric	657	36.6%	26	2.4%	111	4.4%	105	2.7%	315	6.1%	1,214	8.3%
gold-min	0	0.0%	0	0.0%	0	0.0%	0	0.0%	11	0.2%	12	0.1%
othr-min	35	1.9%	19	1.7%	34	1.3%	34	0.9%	68	1.3%	189	1.3%
food-mfg	33	1.8%	16	1.5%	62	2.5%	62	1.6%	307	5.9%	481	3.3%
beverage	11	0.6%	465	42.1%	945	37.4%	23	0.6%	141	2.7%	1,585	10.9%
tobacco	2	0.1%	1	0.1%	2	0.1%	4	0.1%	5	0.1%	14	0.1%
textiles	7	0.4%	4	0.3%	9	0.4%	14	0.4%	20	0.4%	55	0.4%
clothing	9	0.5%	5	0.4%	13	0.5%	18	0.5%	25	0.5%	69	0.5%
leather	1	0.1%	1	0.0%	1	0.1%	2	0.1%	3	0.1%	8	0.1%
footwear	3	0.2%	2	0.1%	4	0.1%	6	0.1%	8	0.1%	22	0.1%
woodprdt	10	0.6%	2	0.2%	7	0.3%	7	0.2%	10	0.2%	35	0.2%
furniture	4	0.2%	2	0.2%	6	0.2%	11	0.3%	13	0.2%	36	0.2%
paper	15	0.9%	7	0.6%	65	2.6%	44	1.1%	56	1.1%	187	1.3%
printing	9	0.5%	6	0.5%	20	0.8%	29	0.7%	30	0.6%	94	0.6%
chemicals	121	6.7%	64	5.8%	73	2.9%	98	2.5%	170	3.3%	527	3.6%
rubber	10	0.6%	2	0.2%	5	0.2%	7	0.2%	13	0.2%	36	0.2%
plastics	88	4.9%	4	0.3%	22	0.9%	16	0.4%	20	0.4%	149	1.0%
n-met-min	11	0.6%	5	0.5%	41	1.6%	11	0.3%	24	0.5%	93	0.6%
base-metal	7	0.4%	5	0.4%	11	0.4%	8	0.2%	15	0.3%	45	0.3%
fabr-metal	23	1.3%	8	0.8%	58	2.3%	19	0.5%	49	1.0%	159	1.1%
machines	20	1.1%	24	2.2%	19	0.7%	16	0.4%	25	0.5%	103	0.7%
elect-mach	5	0.3%	4	0.3%	6	0.2%	9	0.2%	15	0.3%	38	0.3%
trnsp-eqip	12	0.7%	8	0.7%	16	0.6%	28	0.7%	37	0.7%	101	0.7%
othr-mfg	3	0.2%	2	0.2%	5	0.2%	6	0.2%	266	5.1%	281	1.9%
elect/G&W	84	4.7%	55	5.0%	95	3.7%	105	2.7%	187	3.6%	526	3.6%
constr	3	0.2%	18	1.7%	4	0.2%	17	0.4%	13	0.3%	56	0.4%
civ-eng	2	0.1%	1	0.1%	2	0.1%	3	0.1%	7	0.1%	16	0.1%
trade	207	11.6%	108	9.7%	305	12.1%	2,305	58.2%	641	12.4%	3,566	24.5%
accom	9	0.5%	6	0.5%	14	0.6%	24	0.6%	413	8.0%	466	3.2%
transp	69	3.8%	56	5.0%	111	4.4%	128	3.2%	927	17.9%	1,291	8.9%
commun-srv	48	2.7%	21	1.9%	52	2.1%	85	2.2%	89	1.7%	296	2.0%
fin-serv	221	12.3%	126	11.4%	305	12.1%	627	15.8%	706	13.6%	1,984	13.6%
com-serv	54	3.0%	33	3.0%	106	4.2%	87	2.2%	544	10.5%	825	5.7%
<b>TOTAL</b>	<b>1,792</b>	<b>100%</b>	<b>1,105</b>	<b>100%</b>	<b>2,529</b>	<b>100%</b>	<b>3,959</b>	<b>100%</b>	<b>5,173</b>	<b>100%</b>	<b>14,557</b>	<b>100%</b>

## 8 The regional impact

Use was made of a regionally adjusted input-output model to break down the turnover figures of the various economic sectors and apportion the impact of the wine industry in the GDP figures to the Western Cape and the rest of the country. The results are shown in Table 8.

The analysts were compelled to make certain important assumptions with respect to, for instance, the portion of the trade sectors' turnover directly generated in the Western Cape. (It was assumed that 50 % of the value-added portion would be sourced from the Western Cape.)

Tourism presented a major challenge. The assumption was made that 100% of the value added portion (i.e. salaries and wages plus Gross Operating Surplus) of tourist spending in the Western Cape actually was spent there.

As far as the intermediate portion of the overall spending/turnover of each economic sector is concerned, the assumption was made that the regional distribution would be determined by the presence or absence of such production activities in the 9 provinces. Surely, more exact information is required to improve the quality of the model's results, but this will require several surveys of substantial size and cost.

Given these limitations, one can still conclude with a reasonable degree of certainty that more than 60% of the income generated by the wine industry is actually spent in the Western Cape. There is also reason to believe that the Western Cape tourism sector's share of the national total is somewhat underestimated due to the nature of the core assumptions fed into the model. It is also gratifying to note that the sectoral model's results show higher Western Cape percentages than the calculations conducted for Table 3 above.

**Table 8: Regional impact of different economic sectors in the Western Cape and South Africa**

<b>Economic sector</b>	<b>Western Cape</b>	<b>Rest of South Africa</b>	<b>Total</b>
<b>A: Primary agriculture</b>	64.7%	35.3%	100%
<b>B: Co-operative cellars</b>	64.0%	36.0%	100%
<b>C: Refining</b>	39.3%	60.7%	100%
<b>D: Wholesale and retail</b>	18.9%	81.1%	100%
<b>E: Tourism</b>	51.6%	48.4%	100%
<b>TOTAL</b>	62.9%	37.1%	100%

**ANNEXURE A****Note 1 Estimating total manufacturing and trade components for 1999**

According to the News Release p6141.2 of Statistics South Africa, the growth rate of total wholesale trade sales (in current prices) of foodstuffs, beverages and tobacco between 1994-1999, amounted to 24 %. This growth rate is a good reflection of the overall growth in turnover in the wine and distilling industry over that period.

For controlling purposes, an alternative calculation was made. Based on data contained in Tables 9.1 and 9.2 of SAWIS's publication no. 24<sup>1)</sup> and information on average wholesale trade prices of wine (see paragraph 6.4 of the same publication) a growth rate in total turnover value of between 20 % to 24 % over the period 1996-1999 was obtained).

**Note 2 Summary – Wine Alcoholic Beverages imported fob ('000) for 1999**

Code:

(22041000)	1	Sparkling Wine	-	R 25 945
(22042140)	2	Unfortified Wine	-	R 13 337
(22042150)	3	Fortified Wine	-	R 1 159
(22042940)	4	Unfortified Wine	-	R 39 952
(22051000)	5	Grape must	-	R 1 672
(22071000)	6	Undenatured Ethyl	-	R 28 500
(22082010-90)	7	Spirits obtained from wine	-	R 30 000
(22083000)	8	Whiskies	-	R334 841
(22083010)	9	Whiskies	-	R 41 830
(22084010-90)	10	Rum	-	R 44 000
(22086010)	11	Vodka	-	R 1 500
(22087020)	12	Liqueurs	-	R 27 600
(22089020-90)	13	Liqueurs	-	R 38 093

Total wines				R 82 065
Total wine based spirits				<u>R168 213</u>
<b>TOTAL</b>				<b>R250 278</b>

Source: Department of Customs and Excise.

<sup>1)</sup> South African Wine Industry Statistics no. 24, Published by South Africa Wine Industry Information System, P O Box 238, Paarl, 7620.

**Note 3 Tourist spending in study area**

Year 2000	Tourist spending in "wine routes" <sup>1)</sup>			R million
	<i>West Coast</i>	<i>Winelands</i>	<i>Breede River</i>	<i>Total</i>
Overseas	124,0	371,5	247,0	742,5
Africa	32,1	96,3	64,2	192,6
Domestic	422,7	1268,2	845,5	2536,4
<b>Total</b>	<b>578,8</b>	<b>1736,0</b>	<b>1156,7</b>	<b>3471,5</b>

The "wine routes" refer to tourism areas and differ from the wine producing subregions.

Source: WESGRO

**Note 4 Wine and Wine-based spirits consumption in South Africa 1996 and 1999**

	1996	1999	% growth
Wine (litres)	359,748,332	351,005,051	(-) 2,4 %
Brandy (litres)	55,533,421	40,656,188	(-) 26,8 %
<b>Total</b>	<b>415,281,753</b>	<b>391,661,239</b>	<b>(-) 5,7 %</b>

Source: SAWIS (1999)

**Note 5 Western Cape sourced portion of Wine Industry**

To arrive at a figure for the amount of business that will remain in South Africa if, on assumption, the industry is totally sourced from overseas, a number of assumptions need to be made. For example, will there still be a manufacturing sector left, perhaps sourcing its un-refined raw materials from overseas? Will the Trade sector remain the same by importing wine in bottles or bulk to be packaged and distributed domestically?

**First Assumption**

Domestic Demand for wine and wine alcoholic beverages will remain unchanged. For wine imported in packaged form the domestic trade and distribution costs will be proportional to the level of activity.

Using data in Table 2 this will amount to:

$$\frac{2975,0 + 250,3 - 704,1}{7369,8 - 1595,9 + 500,6} \times \frac{100}{1}$$

$$= 51,4 \%$$

**Second Assumption**

Demand decrease because of the (theoretical) closure of the agricultural and manufacturing sector of the industry.

This would entail the following percentage (figures from Table 2):

$$\frac{1435,9 + 2254,8}{7369,8} \quad \times \quad \frac{100}{1}$$

$$= \quad 50 \%$$

It could further be assumed that should the wine farms disappear, it would detrimentally affect tourist numbers. The question is by how much? Foreign tourism would be affected drastically, but a relatively small part of domestic tourism would be affected. Ultimately, for demonstration purposes, it was assumed that because of the tourism factor, another 15 % of trade income would be negatively affected.

In total therefore, only 35 % of the trade portion will remain intact.

In Table 2 it is given as follows:

$$2975,0 - 250,3 \quad \times \quad 35 \%$$

$$= \quad \text{R953,6 million}$$

**LIST OF INFORMATION SOURCES**

- 1 INDUSTRIAL DEVELOPMENT CORPORATION Industry Analysis – The South African Wine Industry; February 2000; Sandton, South Africa
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- 3 NATIONAL DEPARTMENT OF AGRICULTURE. Abstract of Agricultural Statistics; 2000; Pretoria, South Africa
- 4 DEPARTMENT OF TRADE & INDUSTRY. [www.dti.pwv.gov.za](http://www.dti.pwv.gov.za)
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- 6 WESGRO. Data pertaining to tourist spending in wine routes
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- 8 Wang, T.F. & Mullins, D. The model of income distribution, employment and growth for South Africa: A semi-closed input-output approach; Studies in Economics and Econometrics; 1988.
- 9 CHIEF DIRECTORATE OF AGRICULTURE, WESTERN CAPE. A Social Accounts Matrix (SAM) of the Western Cape