

PART 4 – AROMA CHEMICALS DERIVED FROM ESSENTIAL OILS

8 SOCIO-ECONOMIC IMPACTS AND BENEFITS

8.1 Job creation

Chemical Sector

The chemical sector employment that could potentially be created by the growth of the essential oil industry would have to be determined from the resulting potential growth of the Flavour and Fragrances industry in South Africa. This would be a long term benefit. However, the secondary beneficiation stage of the essential oil industry has a lot in common with other specialty chemical segments. The types of jobs that would typically be created are those that relate to the Fine and Specialty Chemical sector. According to the Chemical Sector Skills Development Plan, the skills requirements in this sub-sector are process operators, formulation technicians, plant superintendents, warehousing & distribution, engineering & maintenance. The skills development plan further notes that there is also general shortage of R & D technicians in the sub-sector. Besides the general technical skills required, the flavor and fragrance industry (even as it relates to a young essential oils industry) has some additional and very specific skill requirements. The flavour and fragrance formulation industry requires specific skills in the area of chemistry as it relates organoleptic discrimination and analysis. These skills are also required in order to successfully establish the South African essential oil industry.

Agricultural Sector

In addition to the above, one cannot lose sight of the fact that the agricultural component of essential oils industry will have an impact on employment. Some of these jobs include analytical chemists and laboratory technicians.

Agriculture is traditionally a creator of a significant number of employment opportunities for relatively unskilled persons, albeit at relatively low wages. Currently, agriculture accounts for some 6% of South Africa's GDP and 9% of its employment. This is considered low by comparison to other emerging markets.⁶⁶ The historic, and continuing, exclusion of the majority of the population from involvement in commercial agriculture is one of the causes for

⁶⁶ "Policies to Promote Growth and Employment in South Africa" JD Lewis, July 2001, World Bank, Discussion Paper 16 ,

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this. Agriculture and rural development is one of the ways in which South Africa can alleviate poverty and create wealth.

Based on consultation with industry players it is estimated that for every 1 hectare under cultivation one creates 1 semiskilled job and for every 20 hectare unit one creates one skilled job. This is particularly the case where one is wishing to move to organic farming techniques. If one accepts the premise that the potential of the South African essential oil industry (excluding the existing market in bulk oils) could be approximately R125 million originating from some 3000 hectares cultivated, then the industry could create some 3000 semi-skilled and 150 skilled positions. These estimates are similar to those produced by applying the coefficients determined by the World Bank, and derived from the table in Appendix “F”. The coefficients set out in the table below apply to each R1 million of output thus providing a job creation estimate across a range of employment categories:

Table 27: Agricultural Job Creation in the Potential Essential Oil Industry⁶⁷

Employment Type	Factor	Jobs
DIRECT JOBS		
Professional	0.08	10.02
Skilled	1.00	125.22
Semi-skilled	16.65	2084.85
Informal	0.69	86.40
TOTAL DIRECT	18.42	2306.48

8.2 Creation of a production platform for non-food/industrial crops

One of the more interesting, and perhaps significant, potential benefits of developing the essential oils industry in South Africa is that it could provide a production platform for the cultivation of other non-food crops such as indigenous plants grown for the extraction of their flavour, fragrance or medicinal properties.

⁶⁷ Coefficients drawn from Appendix “F”

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It is widely understood that South Africa, indeed Africa, has a great many indigenous plants that have potential commercial value. However, in order to exploit these commercially and on an international scale one needs to move from wild-harvesting to cultivation. This is required in order to ensure sustainability, both in terms of quantity and quality. International studies and local experience (e.g. the CSIR) has shown that it is very difficult to bring new botanical extracted products to the international market. Besides having to create the initial demand one is also faced with queries with regards to safety, quantity and quality. These latter issues are only addressed by good agronomic practices and having the infrastructure and skills to manage chemical products.

Essential oils and other non-food crops generally require a higher level of expertise to grow. This requires training and support. The additional complexities and costs constitute a barrier to entry and accordingly a concerted effort is required. This fact has been recognized by the National Department of Agriculture, which, together with Provincial Departments, is investigating the requirements for expanding what they have termed the “industrial crops”. Industrial crops are to be divided into three sections: a) fibre crops (cotton, jute and hemp etc); b) essential oils; and c) medicinals. The Department of Science and Technology has also identified essential oils as an area requiring attention. These departments join TISA (DTI) as government departments recognizing the need to investigate the potential of the essential oils industry.

Since essential oils form an accepted part of the international trade in botanical extracts, the development of the industry would form a good base upon which South Africa could establish itself as a producer of botanical extracts. International literature and experience has shown that commercial production of novel indigenous products is best conducted as part of a broader strategy of positioning the country and its producers as world-class suppliers of related but existing and accepted products. The development of the essential oils industry could be a precursor to a wider cluster of industries bringing high value natural products to the international market, and would have a broader impact than just the flavours and fragrance industry.