

## THE STATUS, PROBLEMS AND FUTURE OF THE WOOLLED SHEEP INDUSTRY IN SOUTH AFRICA

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The downward trend in the production of wool in South Africa, is a matter of serious concern to leaders of the wool industry. But then, this decline in the output of raw wool is not restricted to South Africa; it is a phenomenon that presents itself in almost all the leading fine wool producing countries as the figures in Table 1 clearly reflect (The Wool Outlook, No. 36 (1974)).

Table 1

<i>Estimated world wool production (m. Kg)</i>					
Country	1970-71	1971-72	1972-73	1973-74	% + or -
Australia	886	875	736	701	- 21,0
New Zealand	334	322	309	278	- 16,8
South Africa (b)	123	114	108	103	- 16,3
U.S.A.	85	82	78	72	- 15,3
<b>TOTAL</b>	<b>1428</b>	<b>1393</b>	<b>1231</b>	<b>1154</b>	<b>- 19,2</b>
Eastern Europe (c)	90	90	92	93	+ 3,3
USSR	419	429	420	428	+ 2,2
<b>TOTAL</b>	<b>509</b>	<b>519</b>	<b>512</b>	<b>521</b>	<b>+ 2,4</b>

(a) Subject to Revision

(b) Excluding Lesotho and South West Africa

(c) Albania, Bulgaria, Czechoslovakia, Eastern Germany, Hungary, Poland, Romania

The drop in the raw wool output of Australia since 1970 which amounts to 185 m. kg, exceeds the total South African production in 1970/71 by more than 50% which serves to show the magnitude of this downward trend in Australia where the wool industry is the main stay of that country's economy. The fact that South Africa has over the same period sustained a reduction of only about 20 m. kg. of greasy wool, however, does not detract from the adverse effects this has had on the country as a whole.

The decision of the South African Wool Board to launch a woolled sheep promotion campaign in collaboration with N.W.G.A., the Merino Stud Breeders Association and the wool trade with the Departments of Agriculture rendering technical assistance, was therefore fully warranted and timeously conceived.

### The status of the wool industry

In comparison with other countries and viewed on the basis of absolute figures, South Africa is a small producer of wool; but proportionately the sheep and wool industry is to this country of importance equal to what the woolled sheep industries are to the big

wool producing countries, a fact which is borne out by the status, prestige and economic importance of this industry in the Republic of South Africa.

A meaningful assessment of the status of the woolled sheep industry demands that the industry's relative importance, economically, biologically, socially and also politically should be evaluated objectively and that it should be viewed in its true perspective. Questions that are pertinent to this matter of status, are:

- what is the economic significance of the woolled sheep industry in terms of e.g. its earnings in foreign exchange, its contribution towards the country's gross agricultural product, its capital investment, its supply of employment?
- what share does it have in meeting the country's demand for food?
- what role does it play in the utilization of the country's natural resources?
- what is the position with regard to the marketing of commodities derived from this industry?
- is the production of elite breeding stock entrusted to well organised and well established breed societies?
- what promotional organisations, appertaining specifically to the woolled sheep industry, operate nationally and internationally?

The answers to these questions should not be evaluated tandemly and independently of one another only, but they should also be considered in their combined effect because the factors that determine status are obviously strongly inter-related and inter-dependent.

### *Economic significance*

A look at the relevant facts and statistics (Division of Agricultural Marketing Research, 1974) reveals the following:

For the ten year period 1963/64 to 1972/73 the woolled sheep industry's mean annual contribution towards the gross value of agricultural production amounted to R161,2 million which is 12% of the total gross value of R1 293,5 million. (These figures have taken both wool and mutton into account). During the same period wool's share of the total value of agricultural exports amounted to 22,1% while its contribution towards the total exports (excluding gold) was maintained at a level of 8,1%.

The economically active population of the R.S.A. numbers approximately 8 million of which 2,24 million (all races) are involved in agriculture, forestry, fishing and hunting (Div. Agr. Marketing Research, 1974). However, Agriculture predominates because the combined contribution of the latter three is known to be very small. The available statistics unfortunately do not make such subdivisions as to enable the

identification of the relative position of the woolled sheep industry in this connection but in 1967 the South African Wool Board estimated that altogether 750 000 people in the R.S.A. (all races) depend directly or indirectly on the wool and wool textile industry alone for a living. It is therefore obvious that the wool industry plays a very important role in maintaining a state of almost full employment in South Africa which in its turn is fundamental to general economic well-being and thus the maintenance of a high standard of living.

The economic importance of the Sheep and Wool Industry in S.A. is also underlined by the enormous amount of capital invested in the industry. In 1967 the South African Wool Board (personal communication) estimated that at that time the total investment in land, permanent improvements and stock amounted to R2 500 million. Today this figure undoubtedly is very much higher. Woolled sheep farming is indeed capital intensive as was clearly pointed out by the Committee of Investigation into the Financial Position and Financing of Small Stock Farmers (1972). Gerstner (1975 – personal communication) reports that in 1974 the mean capital outlay of a Karoo farm amounted to R157 000.

A favourable trade balance, internal economic welfare, full employment and a high standard of living are factors conducive of social advancement and of political strength and stability, such as this country has experienced the last couple of decades. In the light of the foregoing facts and figures I make bold to say that the woolled sheep industry has had a big hand in bringing about this state of prosperity.

#### *Food supply*

The world-wide problem of the feeding of a fast growing population is becoming bigger; even more rapidly in South Africa, because here the growth of the population is accompanied by a substantial and sustained rise in the standard of living of all social grades. It is a question not only of more mouths to feed but of increased purchasing power that can afford more food per capita, and at that, expensive protein food. This has brought the question of a shortage of red meat to the fore and various study and work groups have in the past been commissioned to investigate the situation and to recommend ways and means whereby this growing demand for meat can be satisfied.

One somehow gets the impression that in these deliberations the potential of the Small Stock Industry has on so many occasions been underestimated if not completely ignored. Cognisance should be taken of the fact that 14,7% of the 788 300 metric tons which represents the total annual production of red meat, is produced by woolled sheep alone (Gerstner, 1974 – personal communication) and that for the Small Stock Industry as a whole this figure is as high as 20,4%. It must be conceded that this figure is relatively small but it is by no means negligible; on the contrary it adds greatly to the significance and status of the woolled sheep industry in South Africa.

There are many thousands of households in South Africa where domestic slaughterings are done but where facilities do not exist to cope with beast carcasses. On an overwhelming majority of farms it is in fact tradition to slaughter one or at the most two beasts per year and then only in the winter. For the rest of the year the meat requirements of the household and all the labourers have to be met by the Small Stock Industry.

This is an instance where the peculiarities of social structure, tradition and mode of living have rendered the Small Stock Industry indispensable and have thus lent status and prestige to it.

#### *Utilization of natural resources*

For more than a century after the first white colonists settled in the interior, the arid regions were the economic heart of South Africa. The more humid eastern regions were not drawn into its economic life until the advance of the White Settlers had carried their pastoral economy north of the Orange River and across the Drakensberg. Arable farming remained relatively unimportant until the discovery of diamonds, gold and other minerals had brought an influx of immigrants and laid the foundation of the first large inland towns. Even then farming remained predominantly pastoral to a degree that left the country a net importer of food-stuffs until the first world war.

The present-day composition of the gross agricultural production clearly shows to what extent the emphasis has shifted from predominantly pastoral farming to one which represents a more favourable balance between stock farming and crop production.

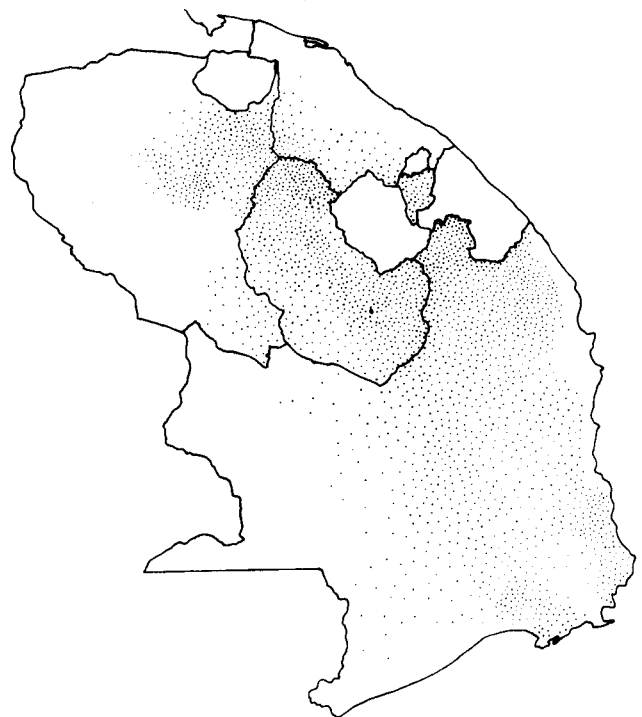


Fig. 1 *Distribution of woolled sheep (August, 1974; one dot = 10 000)*

It however still remains a fact that about 85% of the total area of the Republic of South Africa is non-arable, mostly arid and semi-arid extensive pastoral country which can be put to productive and economic use only by way of having it grazed with small stock. The largest part of this area is eminently suitable for woolled sheep farming, as is clearly shown by the distribution of woolled sheep in Fig. 1.

#### *Marketing of wool*

Marketing of wool in South Africa has gone through a very interesting process of evolution. There was a time when wool was either sold out of hand to traders travelling around the country or bartered to local general dealers in country towns for the everyday needs of producers. In those days the price was not based on clean yield or any other quality attribute such as length or fineness. In consequence, false packing was the order of the day. Not only was LOX piped into bales of fleece wool, but moisture and even soil was deliberately admixed with the wool in order to increase the weight of the bales. All this of course gave the South African wool clip a very bad name.

With the advent of the wool classing standards of the National Wool Growers Association in 1934 and later with the promulgation of Wool Packing and Marking Regulations in 1959, considerable improvement was affected in the general get-up of the South African clip. This was strongly backed up by literally thousands of wool schools that were held throughout the country while the training at agricultural colleges of prospective farmers and of persons wishing to join the wool trade, was also modernised and stepped up.

Adequate and modern facilities for the proper display of all wools that were put up for sale, gradually came into existence in all the major ports and the business of wool-marketing has, in latter years, been in the hands of well trained men.

The present wool marketing scheme, which to the best of my knowledge, is a South African innovation, is based on the acquisition by the South African Wool Board of the whole clip. Provision is made for advanced and final (deferred) payments (*voorskotte en agterskotte*). Within the same selling season this system makes possible the levelling of the price of wool within the same quality and type categories, thus obviously having the advantage of protecting the producer from falling prey to short term price fluctuations. Apart from the stabilising effect this has, the scheme also has many other features which aim at counteracting vicissitudes of the wool market.

It is common knowledge that there still is considerable controversy surrounding this new marketing scheme on which I prefer not to elaborate. The way I see it is that the sophistication of this well-considered scheme befits the status of, to South Africa, such a very important industry.

#### *Breed associations*

Since the Australian embargo on the exportation of Merino rams to South Africa in 1929, which is

still in force today, South Africa had to rely on her own resources for the supply of Merino breeding stock. At that time, however, a number of leading studs fortunately were already well established and these provided the foundation on which the industry could further be built.

The Merino Stud Breeders' Association of South Africa was founded in 1937. Through the years this Association grew steadily. Its Secretary reports that on the 1st May, 1974 it had a membership of 810 who jointly owned some 186 000 breeding ewes, which annually produce an estimated number of about 50 000 rams of a saleable standard (Eksteen, 1975 – personal communication).

Breed Societies also exist in respect of other wool-producing breeds such as the Döhne Merino, Corriedale, Walrich and the South African Mutton Merino (formerly known as the German Merino) etc. Some of these are affiliated to the South African Stud Book Association (Corriedale, Dorset Horn, South African Mutton Merino). By and large the breeding of parent stock is thus well organised and on a fairly sound footing.

#### *Promotional organisations*

The National Wool Growers Association of S.A. was founded in 1925. This organisation has shown sustained growth and progress through the years and today has a membership of 29 990. Its five provincial branches embrace no less than 692 local branches throughout the country.

As the acknowledged representative body of the wool producers of South Africa, the N.W.G.A. has vested in it the responsibility of nominating all ten producer members to the S.A. Wool Board. South Africa, being a member of the International Wool Secretariat, therefore not only has a solid promotional organisation here at the home front, but its international relations and liaison are such that it can make a firm contribution towards promoting the interest of the wool industry also at the international level.

From the foregoing the status of the wool industry and its importance to South Africa is evident. This industry is indeed an indispensable link in the national economy so that it can justifiably lay claim to the best technical, promotional and commercial service and support.

#### **Problems confronting the industry**

I do not intend to list here all conceivable problems that beset the woolled sheep industry in South Africa because agricultural scientists generally are conversant with the problems related to the feeding, breeding, management, reproduction, disease control etc. of the live stock industry. What I intend doing is to bring to the surface a few problems that are overlooked as a rule but which are indeed a source of great anxiety.

## Veld deterioration

Associated with the ever present threat of drought and the dissipation of soil and water resources, one of the main problems confronting the pastoral industry in general and the woolled sheep industry in particular, is the disquieting gradual deterioration of the veld. This retrogression is manifested in the increasing occurrence of the less valuable vegetation components and the simultaneous decrease in the more desirable and productive plant species.

There is a school of thought that propounds this deterioration of the vegetal cover to be the result of progressive desiccation which in turn is the outcome of a change in the climate. Apart from the fact that personal reminiscences are notoriously unreliable, analyses of the macro climate do not, to the best of my knowledge, substantiate this contention.

The school of thought that opposes this postulate ascribes this process of desiccation to cultural rather than to climatic causes. The theory is that the replacement of the rich, varied and mobile indigenous fauna by a far less mobile and nowadays largely sedentary fauna composed principally of one, two or at the most three kinds of exotic farm animals, has completely modified the ecological conditions affecting the vegetation.

If this is so and I believe that it is, then the only way out of this dilemma would be the application of judicious veld management systems, which in the extensive sheep grazing areas, is the essence of the optimal utilization of the natural resources related to agricultural production.

The keeping down of stock numbers to within safe limits is a very important component of any scientific management system. If this is not done the application of even the most sophisticated management system will be of no avail.

With the Stock Reduction Scheme which has at its basic objective the reduction of numbers, the Government has already spent many millions of Rand and many millions more are still to be spent before the Scheme expires. All this would be money poured down a bottomless pit if stock farmers were to revert back to original stocking rates after the termination of the Scheme. The prevention of this happening, and the implementation of sound veld management systems on a broad front, poses one of the biggest challenges to pastoralists in South Africa.

It may appear that the objectives of the Stock Reduction Scheme stand in conflict with the objectives of the woolled sheep promotion campaign. People are inclined to reason that more wool with less sheep is just not possible. An analysis of the results of the Scheme has, however, clearly shown that these two things are not necessarily incompatible; on the contrary, it was found that with less sheep the level of production can be maintained and even be slightly increased provided of course that sheep numbers are not reduced below a critical level. If to this other additional advantages are added viz. that better, bulkier

and sounder fleeces are shorn, that lambing rates are appreciably higher and that veld deterioration is slowed down and even arrested, then it must be concluded that conservatism in stocking rates and the application of one or two elementary but basic principles in veld management, are of key importance to the future of the woolled sheep industry of South Africa.

## Crimp frequency : Fibre thickness relationship

The late Professor Duerden (1929) found that for South African wools, there existed a strong relationship ( $r = 0,6$  &  $-0,8$ ) between crimp frequency and fibre thickness (Table 2). In South Africa this relationship formed the basis on which the spinning count (quality number) of wool had been assessed ever since Duerden drew up his well-known standards because crimp size or crimp frequency was, and to this day still is, the only visual attribute on which the wool classer has to depend when he classes the clip into the different fineness grades.

Table 2

### The Duerden standard

Number of crimps per 25,4 mm (inch)	Fibre thickness in micron	Spinning count
28-30	14,0-14,7	150s
25-27	14,7-15,4	120
22-24	15,4-16,2	100
20-21	16,2-17,0	90
18-19	17,0-17,9	80
16-17	17,9-18,9	70
14-15	18,9-20,0	66
12-13	20,0-21,3	64
10-11	21,3-23,0	60
8- 9	23,0-25,5	58
6- 7	25,5-29,0	56

Statistics published by the British and the South African Wool Commissions indicate that the South African wool clip has become consistently stronger since the 1944/45 season (Table 3). In 1944/45 the 70's and 70+ quality wools constituted 51% of the total Merino clip. This figure gradually decreased to less than 3% in 1964/65. Over the same period the percentage of 64s quality wools increased from 7,5% to as much as 50% while 60/64s i.e. strong wools, increased from 0,7% to 9,2% of the total. This trend has been a matter of great concern to wool leaders and has consequently motivated wool scientists in S.A. to investigate it exhaustively.

Uys (1966) analysed 6 000 wool samples, drawn from the four wool ports over six consecutive seasons. The results of this investigation clearly show how misleading an assessment of spinning count on the basis of crimp frequency can be. If an assessment of spinning count is based on crimp frequency, then it would

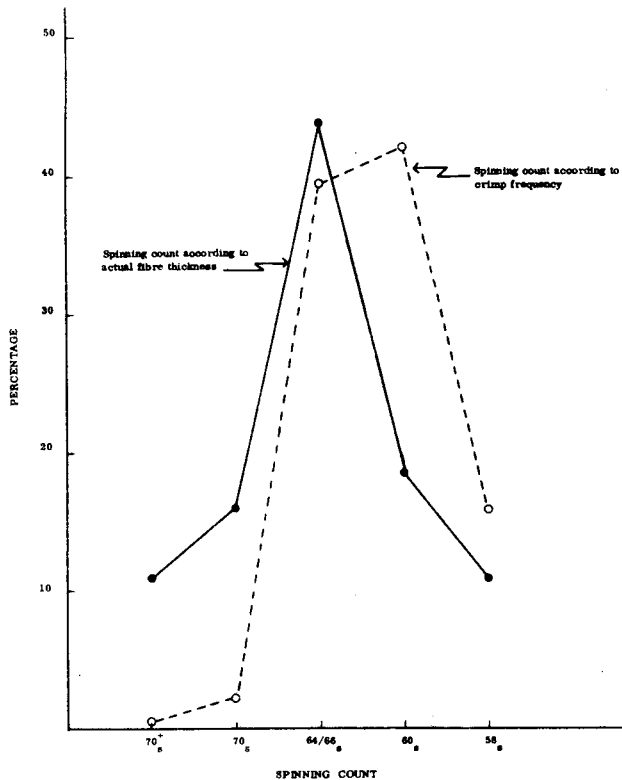


Fig. 2 Frequency distribution of different spinning counts. (Based on 6 000 samples drawn from all wool ports over six consecutive seasons)

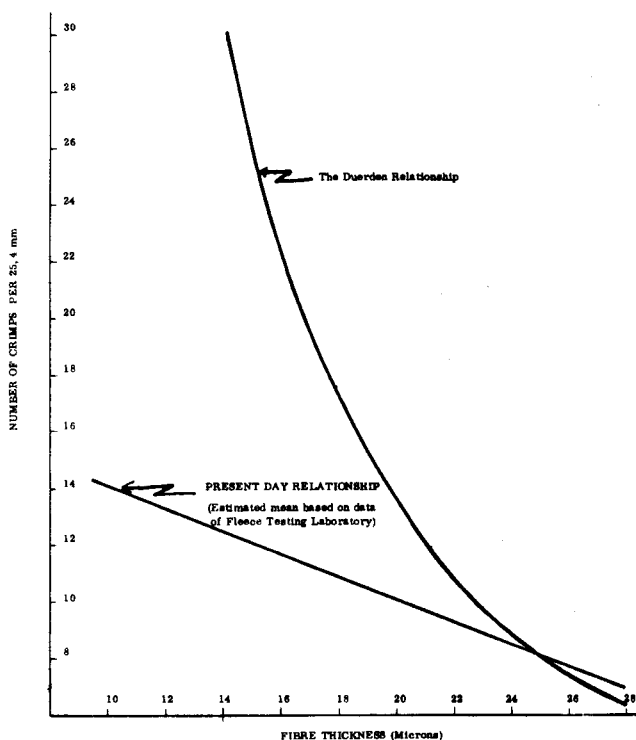


Fig. 3 Deviation from the Duerden standard

appear that the South African clip is indeed on the strong side. If however, the assessment is based on actual fibre thickness, then the frequency distribution of the different quality numbers is normal and almost in complete conformity with the 1944/45 figures of the British Wool Commission which shows that the South African wool clip has in fact not become stronger over the years. (Fig. 2).

Kruger (1971) found that the presentday crimp frequency : fibre thickness relationship is at considerable disparity with the Duerden Standard (Fig. 3). The fact that the line representing the presentday relationship, tends towards a parallel position in respect of the horizontal axis, means that nowadays, crimp size no longer indicates fibre thickness with a fair measure of reliability. On the Duerden line there is a difference of 6,0 crimps per 25,4 mm between a 60s and a 70s wool. This difference falls to as low as 1,5 crimps on the line representing the new relationship which obviously is so small that differences which do exist in fibre thickness can hardly be discerned on the basis of crimp size.

The problem that emerges from this state of affairs is that the accuracy with which the clip can be classed into the various fineness grades on the basis of crimp size, has become so low that the question arises as to whether there is any sense at all in the classing of wool into the fineness grades as laid down by the wool classing standards of the N.W.G.A.

It is commonly known that quality number is the most important price determining attribute (followed by style, vegetable matter and staple length, in that order) and also that fibre diameter is most important in the manufacturing process. If this is so, what is the value of crimp by which the wool classer judges fineness, if it is not closely related to fineness? Therefore, there is some value in examining alternatives to the traditional system of classing.

An alternative to the traditional method of classing and valuing would probably be a combination of classing, as done by the wool-grower and of testing methods. Because it would be uneconomic to objectively measure individual fleeces, it is suggested that the wool-grower subjectively differentiate only between strong, and fine fleeces on the basis of crimp frequency (classing for length to remain the same) and to then combine this with objective measurement of sale lots for fibre thickness and clean yield.

The National Wool Growers Association should look closely into this matter because it is not only a question of the more efficient classing of the clip by the producer, but also a matter of cost saving through the elimination of unnecessary and futile classing operations.

#### Shearing problems

The native blade shearers of former times, who organised themselves in itinerant gangs headed by a man of their own choice, have almost become a thing of the past. Wool producers consequently are now-

**Table 3**

*The fineness composition of the South African Merino wool clip*

Year	Fleece percentage				
	70 <sub>s</sub> +	70s	64s/70s	64s	60s/64s
1944/45	5,5	44,5	41,8	7,5	0,7
1945/46	4,9	39,4	45,2	9,6	0,9
1955/56	0,3	7,5	54,9	23,5	3,8
1956/57	0,5	8,4	57,8	29,6	3,7
1957/58	0,3	7,4	54,4	33,6	4,4
1958/59	0,2	3,3	45,2	44,7	6,7
1959/60	0,1	2,9	43,2	46,9	7,0
1960/61	0,5	3,9	44,1	45,7	5,9
1961/62	0,1	1,5	29,9	57,0	11,6
1962/63	0,2	2,4	34,7	53,2	9,6
1963/64	0,2	1,9	29,9	57,2	10,9
1964/65	0,2	2,2	38,9	49,5	9,2

adays experiencing considerable difficulties in obtaining competent shearers, a problem which appears to be proliferating steadily. Cases are known where shearing operations had to be deferred for as long as six weeks on account of this labour problem, and also there are traditional wool producers who have changed over to non-woolled mutton breeds, such as the Dorper, as a result of this encumbrance.

Some producers have attempted to overcome the problem by training their regular staff and letting them do the shearing at special remuneration. Due to a variety of preventative factors, this system could however not be implemented generally. It therefore does not offer a solution.

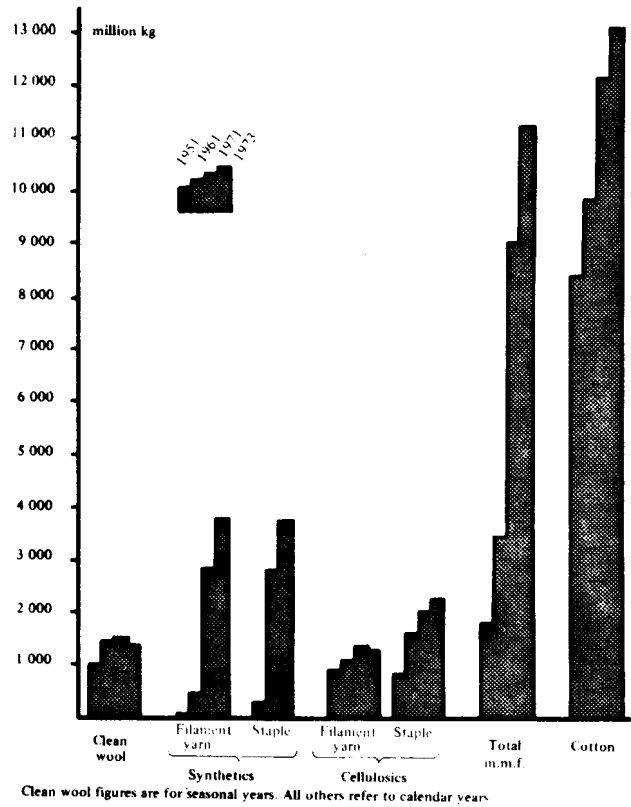
Private and co-operative shearing companies with trained shearers and competent wool classers and shed managers in their employ, seems to be the answer. The effective operation of such companies on a permanent footing, will necessitate the setting up of proper and adequate training facilities for professional shearers, a realistic adjustment of wages and other benefits and the full support of a vast majority of wool producers.

As long as shearing is done manually however, there will always be problems characteristically associated with labour such as it not always being readily available, continual representations for higher wages which lead to rising costs of production etc.

In this age of automation where the human being is fast being replaced by the machine, one can foresee in the not too distant future, the contrivance of some sort of automatic sheep shearing device that will completely eliminate the need for hand shearing and thus solve this problem permanently.

**The future of the industry**

A few closing remarks on the future of the woolled sheep industry will not be out of place.



**Fig. 4 World fibre production**

The first thing that usually comes into the minds of people when they speculate on future prospects of any primary industry, is what does the future hold with regard to price trends. Besides the fact that it would be presumptuous of me to enter this sphere of speculative thought, I moreover prefer to consider the future of this industry in broader perspective although I dare say that it is my considered opinion that the present wool marketing scheme along with the funds that can be mobilized in efforts to avert serious drops in the price of wool, augurs favourably for the future stability and economic well-being of the wool industry.

In spite of wool prices having slumped to unrewarding levels in the past, of droughts and other hardships, the number of farmers that have abandoned woolled sheep farming as a result thereof, is really insignificantly small. This shows that wool producers in South Africa generally have unshakeable faith in woolled sheep farming. They are prepared to accept setbacks knowing that things will again take a turn for the better. This philosophy has never failed them.

Although the total wool production of the world represents only about 4,0% of the total world fibre production (Fig. IV, Wool Trend No. 23 Sept. 1974), the capital outlay of wool manufacturers the world over amounts to many millions of Rand and also they have in their employ many millions of people. The wool manufacturing industry is in fact such an important factor in the infrastructure of the principal wool manufacturing countries that one can hardly conceive wool, as a key raw material, ever to become a redundant commodity.

The wool industry should however, not consider itself invulnerable. Down from the producer right up to the manufacturer, the scientist and technologist there should be unstinting and untiring endeavour to strengthen and safeguard the position of this industry.

By applying scientifically well founded systems of veldmanagement, the wool producer can conserve and protect the natural vegetation which after all is the key-stone of the woolled sheep industry. He must be ever ready and prepared to look critically at the efficiency of his enterprise and to make such adjustments as may be found necessary.

On the other hand the manufacturer, in concert with the scientist and the technologist, should leave no stone unturned in exploiting to the full the versatility of the wool fibre.

If wool is produced on a sound basis, biologically and economically, if the manufacturer, the stylist and the tailor bring to the fore the best the wool fibre can offer and if the end product does not price itself out of a market then there is good reason to have confidence in the future of the wool industry.

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