THE HUMAN ELEMENT IN FOOD PRODUCTION

By P. Fowlie

Prominence has been given in the press within the last year to statements by various persons in more or less important public positions, that in view of the rate at which the population of the Union of South Africa is increasing, the time is rapidly approaching when this country will be unable to produce sufficient food to maintain all its people in a reasonably well nourished condition.

The latest is that the Union Government has informed the Food and Agriculture Organisation of the United Nations that the Union's food consumption threatens to outstrip its food production within the next ten or twenty years. Furthermore its big consistent surpluses of food have already largely disappeared.

The question which immediately arises is, why has the Union Government felt it necessary to make such a statement? The answer cannot be that the Union is incapable of producing all the foodstuffs required for many years to come, except, of course, such as are usually imported. There are millions of acres of land that are not producing much at present which might be made highly productive. The percentage of cultivated land in the Union which is producing really satisfactory crops, is small. The present output could easily be more than doubled from the same land by adopting better farming methods. These include rotation of crops, the use of increased quantities of fertilisers, and more intelligent methods of handling live stock. The area under cultivation is also a small percentage of what would be possible to bring under the plough. Even the drier areas could be made much more productive than they are at present. What is chiefly wanted is the subdivision of the land into smaller farms and a steady increase in the number of skilful and energetic farmers. It can only be that the Government departments and officials responsible for these statements, have not confidence in the ability of our farmers to produce the food which will be required in ever increasing quantities as our population increases. In other words, it must be the human element of which these men in responsible positions are thinking, when they make such statements.

The Human Element, the farmer, is the important factor in food production. Farmers, like all other classes of the population are very greatly influenced by conditions around them, and the same applies to the natives who form the labour force on farms. Both the farmers and their native staffs wish to live more in the same style as their compatriots in other walks of life than they have been able to do in the past. A great many have left the farms for other occupations which offer greater attractions in the way of shorter hours, easier work and more regular and certain incomes.

It must be remembered that this land of ours has a very fickle climate, and it is always wise and necessary to bear this in mind when comparing the incomes of farmers with those in other walks of life. In seasons of plentiful harvests and when the farmer has had a good income from one source or another, it is necessary to make provision for the lean years that are sure to come at some unpredictable time in the future. This ought to be done both by preserving animal feed, whenever it is possible to do so, and by saving up money in the good years to be used when the unexpected calls come in bad times.

This principle of storing up surplus foodstuffs in times of plenty to feed both the human and the animal population when necessary, has been well understood throughout the ages, but the full implications of it still need to be preached to large sections of our people. It is on the application of that principle that the abundance or shortage of our food supplies ultimately depends.

Grain crops and various other plants bearing edible seeds are harvested when the seeds have ripened, then thrashed, and the seeds stored when they have been dried. These form a very large portion of our human diet and are also fed to animals. Grasses, legumes and other plants grown for animal feed ought to be harvested for hay or silage making when they are at, or just past, the flowering stage, as then they contain the greatest amount of valuable digestible nutrients. When the climate makes this possible, drying is the easiest and cheapest way of preserving this class of feed for animals, but in Natal, our moist summer climate makes hay-making difficult, and it is usually found safer and better to make silage. This entails a greater amount of work and expense, but makes very nutritious feed, which is much relished by all classes of stock when they have become used to it. Once in the silo it is safe, whilst there are always risks of hay being spoiled by wet weather during making. Various crops such as maize, napier flood and others that are too coarse in texture to make palatable hay, make excellent silage if chopped up before putting in the silo.

Besides storing hay and silage to feed farm animals in the dry season, it is possible to grow various succulent crops such as chou moulier, turnips and mangels, which can be left in the lands and fed as required during the winter. Such crops are rather risky to grow, because only in seasons when sufficient rain falls are they able to make good growth. However in many parts they are well
worth planting for the return they can give in some seasons.

These various methods of producing supplies of feeds for stock for use all the year round are now generally practised by milk producers. They realise the importance of feeding high quality bulky feeds to maintain a satisfactory milk supply without having to use excessive quantities of expensive concentrated feeds.

It has been the experience of farmers, who have adopted this intensive type of farming, in our country as well as in other older countries of the world, that more or less half of the cultivated area of the farm has to be set aside for producing feeds for winter use, and that at least a great part of this has to be cultivated, planted and weeded every year. This can only be profitable, if the soil is able to, or can be made to, produce reasonably good crops. Comparatively small areas of land in Natal can be classed as fertile, but large areas can be made productive by good cultivation practice, rotation of crops and the wise use of fertilisers.

To purchase a farm suitable for intensive farming, stock it with good animals and provide all the buildings, implements and equipment required to run it successfully, requires a very considerable amount of capital. Many farmers make the mistake when starting farming of sinking too much of their capital in land, and not leaving themselves sufficient to stock their farms and equip them properly, forgetting that a small farm, well run, can be more profitable than a larger one, if the farmer is handicapped by shortage of capital. Intensive farming with animals, where most of the farm produce is fed to the animals and afterwards returned to the land, tends to increase the fertility of the soil. The continued cultivation of a single crop like maize or wheat, which is usually sold off the farm, tends to exhaust the fertility of the soil.

The tradition of the South African farmer has been to own so much land and control so many natives that his modest needs could be met without any very great exertion on his part. With the increase in the price of land which has taken place and changes in the mode of life of our country population, this tradition has received some rude shocks. In some cases the conservative holders of many acres have been able to sell out at such substantial prices, that they have ceased to be farmers and have retired with enough money to maintain themselves and their families in comfort. In other cases they have sold only enough acres not to cause serious dislocation of the veld. Many of them are old and not fat. Even many of our farmers, who apply modern methods of intensive farming to the feeding of their dairy cows, still run beef cattle on the veld and allow them to lose condition in winter, because little or no provision has been made to give them a winter ration sufficiently nourishing to keep them in good thriving condition and gaining weight. We are all familiar with the fact that many of our European farmers and practically the whole of our native population fail in this respect, and that their neglect causes a very large number of cattle to die each year. The magnitude of that loss can only be guessed at or estimated on incomplete data, but it is certainly very great. If all the cattle reared in South Africa, except those required for trek oxen, could be fattened and sold for beef, before they were four years old, there would be quite a considerable amount of beef available for export. That does not seem likely to come about in the near future, but methods of farming are changing. Up to the present the change has been very gradual, but if sufficient inducement could be given to induce considerable numbers of energetic young farmers to take up land in the moister areas of this country, a very large increase in both crop and animal products is a distinct possibility.

This is not intended to be advice to farmers on how to run their business or anything of that sort—the farming papers are full of such advice—much of it very helpful to those who are able to sort the wheat from the chaff. It is simply written to express the faith of the writer in the ability of our country to forge ahead and become much more productive than it has ever been.

The main thing to remember is that the good land is here, and is only waiting for the right kind of farmers to come in increasing numbers to take possession of it and work up its productive capacity.

Prof. Theron said that he was one who also thought it possible that we were in for lean times in the future, when the population increased tremendously. He did not agree, however, that our difficulties would arise in respect of shortages in the human element. While that might have been true in the past it was no longer so. Farmers were much better educated and the old type of share-cropper was no longer to be found. Pessimism in regard to future supply of food is based on the fact that we had not really got much arable land. Even the statement made that 15 per cent. of our total area was arable, he thought was too optimistic. Another factor was that the very limited amount of arable land we have was rapidly being destroyed by soil erosion. He always felt that when the need was there we would be able to meet that need, but it was conceivable
that as the population in this country increases it might be very short of food, because of the lack of arable land, unless science could step in and help us. Another important factor was that we did not get sufficient young men to take up the study of the science of agriculture. In his own university he had found that the great majority of those who came forward were interested more in the practical side of agriculture and not in the theoretical or scientific side. In this way perhaps the human element might come into the picture.

Dr. Dodds said that one of the reasons for pessimism as regard to future food supplies was the wrong idea that the soil was an expendable asset which could be exhausted and abandoned and its place taken by new soil. The soil should be rather regarded as a bank wherefrom one could re-obtain what one had put into it. He thought that sugar-cane was reasonably able to maintain supplies of organic matter in the soil because of its extensive root system. However, most unfortunately (as a whole) the sugar crop in Natal was not adequately supplied with nitrogenous fertilisers. This was probably because it had not always been found possible in the past to obtain a response to nitrogen, probably because of droughts and of the wrong way in which nitrogen was formerly applied, namely at time of planting, when the plant could not utilise it.

Mr. Jex agreed that most farmers were attempting to farm too much land. If their capital was used on small areas more efficiently there would be greater production. He supported Mr. Fowlie's ideas that by more intensive cultivation we could produce much more.

Mr. Palairet had always thought that the running of cattle together with sugar farming was a good idea. It was necessary of course to import cattle, as they could not be bred on the limited land available. There were many problems in connection with this dual running of cattle and cane, but he thought that these difficulties could be overcome.

Mr. King said that he was definitely under the impression that quite a lot of land which could raise cattle was now being put to trees. In other cases farms were bought as a means of investment for money rather than with the intention of producing foodstuffs. He wondered at times if farmers should not be instructed as to what they should produce.

Mr. Du Toit said that in some way Prof. Theron had supported Mr. Fowlie, because he had shown that by adding nitrogen it was possible to increase the production from the veld, and as far as our sugar crop was concerned it was possible to increase yields by applying all the irrigation possible and by using fertilizer to its greatest advantage. The sugar industry produced about 200,000 tons of molasses a year. This, fortified by ammonia or urea, could be used to produce food instead of being used for the production of alcohol, which could be derived from other sources. Areas devoted to raise tobacco and others producing wine and spirits could well be devoted to producing foodstuffs, before it was necessary for us to starve.