Conditions and health status in KwaZulu: An overview
by
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If, due to lack of data on the conditions in the rural areas, I decided to visit some of the areas in Zululand to get first hand information. It was essentially to find out if there had been any changes in the last decade, not only in nutritional status but in water supply and general health.

As far as nutritional status is concerned to do a proper survey one would need a lot of time and abundant resources. Also, statistics on illness tend to be unreliable as the criteria for admission to a hospital on the basis of malnutrition vary from area to area and records from rural areas may be sparse. The poor, among whom malnutrition and its related conditions are most likely to be found, are the least likely segments of the population to seek medical help, and if they do seek such help, the condition may then be so far advanced that the diseases associated with malnutrition, such as infantile diarrhoea, pneumonia and pulmonary tuberculosis, may claim all the physician's attention so that he misses or ignores the underlying cause.

However I still felt that data compiled from hospital records, even in the absence of a cross-sectional survey would give us an idea of how things are going at the present time. Knowing there were X cases of protein calorie malnutrition and Y cases of tuberculosis admitted to hospital Z, the wards are absolutely full and the staff are rushed off their feet is better than not knowing at all. Secondly patients and hospital staff I talked to, all reiterated the same anxieties about the gravity of the situation.

It was slightly comforting in areas like Tugela Ferry and Emthandeni to find the situation not so alarming because breast-feeding is the normal means of infant feeding.

Valley Trust, in Bothas Hill has successfully improved nutritional status and lowered the incidence of pulmonary tuberculosis.
Water supply is the greatest problem facing people in the rural areas. Due to the current drought the situation is acute.

My thanks are due to Dr M V Gumede, the KwaZulu secretary of state for Health for allowing me to freely visit the KwaZulu hospitals and clinics and the staff of Ulundi for their help. To hospital and nursing staff who treated me with so much hospitality, sacrificed their time to talk to me many thanks. Lastly but not least friends and my dear brother for all their help, advice and ideas about how to travel to various places.
INTRODUCTION

Malnutrition is a chronic condition that affects a large proportion of the population especially in the rural areas. A person may simply not get enough food which is undernutrition or his diet may lack one or more essential nutrients, which gives rise to deficiency diseases like pellagra, scurvy and others.

In children malnutrition takes the form of deficiency of both calories and protein, and covers a spectrum of diseases referred to as protein-energy malnutrition (pem). This spectrum varies from a diet that is relatively high in calories and deficient in protein, (manifested in the syndrome known as Kwashiorcor) to one that is low in both calories and protein (manifested to marasmus).

Pellagra refers to a disease characterised by mental disturbance, diarrhoea and a dermatitis resembling flaky paint on the exposed parts of the body mainly, like the cheeks, neck, arms and legs. This is caused by a diet comprising predominantly of maize in the case of South Africans. Maize is notoriously deficient in a vitamin, nicotinamide and an imbalance in the essential amino-acids leucine and isoleucine. The disease has been reported among members of the population in one of the Indian states, whose staple is a variety of millet.

Undernourished people of all ages are very vulnerable to infection and other illnesses and recover more slowly and with much greater difficulty. Since pulmonary tuberculosis is directly related to nutritional status and poverty, it seemed appropriate to find out its incidence and reveal the findings in this report.
BABANANGO AREA

Babanango is not in KwaZulu because it is predominantly white-owned farmland. People living in Babanango either work on these farms or live there in exchange for labour. There are a lot of socio-economic problems in Babanango due to low wages and compulsory labour in exchange for accommodation. I was told that there are farmers who still pay labourers as little as R12.00 per month.

Since there are no medical facilities at Babanango the number of patients admitted to Nkandla hospital are swollen by people from Babanango. A good 75% of these patients are suffering (from Babanango).

A paediatrician at Nkandla hospital told me she was finding it very difficult to admit very ill and malnourished children from Babanango. They, as well as their parents are terrified of spending periods of time in hospital, lest they are evicted from the farms. The agreement is that at least one member of the family must provide labour to secure accommodation. If the head of the household is deceased, too ill to work or away for some reason one of the children has to work to secure accommodation; otherwise the family are evicted. The farmer just drives them out of his farm with some of their belongings.

There is a doctor who drives round the whole district holding some sort of clinic. He is a Seventh Adventist and distributes 'religious' leaflets. He is said to charge patients about R5.00 but invariably gives them a Vitamin B-Complex injection and multivitamin tablets. He does not work at weekends under any circumstances; it does not matter how ill the patient is.

The Nkandla mobile van clinic has a stopping point at Babanango. This is the only real medical facility that exists. Nkandla is the only hospital they go to. It is almost equidistant with Nqutu.

The only source of employment in the whole of Babanango is farm labour, if it can be described as employment. I spoke to a Mr X and Mr Y tuberculosis patients at Nkandla hospital. They explained that two members of the
If the child is a boy he works for six months each year. Girls sometimes work for three months. If the parents are unable to provide labour two or more children have to work. They are only given land for grazing their cattle. But they may only have so many, not more. They may build so many huts, not more. When their sons grow up and marry they still have to live with the family at large; they may not add on huts for themselves and their families.

There is milk on most farms, for butter manufacture. Labourers are only given the whey. If they ever steal the milk, they are flogged. There are no rations. Mr X even showed me old scars from flogging.

There are no schools in Babanango. The farmers say 'You think we are like your English speaking friends, we have no time to play with you people'. Mr Y told me they send their children to relations in the other 'freer' parts of Zululand in order from them to attend school. They do in-between farm work, but not many schools tolerate this periodicity. He was almost in tears as he told me he just did not know what would become of his children now that he was dying of tuberculosis. As for the girls, what work would they do without any form of education. Usually the people are grateful when the children have learnt just to read and write their names. Mr Y said he was afraid even to ask where his wife and children got the clothes they wear.

These people of Babanango have small plots for growing food, but it is usually very poor land, the author was told. When the Baas' own maize has to be harvested, the whole family have to leave their own work and go and harvest his maize.

Some people even try to bribe the 'Baas' by giving him their best cattle every so often, in exchange for civil treatment and respect.
CEZA MISSION HOSPITAL

Ceza is a fairly big hospital of some 300 beds, serving quite a wide area in Mahlabatini with a population of about 80,000 people. There are altogether three hospitals in Mahlabatini, Ceza, Nkonjeni, and St Francis.

In the children's ward they do not have many malnourished children thanks to one of the matrons, who founded the children's clinic, which is very busy and has helped a great deal to bring down the numbers of children admitted for malnutrition. The nurses monitor the children's growth and the most at risk are given skimmed milk powder and pronutro. But the stocks are so low that to give them to the mothers, they have to have the doctor's signature. Advice is also given to the mothers and they are encouraged to bring the children on a regular basis. In addition, the Ceza health ward, has a mobile unit, which visits each area once a fortnight. This, as has already been mentioned, is the case with all other KwaZulu health wards. Sister in charge of the mobile unit, told the author about this area called Msebeni, which is the busiest. It is about 3 kilometers from the hospital. Fifty percent of the attendants come from the border with Nongoma. At each visit the sisters see about 150 children. On the 14th March, 1983, they had had a record of 176 attendants, all children.

Sister told the author about the high rate of alcoholism in the Msebeni area. There are women who are said to be always drunk and leave the children on their own all day while they are out drinking.

The sister expressed concern about the limited stocks of pronutro and skimmed milk powder. During the 1980 drought, they had had a donation of some 2,000 bags of mealie meal, worth R2,400 from the National Food Distributors of Eshowe. After that, nothing came from anywhere. They feel that this year the drought is more severe and the whole district is brown and barren; people have no crops at all. There is a lot of unemployment in the area. Despite the fact that the place is arid and the soil is badly eroded there is need for agriculturalists to try and
encourage the people to use the soil and to advise them in farming methods to improve soil productivity. Sister said that at one time they had a nutrition adviser who had come from Cape Town, who had a demonstration garden and had succeeded to grow some vegetables. Sadly, after she left people stopped gardening. Sister feels very strongly that more effort should be directed towards encouraging agriculture in the Ceza area.

Tuberculosis is getting more prevalent. Sister in charge of the medical ward told the author that they transfer on average five patients to the tuberculosis hospital, Thulasizwe, each week.

Total numbers of patients admitted each year for malnutrition and nutrition related diseases:

<table>
<thead>
<tr>
<th>YEAR</th>
<th>P.E.M.</th>
<th>PELLAGRA</th>
<th>P.T.B.</th>
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<td>1980</td>
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</tr>
<tr>
<td>1982</td>
<td>87</td>
<td>9</td>
<td>176</td>
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</tbody>
</table>

**KEY:**
- P.E.M. = Protein energy malnutrition
- P.T.B. = Pulmonary tuberculosis

**Water Supply**

The only source of fresh water is the river that flows through Mahlabathini, the Ivungo river. Because of the drought the Ivungo is almost dry. The situation is so critical that the KwaZulu government has had a dam built in Mahlabathini to provide drinking water for the livestock. But most of the livestock has already been slaughtered because of the drought.
Nqutu is very arid, with a lot of boulders, leaving very little land, if any, for agriculture. The soil is red and looks very fertile, if only the boulders could be removed. It is probably due to this unfortunate fact about the geography of Nqutu that there are no industries, no farms.

The hospital superintendent, put it very nicely when he said 'You are either employed by the hospital, the bank or post office, the hotel or supermarket or you are unemployed'. The hospital is the only labour intensive establishment, the rest of the above mentioned employing at most 20 people each. This shows how much of a problem unemployment is at Nqutu. So most of the men work in Johannesburg. Charles Johnson Hospital is a fairly big training hospital now under KwaZulu. The children's ward is divided into three sections, with one section for all the children with PEM. This has 46 cots, though some of the children come in with gastroenteritis or tuberculosis or both, in which case they are admitted to one of the other sections first and later transferred to the PEM section.

Nqutu has one of the highest incidences of PEM. The death rate is high because a lot of the children come in the late stages of the illness. Sister attributes it to poverty, migrant labour, apathy and ignorance. Nqutu, like other KwaZulu health wards has a mobile clinic once fortnightly. There are six residential clinics. Sister Khunalo, one of the mobile clinic sisters, feels that there is so much malnutrition in the health ward that the cases they see at the clinic or at the hospital are the tip of the iceberg. They give advice on nutrition but they feel that the problem is very complex due to poverty, illegitimacy, unemployment and migrant labour. Sister told me the story of a child of six, who looks three years old, who has been admitted to hospital three times. The child lives with the Grandmother, who gets her pension every second month; the mother is now married to another man, who does not want this child.
Another contributory factor to the causation of malnutrition is the number of people fleeing the Msinga area which has been plagued by faction fights for a long time. This has caused a lot of social disruption.

Pellagra is also very common, patients admitted with vague ailments and mental confusion are diagnosed as pellagra. Tuberculosis is also definitely on the increase. Sister on the tuberculosis ward, which had a total of 54 patients, said there was a high number of reactivated cases. This is due to bad nutrition as well as overcrowding.

### Total Numbers of Patients Admitted Each Year With Malnutrition and Nutrition-Related Diseases

<table>
<thead>
<tr>
<th>Figures</th>
<th>Pem</th>
<th>Pellagra</th>
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<td>1981</td>
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<td>41</td>
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</tr>
<tr>
<td>1982</td>
<td>466</td>
<td>46</td>
<td>154</td>
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</tbody>
</table>

The death rate from malnutrition on the average was about 20%. In 1981 according to the hospital records a total of 2084 children were admitted to Charles Johnson Hospital. A total of 416 children died. Of those 268 were malnourished.
Therefore total of 2084 admissions in 1982
  total deaths for the year 416
  deaths of PEM 200
  i.e. 20% of all children admitted died
  64% of all deaths were attributed to malnutrition.

As already mentioned this does not include all deaths at home, but gives
an indication of the gravity of the situation.

Water Supply

Most of the people I spoke to were quite satisfied with the provision of
fresh water in Nqutu. There are boreholes at strategic places constructed
by the KwaZulu Government. In some areas there are communal tanks that
are filled by the government. One lady said that it is only lately, because
of the drought that queues build up. She felt that there could be more
tanks.

ESHOWE

Eshowe Provincial Hospital is situated about 2 km. to the west of Eshowe
town. It is still under the Natal Provincial Administration (NPA).

The town and the sugar cane farms immediately around are all wet and green.
A few more kilometres out of Eshowe the area is very dry. Most of the
people around are very poor, subsisting on very little land to grow crops
like maize, sweet potatoes, mudumbe and pumpkins.

Men work on the neighbouring farms; shops in the Eshowe town itself, while
the women work at home.

Nutritional Status

The situation is critical at Eshowe. The paediatric ward has 60 cots and
22 cribs. On the day of the visit they had 210 children in the ward.
The paediatrician, said they were so busy that they have no time to take anthropometric measurements and work out the degree of malnutrition. Most of the children seen were exhibiting the classical signs and symptoms - oedema, inelastic skin, an enlarged abdomen with thin legs and anaemia.

The doctor said the situation had been worsening for a long time. On the day of the author's visit there were 8 admissions. The situation is made worse, by the large number of children who are discharged but the parents do not come to fetch them. The hospital now sends them home with a nurse by ambulance, to make room for new arrivals.

Nurses told me of pathetic sights of starving children in the rural areas. They simply said 'if only you could just go to the rural areas, to their homes and see the degree of poverty there'. They took one child home and the mother did not want to take him! He was an extra mouth to feed.

The nurses say the other children were eating bowlfuls of plain phutu. I was also told of the older children who were not keen to go home once they had been in hospital. I was told that one child was sent home a couple of months previously, returned with his twin brother a couple of days ago. One of them had died that same morning of my visit.

Speaking to mothers staying at the hospital, some said they ate meat once a week on Sundays. Others said they ate it once in a while when they have slaughtered at home. They said they found they could not afford canned fish either. The smallest tin in the rural areas costs 50c as compared to 33c - 35c in urban areas in supermarkets.

Pulmonary tuberculosis, according to sister, is less prevalent than before. They transfer the tuberculosis patients to either Mhongolwane or Catherine Both hospitals as soon as they are notified.

Pellagra is now said to be a disease of the elderly as well as alcoholics. Nurses say alcoholism seems to go hand in hand, some patients being diagnosed as malnutritional and alcoholism.
The figures for PEM represent only the tip of the iceberg, more so because they do not include children who come to outpatients very ill and are sent home with advice and treatment. The children's ward often has no room to admit any more.

Eshowe has no mobile clinic system. People who cannot afford the bus fare and the energy to come to hospital simply stay at home and die. For every very malnourished child in hospital there are two more from the same family at home.

**Water Supply**

Of the border mothers I spoke to in the children's ward, only one said she had access to windmill water. The other fourteen said they had to fetch water from the rivers and springs. Two lived at the location at KwaMondi where there is fresh piped water.

**KWA MACWAZA**

This hospital is situated about 5 km from Melmoth and trains pupil nurses. The hospital itself is surrounded by sugar-cane plantations. Since the area is rural farming area most of the people work in the sugar-cane farms, earning very little. Some work in the sugar mill at Ntumeni.
Nutritional Status

The children's ward has altogether 78 beds. Total number of patients at the time of the visit was 67, with fourteen children with PEM. Sister in charge of the children's ward said she had never seen such bad kwashiorkor before coming to Kwa Magwaza from Baragwanath. She feels the situation is getting worse with the drought.

Pulmonary tuberculosis is common. The tuberculosis ward has 70 beds. Patients come from the male and female wards as well as from Eshowe hospital. The demand for beds for TB patients is so high they have had to put extra mattresses in the ward. In 1982 the number of patients who were diagnosed as tuberculotic was 208.

Pellagra cases are mainly due to drinking. Some just come in with vague confusion and improve with vitamin treatment. However sister says there are a lot of patients coming from an area called Kwabiyela. These are not always associated with alcohol consumption. Kwabiyela is very poor and very dry with a grave shortage of clean water. Apart from pellagra and PEM in Kwabiyela they get a lot of gastro-enteritis, typhoid fever.

Total Number of Patients admitted each year for Malnutrition and Nutrition-Related Diseases

<table>
<thead>
<tr>
<th>Year</th>
<th>PEM</th>
<th>PELLAGRA</th>
<th>PULMONARY TB</th>
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<td>258</td>
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<tr>
<td>1982</td>
<td>83</td>
<td>22</td>
<td>311</td>
</tr>
</tbody>
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MADADENI

This semi-urban black settlement is about 9km out of Newcastle. It lies close to white owned farms. The hospital, Emadadeni, is big with psychiatric, general and tuberculosis wards. There are two children's wards, each with a capacity for 40 patients.
Nutritional Status

There is quite a big rise in the number of children with PEM in the 0 - 2 year age group. Sister in charge of the children's ward, thinks the numbers are rising very fast; they have 40 beds and a total of 64 children. Sometimes they have up to 100 children.

Pulmonary TB is also very prevalent. The hospital has 4, 24-bed TB wards. Overcrowding and poverty are contributory factors.

Pellagra is not so common, though the situation is confused. Since there is a big psychiatric hospital on the premises, very mentally confused patients with pellagra are admitted to the psychiatric hospital.

Most of the patients with PEM and pulmonary tuberculosis, come from Blaubosch, a squatter area about 4 km from Madadeni. People living in the area came from a number of places like Charleston, now a white area. Some are farm labourers who were made redundant and lost their accommodation on the farm. Also, due to unemployment these people were forced to come to Blaubosch to seek employment in Newcastle.

People were also moved from Volkrust to make way for the extension of whites' farms. They had been given location houses, which they found too small. They had their cattle and wished to continue their lifestyle. People who live in rural areas tend not to take too easily to location life.

With so many people from so many places coming to build their own shacks Blaubosch became very overcrowded. Firstly, there are no employment facilities for so many people. Secondly there is no land available to these people so that they can grow their own food. A lot of the people do not have permits for residing in the area, so, even if they are employed it is casual labour. Nurses told the author that poverty and malnutrition are rife. Overcrowding contributes greatly to the causation of tuberculosis.

Water supply is one of the biggest problems in Blaubosch. One of the sisters at the clinic helped the residents to get water by sinking a borehole but one borehole is only a drop in the ocean.
Total Numbers of Patients admitted each year for Malnutrition

<table>
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<th>Year</th>
<th>PEM</th>
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<tbody>
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<td>158</td>
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<td>1981</td>
<td>135</td>
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<td>1982</td>
<td>163</td>
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MAPUMULO HOSPITAL

This hospital is about 45 km north west of Stanger. It used to be a mission hospital but it is now under KwaZulu. The whole of the Mapumulo area is very rural, surrounded only by sugar-cane farms. The latter are the only source of employment.

The hospital itself is very small, with about 150 beds. The matron, says the incidence of child malnutrition has improved since the hospital has been under KwaZulu with the mobile van clinics with several stopping points. The staff follow up cases, to monitor their progress and give advice.

This year, however, matron feels the numbers of children with PEM is up. She blames it all on the failure of the crops due to the drought as well as to illegitimacy. Teenage pregnancy rate has reached a new peak. The mothers leave the babies with the grandmothers and either go back to school or go to the cities to seek employment. The granny has to feed the child from her own meagre pension.

Alcoholism is also rife among men as well as among women. They are spending an awful lot of money on alcohol at the expense of food for the whole family. The children's ward has 28 cots and the total current number of inpatients is 21. Eight children are admitted with PEM. This accounts for 38% of all admissions.

Sister says that the clinic attendance rate is very high. The mothers get advice and nutrition education at the clinic. The interesting point is that there seems to be a peak in kwashiorkor admissions in the winter months May to August. This peak coincides with the drought and the consequent absence of fresh garden produce as well as high food prices.
Tuberculosis seems very common in this part as it is everywhere else. Pellagra figures are very low:

<table>
<thead>
<tr>
<th>Year</th>
<th>PEM</th>
<th>PELLAGRA</th>
<th>PULMONARY TUBERCULOSIS</th>
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<tr>
<td>1982</td>
<td>62</td>
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</tbody>
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Death rate for 1982 was 18%

**MTHANDENI CLINIC**

Mthandeni Clinic is a rural village about 15 km from Umpumulo and about 10 km from Glendale. The clinic has two nurses and is under the administration of KwaZulu Government and serves the whole population of Mthandeni of about 5000. Cases that need hospitalisation go to Umpumulo hospital and are transferred to Stanger hospital if expert medical attention is required.

The land is fairly poor, however people do produce some mealies, sweet potatoes, pumpkin, madumbes and beans. This year, because of the drought people have nothing in their gardens. People work in places like Stanger and the Glendale sugar mill. There is therefore very little social disruption at Mthandeni, which probably accounts for the fact that malnutrition is rarer. People still breastfeed. Sister told me they saw perhaps one case of kwashiorkor in three months.

Tuberculosis is common, with 35 cases currently on treatment, while pellagra is also common and associated with alcoholism. A lot of heavy drinking is reported.
Water Supply

Umvoti river flows through the area, but it had completely dried up when I visited the area in March. During the 1980-81 drought the KwaZulu government made several boreholes here and there to help the people. But as far as I was told, there were only three of these throughout Mthandeni about 2 km apart. People who are rather far from these water taps are forced to resort to streams, but this water is very very dirty. For this reason the nurses say there is a lot of gastro-enteritis. Even the people who are able to fetch water from the boreholes have to walk fairly long distances. The efforts of the KwaZulu government ought to be applauded.
MBONGOLWANE HOSPITAL, NTUMENI

This is a small mission hospital about 47 km from Eshowe. It has 176 beds and trains pupil nurses. The Eshowe area seems to have had adequate rainfall lately. However, turning off the road to Nkandla one saw very dry vegetation and stunted mealie plants without any fruit. Around the hospital itself, about 3 km² there were very healthy looking madumbes and mealies. The white owned sugar-cane plantations are very green, which shows that the area has not been badly affected by the drought.

People have problems about water supply. The ones who are lucky enough to live near the hospital, fetch water from there. Those who live right out, use springs and the water is very muddy.

Most of the men in the Mbongolwane area work in Johannesburg in the mines. There is the Ntumeni sugar mill and the sugar-cane farms that absorb the rest of the menfolk. Women who have small plots tend to grow mealies, sweet potatoes and madumbes, the usual high energy, high yield crops. Protein and fat have to come from the shops.

Nutritional Status

In outpatients nurses say they see a lot of malnutrition in children especially in the winter. However they do not think the situation is worsening. The hospital has no accurate records - and so actual figures could not be obtained. Sister in charge of the children's ward says they only admit about one case of PEM per month. They send milder cases with P.V.M. Since the children's ward is small and crowded they keep the numbers of admissions low. Pulmonary tuberculosis seems to be commoner than severe PCM. Sister says they seem to readmit the same patients, once they go home their physical condition seems to get worse. Counting the numbers in the current admission book the average number of TB cases is 120 per year. A third of these are re-activated cases. The tuberculosis ward has 53 patients including 18 children. Patients come from the hospital's male and female wards as well as transfers from Eshowe hospital. Sister says there is a definite sharp rise in the incidence of pulmonary tuberculosis.
Pellagra - Sister says there is very little pellagra at Mbongolwane. They admit between 10 and 12 cases per year, usually associated with alcohol abuse. Here they report a sharp rise in alcoholism, even among women.

Total admissions in 1982

- Pellagra: 12
- Pulmonary tuberculosis: 116
- PCM: 72

Total number of deaths:

- From PCM: 18
- Total number of deaths: 28
- Deaths from PEM: 64% of all deaths
- " " " 25% of all admissions.

NGWELEZANE HOSPITAL AND THE NGWELEZANE HEALTH WARD

Ngwelezane, a fairly big training hospital is situated in Ngwelezane location some 6 km from Empangeni. Like all KwaZulu hospitals it heads the Ngwelezane Health Ward, comprising of nine established clinics and a mobile van clinic system with 21 stopping points. The matron, told me the mobile van clinic system has contributed greatly in reducing the incidence of child malnutrition.

Each established clinic has its full nursing staff as well as medical staff. The mobile van clinic points are visited weekly or fortnightly. Education is given, especially in recognising the signs of malnutrition and discouraging the use of izinyanga, who charge so much money. The children’s progress is monitored and the mothers are encouraged to bring the children regularly. Defaulters are traced.
Because clinic visits are frequent the people get to know the nurses well and feel free to tell them all their personal problems. The nurses advise them on a semi-intimate basis.

**Figures for the years 1979 - 1982**

<table>
<thead>
<tr>
<th>Year</th>
<th>PEM</th>
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<td>1343</td>
</tr>
<tr>
<td>1982</td>
<td>168</td>
<td>411</td>
</tr>
</tbody>
</table>

**Pellagra** is not very common, with only about 20 cases a year. There is always a history of alcoholism. **TB** is rife and numbers seem to be always going up. In 1982 there were 16 cases of pellagra but over 400 cases of pulmonary tuberculosis.

**LIST OF MOBILE VAN CLINIC POINTS**

<table>
<thead>
<tr>
<th>DISTANCE FROM NGWELEZANE HOSPITAL</th>
<th>ESTABLISHED CLINICS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Somopho</td>
<td>Ngweli Township</td>
</tr>
<tr>
<td>2. Obizo</td>
<td>Thokozani Estate</td>
</tr>
<tr>
<td>3. Ocilwane</td>
<td>Phaphamami</td>
</tr>
<tr>
<td>4. Efuyeni</td>
<td>Nomponjwana</td>
</tr>
<tr>
<td>5. Makwezini</td>
<td>Nkwenkwe</td>
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<tr>
<td>6. Ntuthunga</td>
<td>Nseleni</td>
</tr>
<tr>
<td>7. Ndundulu</td>
<td>Dondotha</td>
</tr>
<tr>
<td>8. Green Store</td>
<td>Vulindlela</td>
</tr>
<tr>
<td>9. Umhlatuze Valley Store</td>
<td>Ntambanana</td>
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<tr>
<td>10. Powell Store</td>
<td></td>
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<tr>
<td>11. Manzamnyama</td>
<td></td>
</tr>
<tr>
<td>12. Dondotha</td>
<td></td>
</tr>
<tr>
<td>13. Shwashweni</td>
<td></td>
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<tr>
<td>14. Nkanyezi</td>
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<tr>
<td>15. Bangoyana</td>
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<tr>
<td>16. Velabandla</td>
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<tr>
<td>17. Mabuyeni</td>
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<tr>
<td>18. Sibululwane</td>
<td></td>
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<tr>
<td>19. Upper Nseleni</td>
<td></td>
</tr>
<tr>
<td>20. Mabe</td>
<td></td>
</tr>
<tr>
<td>21. Ndlovini</td>
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</tbody>
</table>
The paediatrician, Dr du Plessis, has done a lot of work establishing the primary health care unit. He feels that at least 80% of the children admitted, whatever their diagnosis, are malnourished. The sister who runs this unit says they are always very busy. There were at the time three babies being intravenously rehydrated. Sister says the primary health care was established 2 years ago and did reduce the numbers of admissions as well as the incidence of kwashiorkor. Lately, numbers of kwashiorkor cases seem to be going up again. This is attributed to the drought as well as shortage of fresh water. Unemployment is another contributory factor. Most of the children are from the rural areas - Nseleni, Manguzi etc. where people have absolutely nothing to eat.

Nutrition and hygiene education are given and the children are sent home wherever possible. The hospital has a garden run by the nutrition educator. Even border mothers are encouraged to help with gardening. Before the present drought took its toll, the incidence of severe malnutrition was getting less. Rising food prices are also blamed for the rising incidence of malnutrition.

The paediatrician feels very strongly that people have got to be encouraged to help themselves, to do gardening. Clinics should be encouraged to take an active part and seeds should be provided either at a minimum cost or be given free of charge initially as people often complain that they cannot afford seeds.

Agriculture and soil science should also be encouraged in schools. The paediatrician feels as there is a high drop-out rate and the school leavers, in the absence of good employment prospects are unable to make ends meet. Agriculture should be a tool that is made available to them and should be made a priority in schools.
EKUPHUMULENI

At Nqwelezane hospital there were three children in a stretcher. They were very ill, one was in a collapsed state. The nurse who was with them told me they were from Ekuphumuleni, near Eshowe, a very very poor area. She said the area was badly stricken by the drought and there were no crops this year. Fresh water supply was also short and unemployment was rife; consequently there was a lot of severe protein calorie malnutrition.
NKANDLA

Nkandla hospital is now under KwaZulu but it is run by Catholic sisters, since it used to be a mission hospital. It has 202 registereds beds, but is now so busy that it has altogether 366 beds. It trains pupil nurses. The other hospital in the Nkandla district is Ekombe, about 38 km away, much smaller and less busy.

Since Babanango has no medical facilities, a lot of the patients come from Babanango.

Nkandla is very rural with no job opportunities whatsoever. Most of the men work either in Durban or in the Transvaal as migrant labourers, sending either very little or no money home.

Like everywhere else, there is a lot of illegitimacy - not only among young girls but among older women as well. Many women leave their young children with their old mothers and go to the cities to seek employment. The granny, who used to breast-feed her own children, does not know what to do. Since the daughters work so far away and do not send any money the granny is forced to use her own meagre pension to buy the formula. She makes the feed very dilute to try and stretch the tin.

Nkandla hospital has 200 childrens beds. They have a cubicle for kwashiorkor children with 30 beds. When I visited they had 25 children with kwashiorkor. The paediatrician showed me one child, about 2 years old, who was looked after by her older brothers and sisters while the mother was away working. The husband, working in Johannesburg, used to send her R40 every 2 months to support four children.

The number of 25 is for children with kwashiorkor and excludes the ones with gastro-enteritis, measles or tuberculosis.
Though they had 38 patients in the tuberculosis ward they are convinced they are winning the battle against TB. The mobile van clinic tracks down all TB cases. They visit each point about once a fortnight, just like in the Nqwelezana and Mbonogolwane health wards. One of the doctors however thinks that because of the drought TB is becoming more prevalent again.

Pellagra is less common. Patients come from both Babanango and Nkandla areas.

<table>
<thead>
<tr>
<th>Year</th>
<th>PEM</th>
<th>Pellagra</th>
<th>P.T.B.</th>
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<tbody>
<tr>
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<td>-</td>
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</tr>
<tr>
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<td>18</td>
<td>23</td>
</tr>
<tr>
<td>1982</td>
<td>202</td>
<td>23</td>
<td>31</td>
</tr>
</tbody>
</table>

It must be stressed that these numbers of patients who were treated as inpatients and does not include patients who were treated at the mobile van clinics. The numbers otherwise would be much higher.

The paediatrician feels that something has got to be done to create employment for the people to keep families together. She blames lack of employment facilities in the area and migrant labour for the high incidence of PEM in Nkandla. She feels very strongly that wages should be increased; people simply cannot make ends meet on what they earn.

The situation in Nkandla would be a lot worse if they did not have the mobile van clinics. They give families with children at the visit some pronutro and powdered milk. These the sisters get with the money they get from overseas sources.

The nurses also try to encourage the mothers of these malnourished children to talk about their problems. They then refer them to the social workers who help with pensions, etc. when they can. As far as the men in the
cities are concerned, the social workers have even solicited the help of the employers, without success.

NKONJENI

Nkonjeni is situated about 20 km from Ulundi, in the Mahlabathini district. The whole area is dry and arid except just about 2 km² where the hospital is situated, where the vegetation is green. The people have also been able to grow mealies and madumbes. The hospital is small, with 200 beds and trains pupil nurses. Nurses say there are quite a lot of PEM cases mostly from an area called Kokhukho and another area called Elomo. Both are in the Mahlabathini district. These two areas are populated by people from the Msinga area, who flee from faction fights. Most of the men work in Johannesburg. Sadly they continue fighting even at Kokhukho and Elomo.

Sister in charge of the children's ward, is convinced there is an increase in malnutrition. She herself came to Nkanjeni from King Edward hospital and she thinks the situation is a lot worse than in Durban.

Pellagra is also very common and is predisposed to by poverty and alcohol abuse. The situation is confused because there is a high incidence of tuberculosis as well. Some patients come in with tuberculosis and mental confusion, diarrhoea and found to be tuberculotic and pellagrous. Some come with mental confusion of unknown origin and the mental state improves with vitamin treatment and good hospital diet.

Figures of patients diagnosed as pellagarous on admission for each year

<table>
<thead>
<tr>
<th>Year</th>
<th>Pellagra</th>
<th>PEM</th>
<th>P.T.B.</th>
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</thead>
<tbody>
<tr>
<td>1979</td>
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<tr>
<td>1982</td>
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</tbody>
</table>

For 1983 the ward records show that the number of patients admitted between January and March is 36. The total number of children admitted with PEM is 23. This shows an increase on the 1982 figures. Sister is
convinced that the death rate is going to be even higher in the winter, when there is not fresh produce and prices in the shops are higher.

STANGER HOSPITAL

Stanger hospital, under the Natal Provincial Administration, serves a wide area in the Lower Tugela district. The hospital was founded by the Stanger Asian community in the mid-1940s and is now one of the busiest hospitals in Natal, with a very high turnover of patients.

Due to the increase in the numbers of children with gastro-enteritis and malnutrition the hospital now has a separate paediatric outpatient department where it is easier to examine and treat children properly. In the main outpatient department there are a lot of cases with cholera being intravenously infused. The Lower Tugela district also has a very high crime rate which means that the out-patient department gets very crowded and the children cannot be well looked after.

In the paediatric out-patient department there is a sister trained in the nursing of sick children. The nurses work hand in hand with the paediatrician, they examine the children, take specimens and put up intravenous infusions on dehydrated children. If the children can go home after intravenous infusion they do so. This lowers the numbers of admissions to the children's ward, which is already so busy. The mothers are given nutrition and health education.

Today, the 5th April 1983, there were altogether 210 children attending at the outpatient clinic. Only 6 were admitted, some stayed overnight to continue intravenous infusions and the rest were sent home after treatment.

Nurses told me there is a lot more pellagra than 10 years ago in this district. One sister said 90% are attributable to alcoholism and most come from the squatter areas of Groutville Estate near Shakaskraal and Glendale. In these areas people are given small plots to put up shacks and have no access to agricultural land. There is a soaring crime rate and a lot of overcrowding in these areas. Alcoholism is rife even among women.
Looking at the admissions books one is struck by the number of patients admitted with delirium tremens.

<table>
<thead>
<tr>
<th>Year</th>
<th>Pellagra</th>
<th>PEM</th>
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</tr>
<tr>
<td>1982</td>
<td>93</td>
<td>223</td>
<td>341</td>
</tr>
</tbody>
</table>

Pulmonary tuberculosis figures are also very high. Here the situation is made worse by alcoholism. Once the patients are discharged from hospital they drink a lot and eat less.

In 1982 total number of admissions = 2040
Admissions with PEM only = 223
PEM admissions 11%

TUGELA FERRY

Approaching this part of Natal from Mapumulo, one passes through mainly white farms and SAPPI forests. The greenness is quite striking in the middle of a severe drought. It had however rained the night before for the first time after a long time. The rain had been so heavy that there were rocks at the side of the road that had been brought down by the rain.

From Greytown to Tugela Ferry the geography changes drastically as the whole area gets dry and rocky and the vegetation becomes mainly xerophytes. The scenery is beautiful as the road winds through the terribly mountainous area. You enjoy the beauty more if you do not live there and it does not occur to you that there are people living there who have to eat and drink water and have no better area to go to. The place is very arid and the drought has been severe. In some areas along the road one sees only cacti and rocks, and often a homestead or a group of homesteads amidst boulders without any vegetation around. What on earth do the people eat?
But there were quite a few goats along the road browsing on the few leaves on the few thorny bushes. We gave a lift to a lady taking a sick child to the hospital and she told us that people do clear the rocks and grow mainly cereals, maize and wheat. However she said that it was very hard work and this year, because of the severe drought they had not grown anything at all.

There is very little if any employment in Tugela Ferry. At Keatsdrift, a tiny village about 12 km from Tugela there is Bata shoe factory which employs a few people. The rest of the people work in Johannesburg. We picked up a man going back to Greytown after his weekend at home. He works on a farm as a herd man. He told the author how critical the water situation was in the area; his wife can only go and fetch one bucketful per day as it is so far. If she goes twice, she cannot do anything else.

The Tugela Ferry Health Ward

Like all KwaZulu health wards Tugela Ferry has a mobile van clinic with several Stopping points. Each area is visited weekly. Due to uncertainty about safety, we did not want to drive back too late when it would be dark. Therefore there was no time to take down figures of patients admitted each year for malnutrition and related diseases. Suffice it to say that the sister in charge of the children's ward told the author the situation was not as bad as could be expected. The mothers at Tugela Ferry are traditionalists and think breastfeeding the normal and natural method of rearing their young. The incidence of protein energy malnutrition is fairly low. This was confirmed by the hospital superintendent. The ward has a total of 39 paediatric beds. Eight of these beds are reserved for children suffering from malnutrition. Then the ward had a total of 43 children and 8 children with frank malnutrition. Sister said that numbers did not normally go beyond 8. The situation did not seem to be worsened by the drought either. This emphasises the importance of breast milk. Tugela Ferry is very poor and very dry. However, it is a well known fact that poor women are remarkably able to breast-feed their infants for long periods. The supply of milk is maintained even if the mother's diet is inadequate. Two of the children were very young and had the mothers staying with them at the hospital. When asked, they did admit that they had not breast-fed.
Pellagra tends to be intertwined with other conditions like pulmonary tuberculosis. There were altogether five patients with pellagra and three had tuberculosis as well.

The hospital has about 200 beds and it said to be very busy since it serves the whole area up to Msinga, which has been plagued with faction fights for decades. One of the sisters in the out-patient department told the author that sometimes the hospital is so busy that some of the patients have to sleep on the floor.

Choléra in this area was said to be very common, attributed to inadequate water supply and the low standard of hygiene.

Water Supply

There are boreholes made by the KwaZulu government to ease the water shortage in Tugela Ferry. People are too poor to afford water tanks. There are taps close to the road for the benefit of people living on both sides. However the place needs more boreholes as there are people who live very far and the place is so hilly.

ESIKAWINI

This area is about 2 km from Empangini where the residents are mainly peasants and migrant labourers. The soil is very fertile and there is plenty of fresh produce, crops grow most after mealies being sweet potatoes, madumbes, ground nuts. Bananas and avocados are also plentiful. Even though there has been a drought there seems to be enough food in this community. Every homestead visited had on average five head of cattle and enough maas.

Clean water supply is a problem at Esikawini. At the time of my visit, on the 3rd March 1983, the situation was beginning to be quite desperate. None of the homesteads can afford tanks and they fetch water from springs in the areas. The water is very muddy because it is getting very low for humans as well as livestock. They fetch the water and have to let it stand for 24 hours before using it.
The alternative is ever-flowing water from a pipe just outside the location, on the eastern side. People fetch water and do their washing there. This pipe is far from the rural village, the nearest resident to it being about 1 km. Some of the residents who know people living in the location fetch water from there. It is just as far.
Esikawini Creche

This big creche was built by local government three years ago. The latter still maintain it. There are four members of staff, two teachers, one cook and a cleaner.

The creche has a capacity of 70 and at the time of my visit they had over 70 children with ages ranging from 18 months to 5 years. For each child the parents pay R8,00. There is a vehicle that collects the children at about 7.30am and they stay till 4pm.

Richard's Bay Minerals, a firm at Richard's Bay donates food worth R100,00 twice a month. They are the sole donors, apart from a fresh produce dealer who donates fruit every week. Meals - Breakfast: they have porridge with milk - Elevenses: cordial drinks. - Lunch: varied, with maas twice a week, rice and stew twice a week, bread and soup once a week.

The creche needs furniture, toys and posters. A few children are malnourished. At the time of my visit there were five malnourished, two with signs of kwashiorkor. Mrs A who runs the creche says that malnourished children come from either very large families or where mothers go out to work leaving the children with unsuitable nannies. One nanny used to lock two small children up all day while she went to drink with her friends. She would come back just in time for the childrens' mother to return home from work.

Esikawini location is equidistant between Empageni and Richard's Bay. With job opportunities in both towns and sprouting industries at Richard' Bay there is a constant influx of people into Eskawini from the rural areas, hence some malnourished children at the creche.

UMVOTI MISSION RESERVE

This area is about 6 km from Stanger and has a population now crudely estimated at about 9 1/4 of a million. There are sugar cane fields belonging to some of the residents of Grouhille. Outside the reserve there are cane fields belonging to white and Indian farmers.
There has been a great influx of people from other places to Umvoti Reserve thus adding to the reserve's own population. The whole of the Lower Tugela is a sugar cane belt and therefore offers employment to a lot of people who escape unemployment in their own areas. Apart from the sugar industry there are a lot of trading towns along the belt, which also provide employment.

The Umvoti Reserve is the only African residential area between Tongaat and Tugela. The Umvoti land owners have taken advantage of this fact and encouraged squatting. Each shack owner pays rent of at least R7.00 per month. This sum is high, but the people have very few choices open to them. The whole area has become a squatter belt. This had led to a lot of overcrowding, and there are a lot of health problems associated with this and shortage of water as well as lack of adequate sanitation. Suffice it to add that the crime rate is soaring.

Stanger hospital is some 7 km away. In the reserve there is a clinic which serves the whole area up to Tinley Manor in the south. The clinic was built in the early 1950s and has grown, thanks to donations from the local cane farmers. Notable of these is a Mr Stewart of New Guelderland, who also donated large amounts of skimmed milk and pronutro as from 1970. The two commodities used to be sold at a minimum cost of 10c for 500g for skimmed milk powder and 25c for the same amount of pronutro and it was given free to high risk children.

Water Supply

Some of the people have their own water tanks into which they collect rain water. However the rest of the population including the squatters cannot afford tanks and fresh water is one single greatest problem. The Department of Co-operation and Development has provided communal water trucks which were increased to three in number a year ago. Each truck has a capacity of 10 000 gallons, to transport water from the sugar mill and fill family tanks at a charge of R1.50. The Department maintains the trucks, supplies the petrol and pays the drivers.
There are also communal tanks at strategic points throughout the reserve and more in the squatter dense areas. These are filled by the same trucks and residents get water at a minimum charge of 1c per bucket. A family of 5 can easily spend about 5c per day on water. However this idea of communal tanks was a marvellous one since water tanks now cost over R200. Owing to the drought the tanks have been drying up and the queues have been very long. Too many people, too few tanks.

Umvoti Reserve Creche

A creche was built just over a year ago in the reserve with funds from: Barclays National Bank, Urban Foundation, the Rotary Club. The creche has a capacity for 44 children. At the time of my visit they had 43 children, who arrive between 8am and 9am and stay till 4pm. There is a charge of R10.00 per month which is used for buying food. There are five members of staff including three teachers who are paid by the Department of Co-operation and Development.
THE VALLEY TRUST

The Valley Trust in the Valley of a Thousand Hills, near Botha's Hill, was also visited to find out what progress they have made in the last couple of years in their fight to improve nutritional status of the valley communities. Their efforts are applauded at every corner of the country as they have realised that malnutrition arises as a result of a multiplicity of social, economic and environmental factors. As a result their approach is a broadly-based programme engulfing:

(i) Primary health care - where at the strategically situated medical clinic emphasis is laid on domiciliary care and hospitalisation is discouraged whenever possible. Patients' interests in nutrition are aroused so that they are conditioned to benefit from the nutritional and agricultural services provided.

(ii) Gardens - domestic vegetable gardens have been developed as a necessity for health and not primarily for subsistence. Demonstration of the environmental potential for food production using organic waste matter to promote soil fertility and avoiding the use of costly fertilisers and other technologies.

(iii) Their policy is involving the people and encouraging their participation. As a result general health care has also improved. The members of the community deal with their ailments and volunteers from the community are involved in first aid, diagnosis of infections etc.

As for nutritional status there has been a great improvement over the past 14 years. According to the Valley Trust annual report for 1981 there has also been a marked decline in the number of cases of tuberculosis cases attending the clinic over the past 16 years. Studies indicate that the average weight of infants and children 0 to 5 years attending the clinic has increased significantly. Last but not least is the beneficial change in attitudes of the people and their nutritional standards, as shown by the increase in the number of mothers attending the Well Baby clinic to ensure their infants are correctly fed.

All these improvements have co-incided with major changes in the physical environment. Also there are protected water holes, conservation ponds, fish dams, private as well as communal gardens.
Total Attendances at Botha's Hill Main Centre including Sub-centres
Mushroom Poisoning

When I looken through the admissions books of hospitals in Zululand, I came across a lot of cases of mushroom poisoning. At Stanger, Kwa-Magwaza, Nkonyeni and Umphumulo hospitals, the numbers were quite high, at least 10 per year. This is new, my initial reaction was that the high incidence of mushroom poisoning was due to shortage of food in the rural areas and high food prices. So that people were eating the toxic species of mushrooms. Now that food is so expensive mushrooms would provide a meal for a whole family.

At Nkonyeni and Stanger hospitals there were cases of mushroom as well as Mfino poisoning on record. Poor people eat more wild Mfino as a source of protein. It could be said that it is their main source of protein, eaten with phuthu at least three times a week. Sister in charge of the male medical ward at Stanger hospital explained to me that the poisoning results from the chemicals in the form of weed killers and insecticides that farmers use in their cane fields. In 1980 the people had been warned against picking Mfino or mushrooms that grow in-between the cane rows as well as too close to the cane. Hunger, however, compels them because they have no alternative. Numbers have risen since 1980.

At Nkandla hospital the numbers were even higher, with as many as 25 counted in the children’s admission book for 1981 and 23 in 1983. Nkandla is near Babanango, and the latter is predominantly farm. Sisters explanation seems right especially if one considers that Babanango has no hospital. Patients either have to come to Nkandla hospital or to the mobile clinic van provided by Nkandla hospital.

What is not known is whether some of these chemicals are either carcinogens or have carcinogenic properties. Studies in animals have also shown that dietary factors play an important role in the elimination of drugs by the liver. One of these factors is protein in the diet. When the protein intake is limiting for growth it is also limiting for drug metabolizing enzyme activity in the liver.

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1. Mfino refers to wild herbs like pigweed and blackjack. These are fried and eaten with phuthu. They are valuable source of protein and are not poisonous.
Death of the Physical Environment

Driving through the Mahlabathini district between Ulundi and Ceza, and across the Umfolozi river on the way to Vryheid quite a large percentage of farmland is eroded. The deep scars of injury are huge dongas several metres in depth as well as in width. These are the results of overgrazing and general over-stripping of the environment. Zulus regard livestock as their sole wealth, and rightly so too, in the absence of employment opportunities in Kululand.

The whole landscape is nothing but brown bare hills, the browning accentuated by large boulders which punctuate the rocks soil every so many square metres. Nothing grows there except for little thorny xerophilic shrubs. On the way to Vryheid from Ulundi up to Utrecht the only vegetation one sees are giant cacti for many kilometres. Nothing else grows.
In Zululand in the absence of any other form of fuel, there is an ever increasing demand for wood as fuel as in other parts of the world (Ehrlich, 1976). Over half of the trees cut down are used for fuel, regardless of their potential value for timber. Basic needs take priority over economic needs. People have to cook food and eat and keep warm before furniture can be made. For this reason, soil erosion in Zululand is an increasingly serious problem.

Soil conservation procedures would be especially difficult to institute where the population is poorly fed. One can't recommend reduction in livestock herds. The people are dependent upon the land and livestock. Even in the areas where the topsoil has already been completely removed, the people are crying for that now unproductive soil.

Since soil is a product of climate and vegetation, fluctuations in the amount of rainfall and the heat have been the most important contributory factors. Soils have high contents of iron and aluminium oxides in their upper levels; there are nutrients that are released to the soil through the decay of dead plants, just as calcium is released from the shells when animals like molluscs die. When clearing is done, either for agriculture or for fuel, the continual recycling of nutrients is interrupted. Heavy rains wash away the thin supply of soil nutrient and the last substances to leak out are iron and aluminium oxides. The soil is left exposed to the rain and oxygen, and a series of complex chemical changes takes place, often resulting in the formation of the rock-like substance, laterite. This laterisation has occurred over wide areas in Zululand over the years.

Unfortunately animals like earth mms and snails, which help break up the soil particles inhabit wet environments. There is no vegetation to sustain these organisms and they would not survive the exposure as moisture is so crucial to their survival. The scorching heat and the winds are much more than these organisms could cope with. Soil erosion is therefore a vicious circle, the soil has been devoid of everything except the potential for escalation of damage.

Reforestation or cultivation of food crop can only be done in these areas if the soil crust is carefully broken up, fertilized, and the whole system carefully cultivated. The main problem is cost; it would be very heavy on machinery as well as fertilizers and would require a lot of patience.
it be easy to persuade people to do away with livestock? No. Zulus must have their dwindling livestock as their only wealth. Their whole cultural heritage revolves around livestock ownership.

The environment, however has to be reclaimed and the people will have to obtain food from the environment otherwise both the people and livestock will perish soon.

Transport in Zululand

It would be a pity not to say anything about public transport in Natal. Coming from Cape Town, where public transport is fairly good, one gets so frustrated in Natal when one finds that travelling from A to B less than 100 km away can take one a whole day.

Groutville is 6km from Stanger. There are buses running between the two places owned by one company. In the absence of any competition the drivers and conductor please themselves because they know the passengers are dependant on them and they have no choice. They do not leave until the bus is so full that there are at least 30 standing passengers. This means that you can be standing on the bus of 30 minutes in that heat before the bus even leaves. Since Stanger is a town with a lot of supermarkets people want to do most of their shopping there because everything is so much dearer outside town. But the drivers will not have that. They allow only one bag that one can have on one's lap. People used to buy bags of wood and coal and put them on the bus; not anymore. The alternative is hiring a van from the shop at a cost of R6,00.

From Kwa-Magwaza, I travelled by taxi to Melmoth and got there at 11am. Already the queue was so long for the single bus to Empangeni. I was told that the bus started unloading at 1pm. and leaves at 2pm. to get to Empangeni between 4.30 and 5pm. None of these people live in white Empangeni, they have to travel further to their own areas by buses or taxis. A journey of just about 140km, from Melmoth takes them a whole day.

Another example: I wanted to get a taxi from Nqutu to Nkandla (that is the only means of travel between the two places) at 4pm. and I was told it was too late as the last taxi had left at about 3.30pm. So I had to either spend
another night at the Nqutu Hotel or travel by taxi to Glencoe to get the train to Durban. I chose the latter. Incidentally in the taxi from Nqutu to Glencoe there were five of us in the front seat, including the driver. I got to Glencoe at 6pm. only to find that the train to Durban which leaves Glencoe at 20.45 does not run every night and that was one of the nights it was not running. So, I had to sit at the station at Glencoe and wait for the 2am. train. There was no hotel or restaurant I could go to.

The waiting room at Glencoe station is so small that half of the prospective passengers had to sit on the cold cement outside. One wonders what happens in the winter. While waiting there were quite a few 'whites only' trains that went past. It was not a terribly amusing experience. When I got on the train a second class ticket with sleeping accommodation cost me R18,00 as opposed to R9,00 for third class. Bedding is not supplied.

One sympathies can’t help going to school children, especially in places like Mahlabathini, Nongoma, Nkandla and others, where school children have to leave home as early as 6am. We gave a lift to some school children just after 7am. who told us they had left home at 6.30am. to be at school at 7.30 and 8am. respectively. Some of these children looked less than eight years old. They must be very tired when they get to school, especially because some of the roads are very ragged and the place is quite hilly. It would be interesting to know how many of them have anything to eat or drink before they leave home for school. It is hardly surprising that there is such a high drop out rate. It must be a terrible strain to anyone to walk all those kilometres every day in the scorching sun.

Water Supply in the Rural Areas

In the rural areas water is a lifeline. The problem for a long time has not been watering roses and lawns but a drop to drink. One appreciates the uniqueness of the value of water in these areas when one sees water in a rusted old drum that is nearly empty. One sees two frogs jumping out of the water that one has to drink. To talk about a bath is to talk about luxury.

In a lot of the rural and semi-rural areas people have always depended on rivers and springs for water for all purposes; but often these are a long way from the homesteads. There are children who have to walk up to a kilometre to
fetch water before they walk another few kilometres to school. River water is unclean and it is a carrier of many pathogenic organisms, hence diseases like typhoid are commonplace in a lot of areas.

Since the present drought started the situation is grave; a lot of the rivers and fountains have almost dried out, what is left is pure mud. One lady whose house I went to at Esikhawini near Empangeni, showed me pure mud in a glass jar. She was waiting for all the dirt to form a sediment so that she could use the top part. The alternative was walking over a kilometre to fetch water from one of the location houses. She was at the time highly pregnant and to have to carry a heavy bucket of water for that distance in the scorching February sun must be absolutely terrible. She showed me some of the places where they fetched water, fountains in the middle of their banana plantation. It was plain mud; the situation is even made worse by the fact that people have cattle and that is where they drink.

Since the first outbreak of cholera in 1981 its incidence seems to be rising in a lot of areas. Hospitals like Stanger, Nkonjeni, Tugela Ferry and others in Zululand have not been free of cholera cases. Typhoid fever also continues to be common.

Shortage of clean water seems to be another aspect of rural poverty which urgently needs attention. There are old people who can be without water all day till children come home from school to go and fetch water from the river. People walk kilometres for a commodity like water; rural water is unpurified as already mentioned. The Umvoti river water is clear only in the winter when it does not rain. In summer the water becomes completely brown due to mud and all sorts of muck that is washed down from the surrounding hills. But people have no choice.

Infants and young children are bearing the brunt of this unfortunate situation. Scarcity of water coupled with lowered standards of hygiene is aggravating the children's health status. The incidence of gastro-enteritis in the rural areas is very high. Of course the emergence of malnutrition and gastro-enteritis has been well documented. Malnutrition in the rural areas has been chronic for a long time. Parents have been used to their young children being listless, thin, potbellied. They go to hospital when the condition worsens, and are
invariably diagnosed as diarrhoea and vomiting. This is to a large degree contributed to by a contaminated water supply and a lack of washing and household hygiene. The combination then with malnutrition sets up a vicious circle which often eventually leads to death.

Under normal climatic conditions water is a cyclical commodity. The answer in the rural context is water storage tanks to catch and store rain water, but water tanks now cost at least R200 to buy and what poor person can have that amount of money.

The KwaZulu government has helped the people in some areas by sinking boreholes. These have been applauded in dry areas like Ngatu, Msinga and others. At Emthandeni, near Mapululo they are not enough to meet the needs of the people. There are only three boreholes and some people have to walk long distances to the nearest borehole.

At Umvoti Mission, an area with a lot of squatters there are communal tanks at strategic points. These were provided by the Department of Co-operation and Development together with a water truck. There is now a total of four trucks for the whole reserve. In the winter and during droughts trucks supply water to the whole reserve, filling up tanks at a charge of R1.50. Each truck has a capacity for 10 000 gallons. The Department maintains the trucks, provides petrol and pays the drivers.

Some people where communal tanks are situated, have been rationing the water lately, by locking the tanks at certain times of the day so that each family gets its fair share per day. Queues build up as from about 3pm. People leave their vessels to reserve places in the queue; people who are in front have a better chance of returning for another bucketful before it gets dark.
Tuberculosis in the Rural Areas

The fact that every hospital visited had a high number of tuberculosis patients, as evidenced by the existence of a tuberculosis ward shows that the incidence of the disease is very high. Something must be wrong. It is likely that the figure for those who have not been found is as high a figure as those notified annually. Of the estimated 70 - 109 thousand infectious cases, only 45 000 are annually diagnosed. (S.R. Benatar, 1982).

Most of the hospitals in Zululand are now under the administration of the KwaZulu Government with their satellite clinics; some of the areas, because of extremely bad roads are inaccessible. There are people living in some of the most remote areas, far from the mobile clinic points. Some of these die having never been notified, having been treated by an inyanga while the disease was progressing.
With unemployment rising and the people in rural areas hardest hit, there are so many people who, in spite of illness still hang on to their jobs. They are quite aware of the seriousness of the illness but, being the sole breadwinner what are the children going to do if they go to hospital? Will he get his job back again? What about the family's accommodation on the farm? For these reasons, they go to hospital when it is often too late.

There is an alarming increase in endogenous reactivation. It is said that among blacks there is 2.2% chance of becoming infected. The percentage risk is likely to be much higher, considering population increase and the fact that there is a chronic shortage of hospital beds in a lot of areas. It is likely that only about 50% of all active cases are hospitalised, this, together with incomplete immunisation and stress factors results in many children becoming infected.

Tuberculosis in South Africa is a symptom of socio-economic conditions that must be tackled urgently. It is difficult to see how the battle against tuberculosis can be won by the tuberculosis control programme without raising the peoples living standards, especially in the rural areas.

The most important factor contributing to the high rate of endogenous reactivation is low nutritional status in a lot of areas. It has been shown that inadequate nutrition predisposes to infection by lowering the body's resistance. This, together with strenuous physical work and inadequate housing lowers the body's resistance by lowering the protein stores. Disease is known to upset the mechanism for controlling the metabolism of essential nutrients thereby altering dietary nutrient requirements.

Nutritionally 'complete' protein sources such as meat, eggs or milk, that tuberculosis patients and children require are beyond the reach of the poor especially in the rural areas. With poor nutritional status children are most a risk of infection and recovery of acute cases is delayed.

Control measures like supervision of ambulatory cases, reduction of infection should go hand in hand with greater efforts to improve living standards especially in the rural areas. It must also be stressed that as long as most patients receive no unemployment or sickness pay, continue to live in perpetual anxiety.
and insecurity, the goal will never be achieved. They will always prefer to go to an inyanga or a Zionist who will not hospitalise them while he takes sputum specimens and repeated x-rays. The death rate will be higher.

SUMMARY

Nutritional status in the whole of Zululand has undoubtedly worsened in most of the areas. There is widespread deprivation and, of course, the current drought has made the situation worse. Fresh water is one single problem in a lot of areas. There have been no crops this year as a result of the drought, with the result that food prices, which are generally higher in the rural areas, are even higher this year.

As far as health status is concerned, KwaZulu Government's efforts of improving health status by forming health wards must be applauded. Established clinics and mobile van clinics with several stopping points have reduced the numbers of hospital admissions. The staff can see for themselves what the situation is outside hospital buildings. Above all, with transport as poor as it is in the rural areas, people are spared the ordeal of travelling to hospitals for fairly minor ailments which can be dealt with by nursing staff.

Provision of boreholes, though they are a mere drop in the ocean, is a step in the right direction. Most areas are crying out for water, especially in the light of the present drought, when water storage tanks are beyond most peoples' reach, selling at more than R200.

Malnutrition

Here the situation is most unpleasant. As there is a temptation to shrug off figures of malnourished patients as small, there is no point in calculation the death rate, as the situation is very confused.

Malnutrition is often in combination with other conditions, like tuberculosis, which is also on the increase. Among protein energy malnutrition cases the death rate is high but usually the cause of death is often officially attributed to some infection or parasitic disease which in most cases only dealt the final
blow. Diseases that are usually only minor nuisances in well nourished individuals are devastating to the malnourished. Even if they do not kill them they tend to intensify the malnourishment by draining the individual's reserves.

Extremely poor sanitary conditions further complicate the picture, gastro-enteritis and infestation of various kinds of worms are commonplace. In most of the hospitals they still have a number of cholera cases. At Tugela Ferry and Nkonjeni hospitals the cholera wards are still open.

Tuberculosis is far more widespread, with very high numbers of reactivated cases. Most of the over five year olds who are malnourished are tuberculous. At Nkandla hospital they have a tuberculosis ward for children only.

Places like Tugela Ferry and Emthandenini have far less malnutrition in children. There is more emphasis on breast feeding. This shows that breast milk is a very important food commodity which ought to be regarded as a very highly prized national asset.

At Valley Trust they have realised that malnutrition arises as a result of a multiplicity of social, economic and environmental factors. They have a broadly bases approach, engulfing primary health care, nutritional education and gardening. Above all they have involved the community. This realisation that the problem is a socio-economic one and not a medical one as such has led to planning of projects involving the whole community. Nutritional status has greatly improved over the years.

Factors that have figured strongly in the causation of malnutrition in children as well as in adults are poverty, family disruption and migrant labour, illegitimacy, alcoholism and ignorance.

Poverty

People are very poor in the rural areas. There are no jobs and even the people who are employed their income is extremely low. Food is more expensive in the rural areas. Housing is inadequate. Fresh water is a problem. People live for today and their general attitude is one of helplessness. People with higher buying power buy in bulk as it works out a lot cheaper. A poor
person has no choice but to try and stretch what little money he has got by buying the least expensive, which is often the least nutritious in very small quantities, just for one day.

A person who is poor has all aspects of life militating against him, he lives in a poor area where the soil is likely to be poor and badly eroded; or he has no land at all to grow his own food. This leads to deprivation of all aspects of the culture which allows other members to keep themselves from poverty. There is the inevitable present orientedness which perpetuates the situation.

Migrant Labour

Because of unemployment and hunger in the rural areas people leave for big cities like Johannesburg and Durban. Most of them send very little money home. Some do not send money at all and start substitute families wherever they are. The family suffer back home; the wife leaves the children with a relative and goes to the city too to seek employment. She may be so under-paid and send very little money and has often to pay the person who looks after the children as well.

Living and working in the city too she is tempted to yield to social pressures to emulate her environment. 'The poorer people are the more likely they are to spend a disproportionate amount of whatever they have on some luxury rather than on what they need...' Marketing in Developing Countries, Columbia Journal of World Business, 1974.

Illegitimacy

This is currently a country-wide problem, also contributed to by the school drop out rate which is so high in African schools. An illegitimate child is an extra mouth to feed. Often the mother is so young the parents feel obliged to give her another chance and send her back to school. Milk powder is so expensive the family can hardly afford it, they make the feed so diluted to make the tin last a little longer. Of course the baby has not been breast fed to get immunity against alimentary infections. The bottle, the nipple and the formula are now in the context of a contaminated water supply, a lack of washing, refrigeration, or cooling facilities and household hygiene.
The exposure to bacteria and the malnutrition set up a vicious circle. The infant gets chronic diarrhoea and is therefore unable to assimilate even the diluted formula. The nutritional state worsens. Schools have a high proportion of girls who have left children at home and gone back to school. Teachers feel they have a moral obligation to give them a try, this forming a precedence; no doubt girls know they can always leave the babies and go back to school. It is difficult for both the parents and the schools.

**Alcoholism**

This is another social evil that is plaguing the country at an unprecedented rate. People seem to be spending more and more on alcohol. Tuberculosis cases are often pronounced cured, go home to drink, only to return to hospital after a few months reactivated.

There are people in the rural areas who are perpetually drunk. So many family break-ups have been contributed to, if not directly caused by, excessive drinking. As mealie meal, meat and milk seem to be getting dearer, alcohol seems to get cheaper.

When an individual feels powerless as well as socially and culturally deprived alcohol may be the only thing that boosts his ego, under the influence of alcohol a poor person's dreams come true. All that he has ever wanted seems possible. Perhaps people get themselves in a continual state of drunkenness in order to escape the depressing sameness; the emptiness of life that seems without end.

For a change he is somebody else, he is in a brighter world and life is worth living. However, when a child of 3 years, in hospital with malnutrition, cries for beer and says 'We drink beer always at home', that is another matter. This was heard by the author at Stanger hospital.

**Ignorance**

This is another factor that seemed to come up often during by conversations with nurses in several hospitals. It is my personal opinion that it still ought to be investigated to what extent ignorance is contributory to malnutrition. People do not eat mealie meal daily because they love it that much. It just
happens to be the cheapest commodity they can afford. In Zulu mealie meal is often referred to as 'umdinanja' which simply means 'that which even a dog gets tired of'.

To a person who has a large family and a piece of land it makes sense, from his point of view to grow high energy, high yield crops. Energy needs take priority over protein requirements.

The poor are also vulnerable to advertisements of baby food. If a commercial says 'Step into the 21st century with...’ people will believe that it is the best thing to give to their babies.

However, if people knew that there are nutrients in certain foods, like calcium in milk, that are crucial for their children they would take more pains to make sure their children got those nutrients. The irony of it is that people who never spent a single day at school but who have enough money, enough land and stable families very rarely have malnourished children.
These papers constitute the preliminary findings of the Second Carnegie Inquiry into Poverty and Development in Southern Africa, and were prepared for presentation at a Conference at the University of Cape Town from 13-19 April, 1984.

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