

By NGURE K. N.

SIXTY percent of Kenya is classified as arid and semi-arid (ASAL). Problems related to food production in these parts need urgent attention because they impact on food security problems in the entire country. This is because the remaining 20 percent of the land in the country is not able to support the ever growing population.

Kenya's high population, now standing at over 30 million, has resulted in medium potential environment (often called marginal and semi-arid) being explored more for increased food production. The ASALs of Kenya have attracted attention from policy makers, scientists and politicians. This is because whereas the ASALs are supposed to supplement high potential areas by providing food for the entire Kenyan population, the yields obtained are very low.

Records obtained from the Ministry of Agriculture office for Masii location of Machakos District indicate that only four bags of 90 kilogrammes each of maize were harvested from each hectare on average during the long rains of 1997 and one bag per hectare during the short rains. Maize occupies the largest acreage compared to other crops. The average yield of the Katumani maize which is planted there is about 20 bags per hectare. In the years before 1997, the situation was similar with yields ranging from one bag to 10 bags per hectare.

Masii location, with an area of 123 square kilometres and a population of 23,000 and 3,020 farm families, represents a typical ASAL region. Each farm family therefore has eight persons on average and each farm family owns four hectares on average. Some of the land, about one half of total holding is left for cattle grazing while the rest is put under crop production. From the figures, it clearly shows that the amount of food produced can support the families. One or two bags of maize is not sufficient for eight people especially if there is no other source of income.

The communities living in the ASALs experience a combination of both short-term often acute food crises and long term or chronic food shortages resulting from very low yields that sometimes near total crop failure.

# ASALs not fully



Forestry in a dry area: A worker assists in watering seedlings in a research centre in Kitui, one of the dry areas in Kenya.

The former often translates into famine and starvation, requiring emergency food aid. Research has shown that these poor yields can be improved and a lot has been done. This includes the setting up of a research station at Katumani in 1955 to help find crops suitable for the ASALs.

The setting up of Kibwezi farm is an example that speaks for itself and it is a living testimony of how high the yield obtained can get. Other projects have been set up at the farm level all aimed at improving the situation.

What really needs to be done is to address the problem of adverse weather that manifests itself in form of drought resulting from unreliable rainfall and short rainy seasons. For example, it has been established that the long rains, which are experienced between March and May in Machakos and Kitui districts, which are within

ASALs, last for approximately 13 weeks with uncertain rainfall the first two weeks of March and the last three weeks of May. Katumani maize on the other hand requires about 17 weeks between planting to maturity. It therefore means it requires to utilise four weeks more than the whole duration of the long rains season. This is a problem that affects other crops as well.

One way of solving the problem is by practising early planting. Late planting has been identified as a major factor which accounts for the severe reduction in yield. A research conducted to test effect of planting date on yield found that eight days of delayed planting after rainfall onset reduced yield from 2530kg/ha to 410kg/ha implying 84 percent reduction. Crops planted late suffer prolonged water stress which affect the crop at an early and

critical stage. Delayed planted crops are also affected by the low soil temperatures caused by the rains that consequently hinder root activity. The short rains last for nine weeks from the last week of October to third or fourth week of December.

In the ASALs the short rainy season has proved to be more reliable than the long rains extending to January and February as it has been experienced this year. In fact farmers have been advised to take advantage of these rains in January and February that almost merge end of short rains to onset of long rains by planting the long rain crop before the short rains crop has been harvested. Field tests results have strongly supported this.

Another cause of poor yields are production systems that accelerate environmental degradation, decline in fertility and



# not fully exploited



**Dry rivers: This woman has to dig up the riverbed to get water for domestic use. In ASALs most rainwater is not harvested**

soil erosion caused by overstocking that leads to overgrazing, burning of land, indiscriminate cutting down of bushes and poor fertiliser use. A lot of campaign by extension workers has been done but with poor results.

Despite encouraging field test results by various projects, farming technology transfer has been all time slow. This has been attributed to failure of involving the farmers in planning and implementing activities that are aimed at improving the farmers' well being. This has resulted in farmers viewing such practices as foreign and beyond their reach.

However, in situations where the farmers have been involved, the poor economic situation of the families stand in the way of most farmers and they always fall back to the less productive but cheap practices. Properly controlled credit facility where the farmers receive

necessary inputs and proper advice could help ease the problem.

High illiteracy levels are also to blame for the very slow rate of technology transfer. Well educated members of the society have migrated to urban centres. The situation is not likely to change in the near future because of the deteriorating infrastructure like road network, telephone, electricity, schools and colleges and water supply in the rural areas.

Solving one problem and leaving the farmer to face the rest on his own is the approach most projects apply. Problem solving requires broader approach. A food security project that ignores domestic water availability has done very little to

address any of the two problems. A more wholesome approach that tries to address all the problems the farmer faces would be very well received.

Finally, in the few seasons when the weather favours the farmer, they (farmers) have been known to quickly head for the market and sell the produce at throw away prices to sustain themselves. The situation should be one where surplus from the "good" seasons is spread out to cater for the "bad" seasons. Farmers who depend on rainfed agriculture should be storing their produce in pest free environments, than selling it soon after harvest at low prices, only to buy the same a few days later at exorbitant prices.