

FEEDING the growing population at reasonable nutritional levels has been at the centrestage of macro-economic planning and policy making in India for almost three decades now. Considering that land availability has been a major limitation, emphasis has rightly been on getting more and more food from the same stock of cultivated areas.

The strategy was one of employing genetically superior high-yielding varieties of seeds (HYVs) on a large scale that are capable of converting plant nutrients into grains. The results have been spectacular.

Though HYVs provided the initial fillip to the so-called Green Revolution, but increasing application of plant nutrients through chemical fertilisers sustain it.

Our major concern now is not only to sustain the current high levels of foodgrain production, but also, to increase it to the projected 240 million tonnes level by the year 2000 to feed one billion mouths. The real test of our ability to do so lies in assessing how much nutrients we are capable of supplying to the soil in relation to the needs. N, P and K are the three primary nutrients constituting essential elements of plant food.

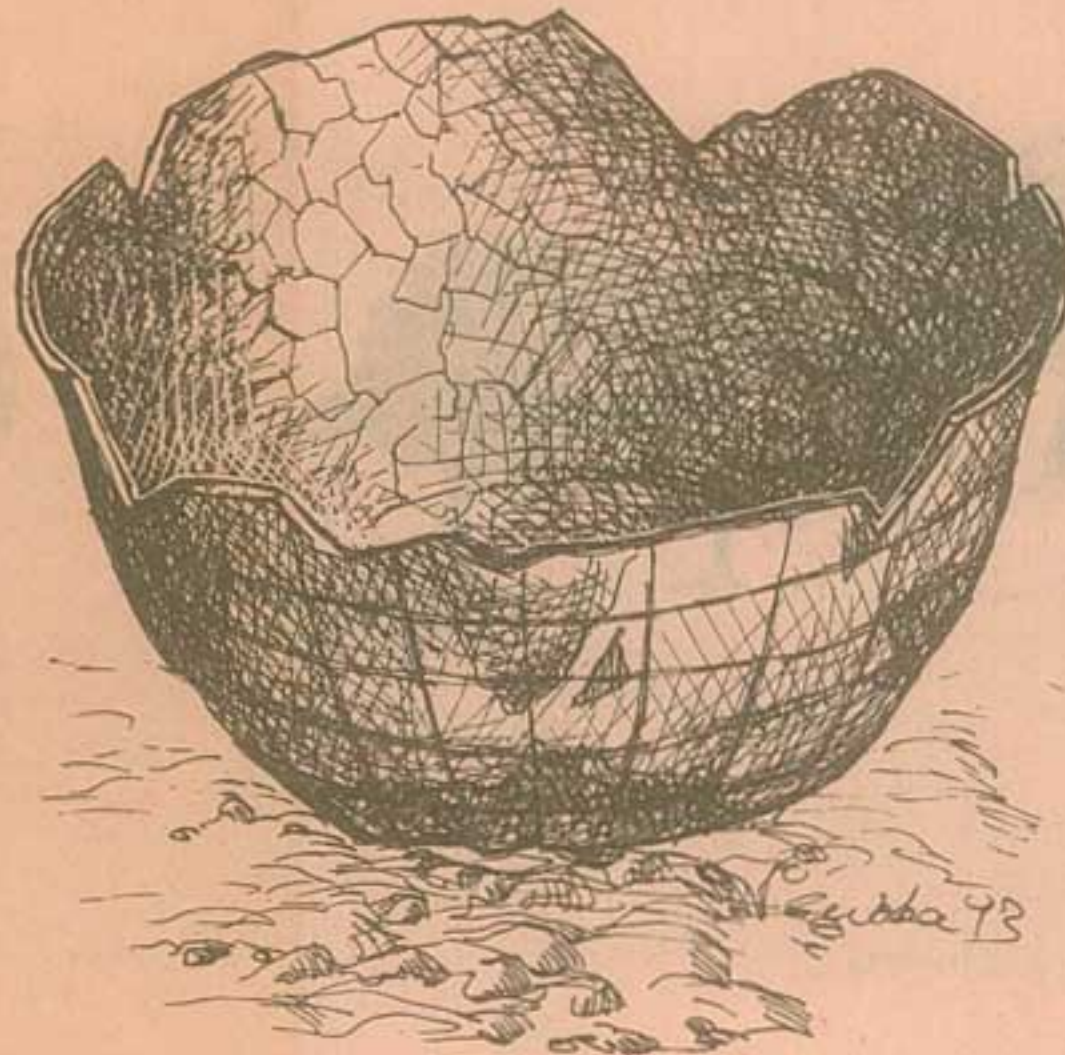
Available estimates point towards removal of 13.2 million tonnes of nutrients by food crops during 1988-89. Considering that in that year, 170 million tonnes of foodgrains was produced, this translates to removal of one tonne of nutrient for every 13 tonnes of foodgrains. Let us apply this factor to foodgrains production of 172.5 million tonnes during the year 1991-92 and we have nutrient removal of 13.3 million tonnes.

Against this, the nutrients returned to the soil devoted to production of foodgrains was only 9.5 million tonnes (on the basis of N, P, K use for foodgrains in 1991-92). But only 50 per cent is actually available for uptake by crops i.e. 4.7 million tonnes representing the average efficiency of use.

Juxtapose this with the removal of 13.3 million tonnes, and we have the cultivated land area under foodgrains becoming poorer to the extent of 8.6 million tonnes. However, this may not give the full picture as besides chemical fertiliser, the soil is getting nutrients from other sources as well, including manure, organic waste and crop residues.

The high profile debate on 'organic vs chemical fertilisers' is mere rhetoric. All put together, sources other than chemical fertilisers contributed about 6.5 million tonnes of nutrients in 1991-92. In reality, it was even less — about three million tonnes.

Together with chemical fertilisers, the quantity returned to land area under food crops could, at best, be 7.7 million tonnes. With the removal of 13.3 million tonnes, the net loss of nutrients experienced by the soil during 1991-92 would work out to about 5.6 million tonnes. During the current year, with expected decline in fertiliser consumption and higher anticipated foodgrains production of about 177 million



Feeding one billion mouths

We are not caring for our soil as much as we should, says Uttam Gupta

tonnes the situation is likely to worsen.

The upshot of all this is that we are not caring for our soil as much as we should have. Much as we would like to produce more and more food, our efforts in terms of even returning to the land at least the nutrients we have removed, leave a lot to be desired. Clearly, we are not working towards "sustainable" agriculture. What is even worse is that efforts are afoot to dilute what we have already achieved. Mindless emphasis on organic farmyard manure to the point of even projecting this as replacement for chemical fertilisers has vitiated the atmosphere.

The facts clearly show that nutrient supplies from both the sources put together fall substantially short of the requirements. Where then is the question of one source replacing another?

There is a greater danger still. This relates to our ability to sustain fertiliser use even at its present level i.e. 12.7 million tonnes nutrients in 1991-92. About 78 per cent of this was supplied by the fertiliser industry in India. Currently, the production capability of the industry is under serious stress. Already, sudden decontrol of about half the industry in the 'P' and 'K' sector juxtaposed with free import of DAP at dumping prices and at zero duty, has put a big question mark at its continued viability. Besides, the financial squeeze caused by huge outstanding subsidy dues from the government and niggardly lifting of decontrolled fertilisers by farmers due to increase in prices, has forced closure or reduced production in plants.

The nitrogenous industry which continues to be under control, too, suffers from financial squeeze due to non/delayed payment of subsidy dues as also the fact that the retention prices under the sixth pricing period, due for revision in April 1991 are yet to be announced.

During the past 21 months or so, the units have financed the excess expenditure on this count at heavy interest cost, substantially eroding their profit margins and ability to generate funds for growth. Besides, the policy environment continues to be uncertain even as the talk of removal of controls on urea goes on unabated, synchronising with the government's oft repeated commitment to eliminate fertiliser subsidy altogether. There is an urgent need to clear the fertiliser policy mess at the earliest and remove all obstacles to continued growth of the domestic industry. Unless the situation is immediately remedied, our soils will be denied vital food that they need.

Looking at the future, we have to feed one billion mouths by 1999-2000. We have set a target of 240 million tonnes of foodgrains for the year 1999-2000. Working on the basis that one tonne of nutrient is removed for every 13 tonnes of foodgrains produced, 18.5 million tonnes of nutrients would be required for food crops alone. As against this, on the basis of existing capacity, projects under implementation and additional capacity approved, the total nutrients available indigenously would be about 13 million tonnes.

This translates to an application of 10 million tonnes on foodgrains. But, only 50 per cent of this i.e. 5 million tonnes is available for use

by the crops. Together with 3 million tonnes from sources other than fertilisers, the total indigenous supply of nutrients would be only 8 million tonnes, leaving a gap of 10.5 million tonnes.

There may still be some possibility of drawing down on the reserves in the soil which even under the most liberal assumption cannot be more than the current level of nutrient mining of about 5.6 million tonnes (1991-92). That would still leave an uncovered gap of about 5.0 million tonnes and corresponds to an application of about 10 million tonnes through chemical fertilisers. To make it up through imports at current international prices, a whopping sum of about Rs 9,700 crore would be needed. The alternative would be to import 75 million tonnes of foodgrains, which again, would cost us about Rs 37,500 crores at current world market prices. In either case, we have a horrendous scenario staring at us seven years from now.

If we are to avert a disaster, there is an urgent need to remove all barriers in the way of increasing supply of nutrients. Towards this end, parallel action on three fronts has to be initiated. First, the government should clearly enunciate the role of organic sources in the overall management of plant nutrient supply in relation to our needs. This is necessary to set at rest the widespread impression that the nutrient needs can be adequately taken care even if chemical fertilisers are neglected.

Second, the present mess in fertiliser policy in the aftermath of sudden policy changes based on overall macro-economic compulsions, need to be cleared at the earliest. If economic reforms require complete elimination of subsidy, then market forces should be allowed to work unhindered.

Finally, the industries supplying inputs such as naphtha, fuel oil, gas, coal and power etc., to fertiliser industry should be thrown open to private sector participation in production/exploration and distribution. This would help in breaking the monopoly of state run enterprises and help in reducing cost to user industries by generating competitive pressures. When downstream industries are expected to compete in a free market, there is no reason why the same logic should not be applied in respect of enterprises in the petroleum or power sector.

Concomitantly, the latter should also be liberated from government controls to give their managements necessary freedom in managing the affairs. Apart from being beneficial to the enterprises themselves in the long-run, these two decisions will help create a situation whereby an industry like fertiliser can make optimum choices with regard to feedstock mix, quantities and prices. A situation in which there are artificial restrictions on availability of inputs/feedstock and yet they are expected to be cost effective, is simply not sustainable.

The industry in this country has the capability to provide the desired support for feeding the increasing population. But, for this potential to be realised, the policy with regard to the fertiliser sector development needs to be clearly enunciated.