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Science and our Food Problem

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Our food problem has three major aspects —  
quantitative inadequacy, qualitative imbalance, particularly with reference to proteins and lack of purchasing power to buy food. A general shortage in the consumption of calories, ~~and~~ over-consumption of proteins by the rich and protein hunger in the economically handicapped sections of the population are characteristics of our nutritional scene. The fact that in a considerable size of our

Population the lack of purchasing power is the root cause of poor nutrition was brought out clearly during the ~~scarcity~~ <sup>drought</sup> years of 1965 and 1966 when in states like Bihar, the rural children ~~beca~~ were better fed than <sup>in</sup> normal <sup>years</sup> ~~due~~ to the initiation of various kinds of free feeding programmes. It is therefore obvious that agricultural transformation programmes in India should aim not only in achieving self-sufficiency in ~~food~~ <sup>the</sup> availability of food <sub>2</sub> but ~~also~~ more basically at ~~the~~ using agricultural advance as a potent tool ~~for~~ <sup>for</sup> ~~achieving~~ <sup>achieving</sup> the economic upliftment of the agrarian population

The development and release of high yielding varieties in the major cereals and millets and the catalytic role they have played in stimulating the greater use of fertilizers and water would ensure <sup>that</sup> at least till the end of this century India can avoid serious famines if it desires to do so.

There is immense scope for increasing the total production of crops like rice and jowar ... In rice, a significant spurt in the yield per unit area has yet to happen, largely because of the poor grain quality of the exotic varieties, inadequate extension help and the absence of community efforts in drainage ... With the development of high yielding cum high quality rice varieties at the IARI,

rapid progress in rice production can be expected from 1970, particularly in regions where drainage is not a serious problem.

The qualitative aspect of the food problem can be solved in the immediate future only through the genetic up-grading of the quantity and quality of proteins in the basic staples, an increase in the <sup>yield</sup> cultivation and consumption of pulses and the better feeding of the 50 million under-utilised cows, which would be possible if the high-yielding varieties programme does not lose its momentum. Fortification is not likely to make a dent on this problem, unless common salt can be fortified. ~~See~~ Recent genetic evidence suggests that the

most vulnerable stage with regard to the effect of nutrition on brain development, may be the ~~age of one~~ first 12 months of a child's life.

Over 10 million children of this age have to be attended to every year and there ~~is~~ <sup>are</sup> no organised feeding programmes which aim to cater to this <sup>age</sup> group. The only redeeming feature of this situation is that in the poorer sections of the community the mother is able to feed the baby for a longer time and since ~~more~~ mother's milk is perfect food, impairment of brain DNA formation may not be important in ~~mother~~ - fed babies, ~~as in weaned~~ <sup>If lysine-</sup>

rich maize and other strains are grown in villages and are used for feeding babies, the malnutrition problem can be tackled without any ~~such~~ special educational effort.

~~Another~~ A potent educational mechanism for creating an awareness of the importance of proteins in ~~vill~~ villages would be the introduction of a protein premium in pricing policy.

For using agricultural transformation as a tool in increasing rural prosperity and economic growth, several ~~immediate~~ steps are needed. First, alternative land use and crop use patterns should be evolved in the irrigated areas. ~~so that~~ Secondly,

the food industry should become variety-conscious both for home-marketing and for export. For example, if the wheat variety Sharbati Sonora is used for making bread, the loaf is of a far superior quality than any available now in the market.

Thirdly, immediate attention should be paid to the areas characterised by moisture deficit. The new techniques developed for such areas by scientists include the conservation of rain water in small reservoirs lined with locally available material like better methods of land preparation, bentonite, the application of nutrition through leaves and the use of drought-escaping varieties

During the next few years, far superior strains are likely to become available for the dry areas. These would include Triticals, a ~~new~~ man-made cereal developed ~~from~~ by crossing wheat with rye and hybrids of different crops. The advantages of hybrids <sup>are</sup> their early seedling vigour and deep root system. If these characters are combined with earliness, the rigours of drought can be ~~and~~ <sup>be</sup> minimised and the average yield of unirrigated crops improved substantially. Science has opened up altogether new vistas in the economic exploitation of the plant and animal wealth of our country. If wisely exploited, ~~the country can~~ it can help to launch our country on the road to prosperity.