

PRESIDENTIAL ADDRESS*

by

P.V. SUKHATME

Honourable Minister for Agriculture, Irrigation, Rural Reconstruction and Civil Supplies, Shri Rao Birendra Singh, Dr. Sen, Dr. Chaudhri, Dr. Kishen and distinguished guests.

It is normally the privilege of the President of the Society to welcome the Minister for Agriculture. Dr. M.S. Swaminathan, the President, greatly regrets that he is not able to come owing to an urgent meeting of the Planning Commission. He has, therefore, asked me in my capacity as Executive President to welcome you, Sir, on this occasion.

The President's address is a great occasion for the Society. I recall the days when Dr. Rajendra Prasad addressed us at the Annual Meetings. He never missed a single Annual Meeting of the Society. The same is true of Dr. M.S. Swaminathan. Agricultural Statisticians all over the country owe a debt of gratitude to these men. Dr. Rajendra Prasad saw in Agricultural Statistics a means to encourage collection of data which can throw light on farmers' problems. Dr. M.S. Swaminathan went a step further. He saw in the Society an instrument to encourage statisticians to be applied minded and thus to recognise that statistics was an applied science.

Statistics can be defined as the study of variation and co-variation, but it would have little to contribute unless the statisticians themselves knew the field of application as much as the statistical method itself. This is the thinking in which late Dr. Panse and I were brought up. I would feel ashamed to be called agricultural statistician if I am not familiar with agricultural science almost as much the agricultural scientist himself. That is also the reason why

* On the occasion of the 35th Annual Conference of the Indian Society of Agricultural Statistics, New Delhi.

the Society has been named as the Society of Agricultural Statistics and that also explains why the Society likes to associate itself closely with the problems of the Ministry of Agriculture and looks to you Sir for encouragement in its work.

The problem with which India is most concerned today is the problem of poverty. I have made a special study of this problem— of its size and nature. In the absence of the President, the most I can do today is to offer a few remarks on this problem.

As many of you know, several articles have appeared during the past year in the Economic and Political Weekly from Bombay on the measurement of poverty, using average calorie requirement as the criterion of undernutrition and estimating the income or total expenditure corresponding to the average calorie requirement as the poverty line. The Planning Commission uses the poverty line thus defined to find that 48% of the people in the country are too poor to be able to afford the expenditure to meet their daily needs of food.

As statistician I find this usage a grave misuse of statistical method. To consider people below the average energy requirement as undernourished, is equivalent to considering those above as overnourished and to acknowledge that the more serious problem that is today facing us is overnutrition and not undernutrition. The flaw lies in the assumption that man's need for calories is fixed, which it is not and cannot be. To accept that an individual's requirement for energy is fixed is to accept that he is either undernourished or overnourished and therefore, by implication to accept that everyone in the population is malnourished. Available evidence confirms that man's requirement for energy is not fixed, but is in fact flexible and auto-regulated over a wide range of intakes and that in consequence, an individual is able to regulate his intake within the range, without losing body weight or adversely affecting his level of physical activity. The data situation is much like that of concentration of sugar in blood in the fasting state. It is known to be flexible over a range from 60 to 120 mg per 100 mls in healthy active subjects. If occasionally, the value exceeds 120 mg, the body releases insulin to mop up the extra sugar; if it falls to near about 60 mg, glycogen is released. In other words, the range serves as a clinical tool for diagnosing whether a person is diabetic or not. Intra-individual variation in energy intake in a man engaged in fixed tasks, serves much the same purpose of diagnosing whether an individual is undernourished or not. In case the concentration of sugar is found

to be higher than 120 mg., the doctor usually examines the man for variation on successive days or administers other tests to see if the variation is in fact under control of the individual or not. Much the same is true in diagnosing malnutrition. The point is important because there is a common belief that the more you eat, the more will be your work capacity. Indeed it is argued that if Americans are taller, heavier and stronger, it is because they eat more and better. Actually, there is no support for this belief in the available data. What we find is that for any given level of activity, a man does not stand to gain by increasing his intake, provided it is above lower threshold value of the homeostatic range of requirement. The only conclusion we can draw from this is that if western people eat more than what we eat, it must be because they love food and drink and they can afford it, and not because what they eat represents the minimum needs of man for health and activity. Indeed they argue and ask what is life for if not for enjoying food and drink? If they are heavier and taller than us, the reason obviously must be found elsewhere. We now know that the limiting factor in the growth of Indian children is not food alone, but it is also, and primarily, the morbidity from gastro intestinal diseases.

In this situation we must accept with a grain of salt the type of advice given by the world Organisations, and particularly, the World Bank. They tell us that the principal reason of poor economic growth in the past has been the cause of widespread incidence of undernutrition in the country. They argue that inadequate food has led to low productivity and low productivity in its turn has led to greater poverty. Therefore, unless we feed ourselves well and do it soon, our economic, social and physical development is likely to be completely arrested. This logic is forceful and well presented, but when they tell us that all people below the average requirement are undernourished they are clearly exaggerating the problem out of all proportions. As I said before no man in health can have his intake always below his requirement. If it were so, it would imply that he is either undernourished or malnourished. To use average requirement as the yardstick will mean that our principal problem will be overnutrition and not undernutrition, which is clearly absurd. It is, therefore, a great pity that the world organisations in the name of nutrition are leading us astray. To say that we would like people of India to eat the same food and attain the same standard of living that they themselves enjoy, must in the circumstances, be regarded a gimmick for political philosophy. I would advice you not to be carried away by this propogenda.

It is true that age for age, most of us have body weights smaller than the Harvard median standards. According to what is known as Gomez classification in current text-books on nutrition, children with weight deficits between 10 and 25% are called mildly malnourished: those with weight deficits between 25 to 40% are said to be moderately malnourished and those with weight deficits exceeding 40% are said to be severely malnourished. In reality, longitudinal surveys in children of 0 to 23 months, over a period of one year have shown that the risk of morbidity and mortality from gastro intestinal diseases is about the same in all children unless their weight deficit exceeds 35%. The so-called mild and most of the moderate malnutrition is, therefore, a myth. To say that some 80% of our children are undernourished and malnourished, because their body weights are smaller than Harvard median standard is, therefore, to grossly exaggerate the incidence of undernutrition in the country. It is of course well-known that there is synergism between nutrition and infection, but there is not reason whatsoever to believe that nutrition can improve resistance to gastro intestinal diseases. Let USA children stay in our village environment and they will find that although healthy, active, taller and heavier, they will not be able to remain so if they are exposed to the gastro intestinal morbidity prevailing in the country. I am reminded here of the World Bank expert who visited Bangla Desh. Believing that he is strong and healthy, he went into the villages to find that within a few days he suffered from diarrhoea to an extent that the Cholera International Research Laboratory at Dacca received an emergency call to save him. He was literally pouring out protein by the time he reached Dacca. To insist on improving nutrition in this situation is like filling a leaky bucket. While food is basic for life, it needs the support of water, environmental hygiene and sanitation to make the most of it, especially in childhood.

We do not have to go too far for further evidence. Look at Kerala which our economists have set aside as the poorest of the states in the country, simply because the level of consumption of the people of Kerala is smaller than that of other states. In reality Kerala enjoys far greater health than other states. It has the lowest infant mortality rate and the longest expectancy of life. Even the crude death rate is smaller than that in many of the western countries. The people in Kerala may be small in size, but smallness does not imply that they are either undernourished or not healthy. Indeed our studies from Kerala show that women living on as little as 1300 to 1400 calories do have a work capacity and health on par with the northern women eating much more. All this confirms that provided the level of intake

exceeds the minimum threshold, the more one eats above it, the more one wastes.

This is not to deny that we are not poor, or that under-nutrition does not exist. It means that the incidence of mal-nutrition is much smaller than has been made out. By using average requirement as the cut-off point and the Harvard median standard as the point of comparison, we are so grossly exaggerating the size of the problem that as a result, the relatively better offs among the poor tend to capture the benefits of official programmes, leaving the poor where they are or even worse off. You can see for yourself that my analysis has far reaching implications for policy for combating poverty in the country. I would urge you as agricultural statistician to take up this study in different parts of the country and help the Ministry of Agriculture in its task of growing the needed food.

I request you, Sir, now to inaugurate the meeting.