CHAPTER V

IMPLICATIONS, CONCLUSIONS AND SUGGESTIONS

IMPLICATIONS

New agricultural strategy is in operation for about two decades now. The secular trend in agricultural production during this period has been an impressive upward swing. The period has not been without peaks and troughs. The usual economic oscillations in the production series point to a significant fact that despite the best strategy, the absolute production, in general, and food production in particular can fall and at times may fall sharply. The reasons are two fold in our country. Firstly monsoons continue to dominate the agricultural enterprise and secondly the new crop diseases can cause a considerable damage. In addition there may develop local problems as well, owing to a number of factors. Adoption of New Agricultural Strategy, is thus not an insurance against all the problems. It would therefore, be desirable or perhaps imperative to take stock of its performance and identify the problems associated with it and investigate into the future prospects of such a strategy.
The problems of New Agricultural Strategy directly emanate from its implications recorded over time. These implications may be classified as under: (i) Economic, (ii) Social (iii) Biological and (iv) Political.

**Economic Implications**

Implications falling under this head may be studied under the following sub-heads:

- a) **Production and Productivity**
- b) Income;
- c) Employment; and
- d) Acceptibility.

(a) **PRODUCTION AND PRODUCTIVITY**:

There is no doubt that New Agricultural Strategy has led to increase in the volume of production. In particular, the food production increased sharply. From 50.8 million tonnes in 1950-51, the food grain production went up to '53 million' tonnes in 1983-84. This is indeed a remarkable achievement. However, it is a known fact now, that 'Green Revolution' in India shaped as a wheat revolution in the beginning and then as a good grain revolution and never as an agricultural
revolution. In substance even within foodgrains, only rice, wheat maize and bajra have shown perceptible changes while the other foodgrains have lagged far behind. Distrusting to note is that the performance of pulses and oilseeds has also been far from satisfactory. There have been problems with respect to productivity as well. Not only have productivity differentials been significant crop-wise but the trend overtime has also not been smooth. In fact, some researchers have found evidence to show that rate of growth has not only levelled off but has decelerated as well. A few symposia conducted during 1983 on agricultural performance in the country have explored these problems and sounded a note of caution in this regard. Though acceleration and deceleration of growth are normal phenomena in development experience, yet it can not be overlooked as a temporary occurrence. Keeping up the tempo of agricultural growth is going to be the most formidable problem of New Agricultural Strategy. There are definite signs of levelling off the productivity rates and positive clues to its declaration in some cases. Similar trends are discernable in areas under High yielding variety seeds. In one of the studies in Andhra Pradesh, it has been observed that the area under High yielding variety remained stagnant during
1974-75 to 1977-78. This may have led to lower rate of growth of yield since 1975-76. Recent studies have also shown that differences in inputs between traditional and High yielding variety's are far less than expected. It was alarming to note that total cropped area under HYV's fell below 30 percent by 1977-78.

Excitement generated by High yielding variety's in the beginning is fading so far as production and productivity are concerned. The problem of production and productivity has to be viewed from two angles. The physical capacity of pushing up the production and to what level and then the flow of inputs to agricultural sector in an uninterrupted manner and increased quantities. The increase shall have to be uniform and alround. The study area can not be an exception. The platea will come, may be, little later as the adoption of New Agricultural Strategy took place quite late in the area.

(b) INCOME

Thanks to the adoption of New Agricultural Strategy, which has enabled the farmers to get increased farm income. But there again the problems have been created. Size availability, etc. of New Agricultural Strategy has not made it uniformly effective and
advantageous. Some sections of farm population have benefitted more than the others. Some regions have benefitted more and some crops have benefitted more. This has led to uneven import of New Agricultural Strategy on income size-wise, region-wise and crop-wise. The problem of New Agricultural Strategy is, therefore, not that it is not income augmenting but that it is differential in its impact. Large sized affluent farm owners have certainly benefitted more owing to number of advantages that they enjoy over their counterparts. They have better access to means, quicker grasp of things and higher capacity of risk-bearing and all this puts them ahead of less affluent farm owners. It is observed that in the wake of New Agricultural Strategy big farms quickly get adjusted to new technological innovations whereas the small and marginal farms find themselves far behind. Eventually they dispose of their holdings to join the large reserve of rural unemployed.

The New Agricultural Strategy has thus led to further accentuation of income inequalities in the countryside. This goes contrary to our basic economic policy that seeks to promote a more egalitarian system of society. Income differentials have also widened.
between different regions. The Punjab, Haryana, Maharashtra and Western U.P. for example benefitted several times more than Bihar, Jammu and Kashmir, Orissa, Assam and so on.

Some crops are more responsible to modern inputs and push up income higher than in other cases. These imbalances in income distribution have sharpened the income inequalities and given rise to a serious problem of how to even out the income benefits of New Agricultural Strategy so as to reduce income inequalities in the farm population.

(d) EMPLOYMENT:

The problem of unemployment is one of our formidable problems and any development strategy has to be weighed against its impact on employment. The adoption of New Agricultural Strategy has led to heated controversy on this issue. There are a large number of studies suggesting that New Agricultural Strategy has augmented the labour utilisation and an equally large number that suggest to the contrary. There are, however, no studies suggesting that New Agricultural Strategy is employment neutral. An examination of the research
work done in this area does not lead to any definite conclusions. On the basis of the present research work and similar researches conducted earlier, we found that in order to make a clear cut idea about the employment prospects of New Agricultural Strategy, we shall have to examine it component wise. A broad classification is done between divisible technology and mechanised technology. Under divisible technology are included irrigation, High Yielding varieties seeds, weedicides and pesticides and small tools and implements. This helps in augmenting the employment and also contributes to the reduction in income inequalities. Increased use of irrigation, High Yielding variety seeds, weedicides and pesticides and small tools and implements. This helps in augmenting the employment and also contributes to the reduction in income inequalities. Increased use of irrigation, High Yielding variety seeds, weedicides and pesticides and small tools and implements. This helps in augmenting the employment and also contributes to the reduction in income inequalities. Increased use of irrigation, High Yielding Variety seeds, pesticides etc depends the farm operations besides necessitating more scientific and efficient management and these directly contribute to labour deepening in agricultural than labour sowing. Such inputs, therefore, on the whole, produced a positive impact on labour employment. On the other hand mechanical inputs such as big tractors, harvest combines, threshers and similar other inputs have definitely adversely affected the labour employment in agriculture. One of the
research investigations has revealed that there can be a reduction of 1.6 to 30.7 percent in labour employment on tractor operated farms compared to bullock operated ones. The bullock labour has considerably gone down owing to the use of new farm technology. However, judicious use of mechanical power may not affect adversely on the employment of human and animal labour.

The New Agricultural Strategy has undoubtedly reduced the bullock labour. It has however, not created any serious problems in this regard. In fact substituting mechanical inputs in place of weak and inefficient bullocks have improved the performance of the farm sector. Impact on human labour employment has to be viewed carefully.

(d) **ACCEPTABILITY:**

New Agricultural Strategy has not received universal acceptance which is inhibited by several factors, in particular, regular supply of some vital inputs such as irrigation and chemical fertilisers. The production and productivity are closely related, primarily, to irrigation and then, in general, to the
availability of modern inputs. Irrigation is an important factor in determining the acceptability of New Agricultural Strategy in different regions and in different areas with the same region. Since only 30 percent of the cultivated area is, even now, under irrigation, the remaining 70 percent will obviously reluctantly come under New Agricultural Strategy. Even of the 30 percent irrigated area, the small and marginal farmers face hardships in accepting New Agricultural Strategy. This is not because of the fact that they do not understand their inability to have control over the modern inputs. The traditional village structure - caste dominated or class dominated - is still operative and eats into the development potentialities of these hopeless farmers. It is distressing to note that rich rich farmers get subsidised input through small and marginal farmers by financing them initially and then selling the same inputs on exhorbitent rates which makes it prohibitive for them to acquire basic materials and give practical shape to New Agricultural Strategy. These factors have, therefore, come in the way of spreading the New Agricultural Strategy on universal basis even among farmers having assured irrigation.

Lack of education, ignorance and ineffective
extension service also contribute to the poor and limited expansion/acceptance of New Agricultural Strategy. Indifferent attitudes of village officials, their limited involvement in the overall developmental exercise and lack of administrative willpower are some other reasons which keep the New Agricultural Strategy away from the recipients. The acceptance has, therefore, been restrictive in character. The problem, thus, remains to create conditions conducive to universal acceptance of New Agricultural Strategy in order to make it uniformly effective.

SOCIAL IMPLICATIONS:

These implications may be studied under the following sub-heads.

1) Class tensions.
2) Caste tensions.
3) Socio-cultural implications.

Indian agrarian relations in a class framework are generally made up of the following classes. Landlords who are few in number and proportion do not engage in self cultivation and live by exploiting the peasantry. A bigger proportion than the landlords may
be designated as rich peasantry. A still bigger group of the agrarian population is that of middle peasants who manage to stay marginally above the poverty line and are often haunted by the effect of poverty. The largest group of the agrarian population is comprised of poor peasants and agricultural labourers.

Notwithstanding the neutrality property of New Agricultural Strategy it has produced differential impact on different classes due to a large number of exogeneous factors which may not fit in mathematical model building of the type need in such studies. Landlords, interested in exploitative tradition and the life style of the feudal society have successfully thwarted the generous efforts being made in land reforms and stalled all reformative measures to improve the lot of the rural poor. Stimulated by popular upsurage and government incentives, the poor have tried to strive their claims on land. They have been telling for unknown times and this has led to frequent tensions and bloody classes quite often. Rich peasants have tended to exhibit the traits of landlords as their incomes grow due to adoption of New Agricultural Strategy and have made things harder still for the poor and middle peasants.
leading at times to distress sale of small holdings temporarily, though, to begin with but permanently eventually, by clever mannering by the richer classes. This has also contributed to social tensions in the wake of New Agricultural Strategy. Jammu and Kashmir may, however, not be treated as a typical case in this direction because of its remarkably successfully implementing the landreforms twice so far during the post independence period. Some reflections, however, can not be overlooked when these areas are visited and surveyed.

New Agricultural Strategy can not be studied in isolation of these reflections. It is the whole game of things that has to be transformed for New Agricultural Strategy to produce even and healthy, effect on rural society. Many a times these realities, rooted deep in our village society, remain concealed for want of reliable statistics and dearth of indepth socio-economic studies. This state, in particular, has not witnessed many sociological studies that could throw hight on these hidden malice in our rural society. Assuming that landreforms legislations will take care of everything is not right. These legislations even if implemented honestly, are not going to ensure land to the landless.
agricultural labourers nor the land poor draft peasants. They are at best another step in the drive of the big bourgeois led government to widen its rural land lord base, by getting land released from the present few and make it available to a large number of the growing new rural rich the democratic movement can not rely on the promised legislation or on the present ruling classes. 1

The land monopoly continues in one or the other form and class tensions persist. In Jammu and Kashmir, for example orchards have been left out of the recent land reforms leading thereby to large scale conversion of crop lands to orchards in order to escape the land reforms. All classes of rural society could not do so and hence the tensions. An improved agricultural technology must, therefore, be accompanied by an improved agricultural policy backed by strong political will and an honest and efficient administration.

Caste has been a dominating factor in rural social structure and it has, in general, been in line with the economic structure in our villages. Higher social castes are synonymous with richer peasants and land lords. With the introduction of New Agricultural Technology...

Strategy, higher castes have suddenly become conscious of the profitability of farming and have tried to evict tenants by force, on the one hand, and encroached upon more lands, on the other hand. This has further strained the relations between castes and led to many unpleasant situation in the recent years. In order, therefore, to even out the benefits of New Agricultural Society the interests of lower casts have to be effectively safeguarded.

Universality of social inequality is established beyond any doubt in our rural society and social distinctions in caste-dominated societies are strongly associated with the ownership and control of land. Social thought quite often conflicts with economic policies. High casts understand it well that land should belong to those who till it but realising that losing control on it in the wake of New Agricultural Strategy would undermine their social position in the society they often hesitate to see logic and behave accordingly. Making New Agricultural Strategy an instrument of rural transformation shall therefore, have to be backed by an all round strategy touching all aspects of rural life.

New Agricultural Strategy has brought about some socio-cultural changes in the rural society. It has
generated greater confidence among the poor peasants and it has also brought about a change in the outlook of richer peasants through urban contact, mass media and education. While rapidly safeguarding their economic interests, they do exhibit a liberal attitude in so far as social relation are concerned. There are greater social relations, interdinning, group activities and the like. There, however, has to be change of hearts before these liberal attitudes take solid roots in the rural social outlook.

**BIOLOGICAL IMPLICATIONS:**

These implications may be studied under the following heads:

1) Effects on soil quality

2) Effects on useful bacteria

3) Other associated problems

Though New Agricultural Strategy be still not covered all the cultivable areas, more particularly in our country but it can safely be informed from the experience of other countries that it has biological implications as well. Some recent American studies have shown that farmers are shifting back to organic farming and with careful planning and scientific management
they have observed that there are no significant differences in output compared to that of organic farming.

A disturbing feature of New Agricultural Strategy to which there is quite some evidence from American experience is that an adequate dose of chemical fertilizers adversely affects the soil qualities. It has been observed that the upper crest of the soil becomes so hard that it almost turns barren. Every year a new tractor is to be designed that will dig deeper and bring out the inner soils to raise the crops. Year after year, the depth of the barrenness of the soil's crest increases and poses new problems. It loses the moisture retention property and does not hold rain water which has led to more problems in turn. On the upland rain water goes waste hundred per cent and on the low lands it causes floods and damages the standing crops besides bringing other adverse effects with it. More serious is the problem of soil biology. If every additional dose of chemical fertilizer deepens the barrenness of the soil, how long shall we go on digging deeper and deeper is a big question? What will happen to soil fertility eventually is yet another important question which shall have to be examined carefully.
The upper layer of the soil is supposed to feed some useful bacteria for the crop cultivation. As this layer becomes hard, these useful bacteria are killed and the crops suffer damage accordingly. It has also been observed that chemical fertilizers, pesticides and germicides are harmful to the growth of these bacteria. Over a number of repeated applications, the soil loses some of its inherent qualities which may not be recouped by more application of chemical fertilizers. This can have serious implications which the soil scientists shall have to investigate thoroughly before it is too late.

Recently it has been found that new defects develop in the crops such as various types of rusts which resist even the strongest of pesticides. Scientists are busy in crop genetic research to develop new genes by using bio-chemical synthesis in order to overcome the problems of rust etc.

All these biological problems are not so manifest in this state as yet since the adoption of New Agricultural Strategy took place late and intensity is also not as varying too.

POLITICAL IMPLICATIONS

With the introduction of New Agricultural Strategy, the new political problems have raised their
head. Intra-regional as well as inter-regional political tensions have been found to be mounting during
the recent years. As the adoption and acceptability of
New Agricultural Strategy is conditional by several
other factors not identical in all regions some regions
have prospered faster and better than the others. This
has led to further accelerating of the regional economic
inequalities. Some regions not willing to share their
affluence with others may lead to serious political
implications which have to be foreseen and taken care of
at the earliest. Because of land and property monopoly
still existing in the countryside, a section of peasants,
in particular, has become quite affluent. There being
no agricultural income tax, on the one hand, and a
large number of subsidies on inputs, on the other hand,
the development contribution from this affluent section
is practically nil and in order to keep up the pace of
progress in agriculture, the development funds have to
be diverted from other sectors, to meet the greater
subsidy requisits of agricultural sector. In the Punjab
it has been observed that revenue accruing from
irrigation (for example) is much less than the pay bill
of the staff required for the maintenance purposes.
This will have its own implications which shall have to
be examined without further delay.
The foregoing discussion have made it clear that New Agricultural Strategy has not been without problems. While on one side it has opened new and rich avenues of enhanced agricultural output, it has on the other hand, created a number of problems which have to be investigated into thoroughly and solutions found to them before it becomes too late. In some Western countries, these problems have already been noted with concern and new researches are going on to tackle these problems and keep up the promise for the future.

While examining the future prospects of New Agricultural Strategy in India the same shall have to be viewed in a overall perspective. In order to continue reaping richer and varied harvests in future, a few safeguards shall have to be taken right now. These safeguards shall push off, if not stall altogether, the reverse trend of agricultural production. In our country, in general, and in our state in particular, the New Agricultural Strategy should have a great future still full of promise and potential. Only a fraction of our cultivable land is under NAS and there is tremendous scope for its expansion. New researches should provide a break through in the adoption of New Agricultural
Strategy in dry and hill areas. Since even now the unirrigated area accounts for only 70 percent of agricultural lands, there can not be much progress in agricultural unless New Agricultural Strategy is made applicable and adoptable in dry areas. A significant breakthrough is required in seed fertilizer technology that will suit the rainfed areas. On the other hand, more efficient and scientific water management shall have to be promoted to avoid leakages and other wastages of water. That will help bringing in more areas under artificial irrigation.

Hill farming has so far not received adequate attention. A suitable farm technology shall have to be evolved. In any hill area development strategy, agriculture sector shall have to be given proper attention. The problems and prospects of agricultural development in hill areas are different from those of plain areas. Crop enterprises may not hold key to agricultural development, instead we may strengthen non-crop farm activities for speedier development of hill areas.

Future prospects of hill areas may be viewed in the light of the following:
Research and innovation hold key to agricultural development. Shultz puts special emphasis on research for agricultural transformation. The main sources of the high productivity of modern agriculture are modern material inputs and farm people with modern skills. The material inputs have to be so combined that it can be tried in poor peasant economies. Several adjustments may be called for and at times even the farm may have to be changed to make these inputs usable under the conditions prevailing in UDCS. Development of Modern material inputs elsewhere provides useful information and knowledge which goes into making the research fruitful in the development of adaptable and acceptable varieties of these inputs for poor countries.

Scientific and technical knowledge plays a crucial role and has to be developed fast and in abundant measure. However, the development of research alone is not enough; it has to be socialized in order to seek its mass acceptability and operational feasibility. A large number of competent scientists and adequate amenities for experimental work have to be provided for to keep the prospect of New Agricultural Strategy bright in the future.
EXTENSION SERVICES:

These services have to be provided in an ample measure to translate experimental work into operational reality. The full benefits of research and innovation shall not be realised without adequate backing of extension net work. A national net work of extension services carried out by the band of trained and dedicated workers will hold a great promise for New Agricultural Strategy in the future. With the passage of time, the speed with which innovation and research will take place shall increase fast and in order to benefit from that the extension services have to be equally fast and effective. Lot of research will be done in crop genetics, disease control, product quality and the like and if it does not reach the recipient quickly and the time this research may not yield the fruit expected of it. For a vast country like ours, a large army of extension workers is required to take New Agricultural Strategy to full fruition in future.

FARM MANAGEMENT

Farm management is of considerable importance in modern agriculture. The farmer has to learn to manage his limited and expensive inputs, properly in
order to optimise his returns. Proper combination of seeds, fertilizers, pesticides irrigation is of crucial importance in furthering the benefits of New Agricultural Strategy. Water management is very important. Even at present a substantial quantity of water is lost due to mismanagement which has to be avoided. Crop combinations, inter-culture and right choice of seeds and fertilizers will go a long way to keep our hopes alive in the future. Functional education common facility centres and short duration rural training programmes have to be strengthened.

Suitable Price, Tax and Subsidy Policy

The supply response of agricultural output in the future shall greatly depend on an overall agricultural policy. To the extent supply response is stimulated, farmers will go all out to use New Agricultural Strategy most efficiently. They will take interest in education, extension and management in order to make best of the new farm technology. Planning of agricultural policy is, therefore, very crucial. A careful blending of prices, taxes and subsidies will go a long way in the adoption and acceptance of New Agricultural Strategy in the future.
For determining these parameters, a thorough exercise shall have to be made in the cost of production from time to time. There should be selective subsidies on the one hand and careful revenue maximisation on the other. Prices should be used as an instrument of maximising the returns of the farmers as well as of the government. Since agriculture is the primary and predominant sector of our economy, it has far-reaching consequences in other production sectors and, therefore, price-subsidy policies have to be growth oriented besides being conducive to agricultural development. Government may have to think on agricultural income tax to mobilise the farm sector affluence for the national development.

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