SUMMARY AND CONCLUSION

The present study entitled "A study on land consolidation and its economic consequences on farming in district Jaunpur (U.P.)" was undertaken during the year 1988-89 and 1989-90. The study aimed at making comprehensive study on land consolidation in one of the economically backward areas, for developing sound land policy that will help the decision makers to draw more realistic plan for raising the production and income in farming from consolidation of holding. The appropriation of land as a means of production is of vital interest to the various classes and group of society. This is why, even today, several economic and socio-political tasks related to land are being promulgated by the Government in the country. The study was conducted with the main objectives of studying the changes which to place in socio-economic structure of the benefiting sample holdings because of consolidation. The study also aimed at examining the impact of consolidation in raising level of production, productivity and income of the sample farm during post consolidation period.

The methods adopted for conducting present study consisted in the random sample of 100 cultivators from 10 villages of Khuthan block, district Jaunpur, U.P. A multistage stratified purposive random sampling technique was used to select the domains at the respective stages, in order, being the block, the village and the cultivators. The cultivator were selected under four size groups, namely marginal, small, medium and large farms. The cultivators under each size group was kept in proportion to their number in the universe of 10 villages. For assessing the impact of land consolidation
the evaluation is done on pre- and post criteria. The study focusses the returns to size as a whole as well as increased level of production/productivity, income and extent of employment on consolidated farms.

The general economy of the district Jaunpur considered into account the total cultivated area which was 73.25 per cent of the total reported area (400274 ha). The percentage of the double cropped area was 34.54 per cent, which was constantly stagnant since last two decades, similar to irrigated area being 55.85 per cent. In case of block under study i.e. Khuthan, out of the total reported area of (19544 ha), 74.03 per cent was under cultivation. The percentage of double cropped area to the total cropped area was reported to be 38.17 per cent, while 55.85 per cent of the total cultivated area was under irrigation. The land put on non-agricultural use was 1984 ha (9.43 per cent) of the total reported area, thereby indicating that the land use intensity in the block can be considerably increased by qualitative improvement of land. The district as well as block both are magnifying by public/private tubewell or pumping sets networking.

An historical analysis of land consolidation revealed that the land consolidation is a major component of land reforms programme in the state. The land consolidation programme has been necessitated due to increasing trend of landlessness and fragmentation of holdings. The steps involved in land consolidation in the study area were being followed according to "U.P. Manual of Land Consolidation". The steps include: declaration and notification regarding the land consolidation; surveying the land; revision and correction of maps and
records amendments, provisional consolidation scheme; enforcement of consolidation scheme and; finally closing consolidation operations.

As regards to number of cultivators' plots per holding, pertaining to land fragmentation is concerned, the study showed that, on an average, the number of plot per household is declined 61.58 per cent due to land consolidation. Almost in all villages, the proportion of the number of plot varied between 26-44 in pre-consolidation period, which subsequently reduced to 11-18 in post-consolidation period. The causes of high land fragmentation incidence were high landman ratio, lower irrigation intensity, and limited scope for spatial diversification (due to homogenous nature of soil) in the study area. The land parcel number is also reduced to 1.14 parcels from 3.67 parcels during the corresponding periods of land consolidation. The mean fragmentation index analysis showed that the average size of farm per plot increased 0.31 ha to 0.81 ha during corresponding periods, thereby indicated the plot size of farms have raised up after consolidation. The coefficient of correlation between number of plot/ha and size of holdings reflected that they were negatively correlated and with increase in farm size the number of plots per ha decreases after consolidation, while the coefficient of correlation between holding size and number of plots/holding came to (-0.8911 in pre-consolidation and -0.760 in post-consolidation period), indicates that they were negatively correlated with increase in size of holding the number of plot/holdings decreases.

The study of farm structure showed that the average size
of holding is marginally reduced from 1.13 ha to 1.12 ha after consolidation. The average size of small, medium and large size of holdings also reduced from 1.05, 2.11 and 3.29 ha in pre-consolidation period to 1.04, 2.10 and 3.28 ha respectively in post-consolidation period. The percentage of total cultivated area to the entire sample remained, more or less, same in both periods. The distribution of operational area was found to be uneven as 49 per cent marginal farms occupied only 14.66 per cent, 11 per cent big farmers occupied 32.15 per cent of the entire area.

An analysis of irrigated area shows that out of 112.56 ha, the irrigated area to total cultivated area has been increased from 52.11 ha in pre-consolidation period to 84.75 ha after consolidation, thereby indicated that the investment on farms for irrigation development was became possible positively after land consolidation.

The average number of agril. workers per farm came to 1.44 in post consolidation period which was found 1.73 earlier (pre-consolidation period). On per ha basis, it reduced from 1.54 in pre-consolidation to 1.28 per ha during post-consolidation. Thus, the reduction in physical number of agril. workers from pre-consolidation to post-consolidation period became possible due to prevalence of economes to scale on farm after consolidation.

As regard the live-stock position, it was seen that, the average number of draught cattle per farm and per ha was came to 1.75 and 1.55 respectively in pre-consolidation period which has been reduced to 1.11 and 0.99 in post-consolidation period respectively. The number of milch animal per farm tended to increase
from 124 (pre-consolidation) to 136 (post-consolidation period). The number of milch animal per holdings is also increased from 1.24 to 1.36 during corresponding periods. On per ha basis it also increased in same order during corresponding periods.

It is revealed from study that non-land assets was drastically increased after consolidation on farms. The number of desi plough was substantially decreased in pre-over-post-consolidation, while improved plough were introduced in larger amount after consolidation. The level of investment in fixed capital indicates that amount investment in fixed capital per farm came to Rs.109320.36 in pre-consolidation, which increased to Rs. 118805.60 in post-consolidation period. However, increasing trend with increase in the size of farm was observed in both periods. On per ha basis the investment in fixed capital, on an average, came to Rs. 97121.65 and Rs. 105698.22 during the corresponding periods on the sample farms. The value of land, on an average accounted for highest (87.69 and 86.15 per cent in both periods) in the total value of fixed investment followed by live-stock (5.52 and 4.38 per cent).

An analysis of economics of land consolidation revealed that the Government has divided the whole consolidation work in different steps on the time bound basis, the statement of expenditure has been made on per ha basis. In addition to this 10 per cent additional cost added in the amounts which was calculated for the implementing the project. These estimates were made for district as a whole. In this way, the per ha cost of consolidation has been estimated by actual amount of money which expended. This was divided by
total area consolidated. The procedure and methods, which are already given in consolidation manual published by the Government, has been followed in the study area. However, these were three categories of farmers from whom estimates were made and collection is performed:

a) Collection are made from those farmers, whose holdings has been changed or consolidated.

b) All other farmers.

c) Those farmers who are affected by consolidating holding due to rectangularisation. The charges were fixed and varied according to these three categories. The costs of land consolidation have been charged from described three categories of farmers and are given as under:

i) for category 'a' the consolidation cost was Rs. 36.62/ha.

ii) for all farmers except category 'a', the charges were made @ Rs. 5.00/ha.

iii) the farmers having rectangular shape of farms were charged by Rs. 2.96/ha.

Thus, the amount and mode of payment which are very feasible, are the reflection of public investment despite of huge cost was incurred on salary and travel expenditure of personnel involved in land consolidation programme in study area. As regards to farmers' perception towards benefits and costs over land consolidation, the studied showed that land fragmentation increases travel time and greater problem in supervision. Some of the farmers viewed that fragmentation is a cost persevered, this has created disincentive to invest for permanant basis like irrigation. For the sake of benefit, some farmers considered that scattered plots are beneficial from the risks view point and in view to opportunity to exploits soil
variation within the village for which they usually diversified their crop production programme. These are the intangible benefits and costs according to farmers perception towards land consolidation programme.

So far result of land consolidation on land use pattern in the sample villages is concerned, the study showed that the "net sown area" in the sample villages has registered on increase of nearly 5.5 per cent in post-over-pre-consolidation periods. The percentage of current and other fallows were declined nearly 16.58 per cent after the consolidation. The average size of plot increased from 0.31 ha in pre-consolidation to 0.86 ha in post-consolidation period, showing an increase about 1.77 per cent in their sizes as discussed earlier. The land use pattern of the sampling holdings showed that, as a result of consolidation of holdings, the proportion of "net sown area" to total area registered an increase about 7.61 per cent. The percentage of current and other fallow land to sample household declined from 12.46 per cent in pre-consolidation to 10.29 per cent in post-consolidation period. The percentage area under "not available for cultivation" is also declined from 3.81 to 3.27 per cent, despite an increased in area into village sites and roads during corresponding period.

The analysis on gross irrigated area of the sample household in the study village, shows an increase of 62.87 per cent due to land consolidation.

The grossed cropped area increased from 262.18 ha in pre
consolidation period to 297.35 ha in post-consolidation period. This increase was accounted by 13.41 per cent. The percentage area under High Yielding Variety to the total cropped area is also increased from 43.07 per cent in pre-consolidation period to 56.92 per cent after consolidation. The area under H.Y.Vs Paddy to total cropped area increased considerably, while the area under H.Y.Vs wheat remains same and stagnated during corresponding periods.

Analysis of cropping intensity showed, that on an average, the cropping intensity increased by 31.63 per cent after consolidation. The cropping intensity on small size of holding came to 63.79 per cent followed by medium size was 36.96 per cent. Thus, it may be concluded that the sustainability of Green Revolution has become possible after land consolidation on the sample farms.

As regards the cost of cultivation, the study shows, that due to fragmentation of holdings prevalent in pre scheme period, by and large the cost of cultivation was higher as compared to post-consolidation period. Further the cost of cultivation was higher because more human labour and bullock labour were required than that of post-consolidation period. The overall reduction in the cost of cultivation was 5.83 per cent. However, higher costs were incurred in Rice, Potato, Sugarcane, Mustard which occupied relatively larger area during post-consolidation period.

An analysis of gross income from different crops showed that it was higher during post-consolidation due to lower cost on one hand and higher productivity on the other. Over all percentage
increased in gross income after land consolidation came to 10.04 per cent. The overall increased in value of net income obtained from different crops was 98.75 higher after consolidation because of reduction in cost, on one hand and increase in productivity and production on the other.

As regard the productivity of different crops, the study showed that there were dramatic increased in yield almost in all crops after the consolidation of land over pre-consolidation period. This indicated that the consolidation of holdings is an instrument of development as it reforms not only agrarian structure but also provides the condition for application of low cost technology on sample farms.

The unit cost of main products of different crops in post-consolidation period was lowered by 46.76, 19.33, 24.81, 21.73, 27.72, 30.67, 41.20, 45.89, 13.34, 10.84, 34.04, 21.73, 27.72 and 46.76 per cent in case of Maize, Jowar, Arhar, Mung, Urd, Paddy, Wheat, Mustard, Potato, Pea, Sugarcane, Summer Maize, Summer Mung Urd and other such crops respectively.

As regard the measures of farm profit of the different crops is concerned, the study indicates that, on sample farm as a whole, on an average, the net income increased from Rs. 317.87 per ha in pre-consolidation to Rs. 556.67 per ha in post-consolidation period. The average value of family labour income and farm business income also increased from Rs. 654.80 and Rs. 556.80 in pre-consolidation period to Rs. 782.59 and Rs. 1262.56 per ha in post-consolidation period respectively. The average input-output ratio came
to 1:1:64 in post-consolidation period as against 1:1.30 in pre-consolidation period.

On per ha basis, the absorption of human labour came to 94.04, 50.88, 55.30, 94.77, 59.30, 60.30, 104.36, 106.36, 83.25, 206.26, 53.30, 54.30, 153.48, 95.04, 60.30, 59.30 and 94.05 days in case of Maize, Jowar, Bajra, Arhar, Mung, Urd, Paddy, Wheat, Mustard, Potato, Gram, Pea, Sugarcane, Summar Maize, Summar Urd, Summar Mung and other crops respectively in pre-consolidation period, which reduced by 8.3%, 2.87%, 2.33%, 5.05%, 4.97%, 13.29%, 16.80%, 2.51%, 5.58%, 5.56%, 4.33%, 8.29%, 4.97%, 5.06% and 8.40 per cent for corresponding crops respectively in post-consolidation period.

The extent of draught labour absorption clearly indicates that like human labour, the absorption of bullock labour per ha in different crops has gone down during post-consolidation against pre-consolidation, the decreases in bullock labour absorption varied from 8 to 20 per cent in different crops.

The consumption of fertilizer per ha in different crops also increased considerably after consolidation because of higher irrigation facilities developed by the sample farmers after consolidation on one hand and greater adoption of modern farm technology on the other. The percentage increased in fertilizer use varied from 6.62 per cent in mustard to the highest level of 71.81 per cent in wheat fallowed by 69.83 per cent in Rice, and thus all increased came to 14.66 per cent.
As regards the level of irrigation in different crops, the number of irrigation in all the crops was considerably higher after consolidation. This increase was more significant in Wheat, Rice and Sugarcane due to installation of owned irrigation structure on consolidated farms.

As regards the plant protection measure, shows that the use of insecticides/pesticides in physical term and expenditure on insecticides/pesticides was almost about 200 per cent more in Paddy, Wheat and Potato production after consolidation.

An analysis of production function revealed that returns to farm size as a whole the coefficients are to be found constant after consolidation of farms. In case of returns to scale shown an increasing returns to scale trends were found in both periods. Thus, it may be concluded that the contribution on land productivity in consisting to other resources on consolidated farms was significant. The one-to-one relationship between returns to size and returns to scale, analysis shows that all most in all cases the economies to scale were found in application of various resources use on farms after consolidation.