Chapter – VIII
Findings and Suggestions
1. Introduction

The previous chapter deals with the saving and investment behaviour of the respondents in the study villages. In this regard this chapter deals with the findings and suggestions of the present study. Before entering into the major findings of the study some of the important issues are discussed as follows. During the late eighties and early nineties, a concern has been raised about the falling share of public sector capital formation in agriculture. In this view various studies states that the declining trend of public sector capital formation in agriculture and its impact on GDP.

The other kind of studies said that there is no relationship between capital formation and agricultural growth; and a few studies dealt with the main reason is that agricultural growth depends upon the efficiency of capital use and availability of capital. Additionally some of the studies explained that there exists complementaritity between public and private capital formation without giving sufficient reasoning. Hence the study tries to assess the relationship between capital formation and agricultural productivity and composition of capital formation in agriculture and saving behaviour of the respondents also are discussed in detail.

The study has been classified into eight chapters. The first chapter deals with the brief introduction of capital formation and its role in Indian economy. In this, the present chapter focuses on the various concepts such as low rate of
capital formation, components of capital formation, and the trend of public and private investment in agriculture. The second chapter illustrates the concepts, objectives and methodological design of the present study. This chapter also explains that the broad objectives, research issues and gaps. The third chapter reveals the review of literature. The fourth chapter briefly explains the profile of the study area. The fifth chapter sums up the macro analysis on capital formation. Productivity levels and capital formation are explained in Chapter Six. Saving and investment behaviour of the respondents in the field area are explored in Chapter Seven. The eighth chapter deals with the findings and suggestions of the present study. In this view the major findings of the study are as follows (chapter wise).

2. Major Findings of the Study

The first chapter clearly explains the issues of capital formation, significance of capital, types and functions of capital, process of capital formation, and theoretical background of the capital formation under classical and modern economists view and causes of low rate of capital formation of the present study. This chapter explains also the significance of capital formation and chapter scheme of the present study.

The second chapter illustrates the various concepts like estimation of capital formation, items of capital formation, GCF in agriculture, irrigated area, irrigation intensity, cropping pattern, cropping intensity, production and yield,
research issues and gaps, objectives, hypotheses and methodological design of the present study. This chapter clearly points out the sources of data, study area, period of the study, sample size and tools for analysis of the present study. In addition to this significance of the work and limitation of the study also are discussed.

The third chapter clearly explains the various previous studies related to capital formation. Previous issues are classified into five broad sections such as capital formation and agricultural growth, composition of capital formation, capital formation and saving, capital formation and institutional credit and general issues of capital formation in this chapter. In fact the previous studies also provide due help to take forward the present research in right perception.

The fourth chapter emphasizes the profile of the study area. This chapter explains the profile of the district, taluk and study villages of the present study. It reveals the picture of the study area such as area background, history of the district, revenue administration, agriculture and allied sectors, geographical profile, land use pattern, land classification, irrigation sources, livestock status, agricultural machineries and cropping pattern. Moreover this chapter gives a picture of the irrigation sources, agricultural machineries, infrastructure facilities like marketing facility, rural roads, banking institutions
and fertilizer shops in the study area. In addition to this drinking water facility, sanitation and SHGs of the study area also are pictured in the present chapter.

The fifth chapter explains the macro analysis on capital formation. In particular it focuses on the relationship between capital formation and agricultural growth, which includes the area, production and the yield of foodgrains, major commercial crops and oilseeds. The major findings of the present chapter are as follows:

- During the study period the Gross Capital Formation in agriculture marginally decreased from 10.9 to 10.7 per cent growth rate in India (pre and post liberalization periods).

- The trend of public investment was low compared to private investment (i.e., 6 and 14.1 per cent respectively) in the pre liberalization period. On the other hand it was almost the same (i.e., 10.1 and 10.9 per cent in Koviloor and Varanavasi villages respectively) during the post liberalization period.

- Area of foodgrains also declined during the study period. During 1980-81 the area of foodgrains cultivation was 126.67 M.Ha. In the year 2007-08 it declined to 124.50 M.Ha. But CAGR results show that there is no change in the area of foodgrains cultivation during the pre and post
liberalization periods (i.e., 1 per cent in pre and post liberalization periods).

- During the study period the trend of foodgrains production (all crops) in India has declined. The production of rice declined from 3 to 1 per cent; wheat from 4 to 1 per cent; coarse and cereals from 11 to 2 per cent and pulses from 3 to 1 per cent. Thus it is concluded that positive relationship existed between capital formation and food grains production during the reference period.

- While in the year 1980-81 the yield of foodgrains was 1023 Kg/Ha; and it increased to 1854 Kg/Ha in the year 2007-08. CAGR result reveals the declining trend of foodgrains yield during the study period (i.e., from 3 to 1 per cent). Perhaps this is due to the fact that the yield enhancing techniques would have influenced. Hence, the result found the positive relationship between capital formation and the yield of food grains.

- The area under major crops increased slightly. In the year 1980-81 the area of oilseed cultivation was 17.60 M.Ha., and it increased to 26.54 M.Ha., in the year 2007-08. CAGR results illustrate that there is no change in area under major commercial crops during the reference period. In case of sugar cane, it was 2.67 M.Ha., in 1980-81 and it increased to 5.04 M.Ha., in 2007-08. Nevertheless other commercial
crops (like sugarcane, tea, coffee, cotton and jute mesta) do not show any major change during the study period.

- The production of major commercial crops like oilseeds, sugarcane and coffee declined from 6 to 2 per cent, 4 to 2 per cent and 3 to 2 per cent respectively. However, the production of tea, cotton and jute mesta showed an increasing trend. But tobacco showed drastic decline and it is a negative growth rate for the study period.

- During the study period CAGR results show that the yield of sugarcane drastically increased from 1 to 129 per cent; coffee increased from 2 to 251 per cent; and tobacco increased from 2 to 178 per cent. However, the growth rate for other crops shows a declining trend for the study period.

- Area of oilseeds also declined during the reference period. CAGR result shows that area of oilseed cultivation declined from 3 to 1 per cent under the pre and post liberalization period. Hence, there is a positive relationship between capital formation and area of oilseed cultivation.

- A CAGR result shows that the oilseed production has also declined from 6 to 3 per cent during the reference period. Hence, there is a positive
relationship between capital formation and oilseed production during the study period.

- In addition to this CAGR result reveals that the yield of oilseed decreased from 3 to 2 per cent. So, there is a positive relationship between capital formation and yield of oilseed during the reference period.

- During the reference period the relationship between capital formation and institutional credit is negative (i.e., 9 to 17 per cent) under the CAGR result.

- In the case of Gross Domestic Saving CAGR results explore that there is no change between pre and post liberalization periods.

The sixth chapter deals with the productivity levels and capital formation. In this manner general profile of the respondents like age, social status, educational status and the details of family members' details are discussed. In addition to this farm size, land particulars, irrigation sources, investment on livestock, land, various crops investment like paddy, sugarcane, groundnut, maize, corn, agricultural machineries, fertilizers and irrigation sources are clearly summarized. The major findings of the chapter are as follows:
Most of the respondents (76 and 51 per cent in Koviloor and Varanavasi villages) come under the category of MBC. 21 and 22 per cent of the respondents come under the classification of SC in both the villages respectively. Remaining respondents come under the category of BC in both the villages.

A lion's share (44 and 49 per cent in Koviloor and Varanavasi villages) of the respondents comes under the educational status of middle school. Only single digit (2 and 1 per cent) of the respondents comes under the category of higher education of the study villages respectively.

The study finds out per household family size is around 4 to 5 in both villages. In addition to this most of the respondents (51 and 55 per cent in Koviloor and Varanavasi villages) come under the income group of below Rs.25000/-. On the other hand only a small number of the respondents (8 and 7 per cent in Koviloor and Varanavasi villages) come under the income group Rs.50000/- to Rs.75000/-.

A lion's share (46 and 42 per cent) of the respondent comes under the classification of marginal farmers in both villages respectively. Only a low share (5 and 2 per cent) of the respondents comes under the category of large farmers in the study villages respectively. The study finds out per household land in the study villages (i.e., 2.60 and 1.11 acres).
Borewell is the major source of irrigation in the study villages. The second place goes to river irrigation in the study villages. One third of the farmers do not obtain irrigation facility in Koviloor village. On the other hand one fifth of the respondents do not obtain irrigation facility in Varanavasi village.

It is found that the livestock population declined during the study period in the study villages. In the year 2007 the livestock population (per household) of Koviloor village was around 2. In the year 2007 the livestock population (per household) of Varanavasi village was around 10 and it declined to around 3 in the year 2008. The study reveals that investment on per household livestock declined in terms of quantity and value. On the other hand investment on per household livestock drastically declined in terms of quantity and value declined from Rs.3186 to Rs.2046 in Varanavasi village and it was declined from Rs.5620 to 4707 in Koviloor village. The above result was tested with the use of Paired Sample ‘t’ Test. It shows that the investment on cows, goats and investment on cattleshed are highly significant (i.e., 0.000) for the study period except buffaloes.

In addition to this, the study focused on the Investment on cattleshed which is shown as highly significant (i.e., 0.000 and 0.005 respectively) for the study area and period. But it was not significant (i.e., 0.037) for
the study area in 2008. In the year 2008, the investment on cattleshed among the size classes of the farmers are highly significant (i.e., 0.000). In addition to this investment on cattleshed and godown (per household) increased in Koviloor village and it was declined in Varanavasi village.

➢ During the reference periods, (2006-07 and 2007-08) the investment on land (per household) decreased in Koviloor village (i.e., from Rs.2527 to Rs.1536); and it increased in Varanavasi village (from Rs.996 to Rs.1300). The Two Way ANOVA results state that the significant level is 0.001 between the study villages. It is stated that the land investment is highly significant in the year 2007 of the study area. The type of farmers (large, small and marginal) is also significant (i.e., 0.001) in the year 2007. Conversely in the year 2008 it was entirely different. Between the villages the significant level is .247. The value showed that the land investment is not significant (during 2007-08) for the study area compared to the previous year (2006-07). On the other side, land investment also declined and the level of significant value is .695 among the different size classes of the farmers. The value explains that there is no significant difference among size classes of the farmers. Hence the first hypothesis is proved. Additionally paired sample ‘t’ test result shows that there is a significant difference (i.e., 0.500) between the reference periods.
Paddy, sugarcane and groundnut are the dominant crops in the study villages. In addition to this, corn and chillies are also grown in Varanavasi village. During the study period, cultivated area declined in both the villages. The study attempted to explain this with the use of regression analysis.

The expenditure on paddy cultivation is highly significant (i.e., 0.000) for the study area and period. This means that the area of paddy cultivation increases by 1 unit (acres), the yield of paddy increases 1.671 and 1.533 times respectively for the study period. It shows that the yield of paddy cultivation declined in 2008 compared to the previous year. The paired sample t test explores the input cost of paddy cultivation during the study period. This result shows that input cost like harvesting is highly significant (i.e., 0.000) and other input cost are not significant during the study period in paddy cultivation of the study villages. Additionally two way ANOVA result illustrates that all operation costs are highly significant (i.e., 0.000) except investment on irrigation labour and cost of paddy cultivation between the study villages and farm size wise respondents of the study villages. Besides expenditure on paddy cultivation (per acre) increased from Rs.10104 to Rs.11031 in Koviloor village and it increased from Rs.8182 to Rs.8748 in Varanavasi village during the period of study.
Expenditure on sugarcane cultivation is highly significant (i.e., 0.000) for the study period. In other words the area of sugarcane cultivation increased by 1 unit (acres), the production of the sugarcane cultivation increased 1.446 and 1.283 times respectively for the study period. The results found that the sugarcane cultivation decreased in 2008 compared to the previous year in the study area. In addition to this expenditure on sugarcane cultivation (per acre) increased from Rs.24744 to Rs.25796 in Koviloor village and it increased from Rs.26382 to Rs.27821 in Varanavasi village during the study period. The two way ANOVA results explain that there is no significant difference between the study villages in the expenditure on sugarcane cultivation; on the other hand there is highly significant difference among the farm size wise respondents in both villages.

During the study period expenditure on groundnut cultivation is highly significant (i.e., 0.000), which means that when the area of groundnut cultivation increases by 1 unit (acres) the yield of the groundnut cultivation increases 1.558 and 1.326 times respectively for the study period. The results found the groundnut cultivation decreased in 2008 compared to the previous year in both the study villages. The two way ANOVA result illustrates that all operation costs are highly significant (i.e., 0.000) except investment on irrigation labour and cost of groundnut cultivation between the study villages and farm size wise respondents of the study villages.
Expenditure on maize cultivation increased (per acre) from Rs.3368 to Rs.3878 in Varanavasi village. In addition to this expenditure on corn cultivation increased (per acre) from Rs.5488 to Rs.6242 in Varanavasi village.

Expenditure on chillies is highly significant (i.e., 0.000) during the reference period in Varanavasi village, which means that when the area of chillies cultivation increases by 1 unit (acres) the yield of the chillies cultivation increases 1.886 and 1.931 times respectively for the study period. The results found that the chillies cultivation increased in 2008 compared to the previous year in both the study villages. The paired sample ‘t’ test result shows that the expenditure on chillies cultivation is highly significant (i.e., 0.000) between two years in Varanavasi village.

The investment on agricultural machineries declined in both villages for the study period, in terms of quantity and value. Major share of investment on agricultural machineries was in Koviloor village compared to Varanavasi village. Investment on agricultural machineries declined (average) from Rs.3794 to Rs.3069 and from Rs.3521 to Rs.1939 during the study period in Koviloor and Varanavasi villages respectively. In addition to this, the results were also tested in the method of Paired Sample ‘t’ Test. In this regard weeding machine only comes under the category of significant level (i.e., 0.000). The weeding
machine reduces the energy, time and expenses of the respondents. So they are very eager to invest on this useful machinery. The result found that the investment in weeding machine is significant compared to other machineries during the study period.

➢ In the year 2007, Koviloor village used the fertilizers (per acre) at the value of Rs.2094/- whereas it has increased to Rs.2160/- in the year 2008. The amount of investment on fertilizer (per acre) increased in Varanavasi village from Rs.1923/- in 2007 to Rs.2109/- in 2008. In this view investment on urea, potash and DAP has changed between the years 2007 and 2008. Investments on other fertilizers say complex, pesticide and mundane fertilizers’ have not changed. It is proved in the paired sample t – test analysis. In this analysis, significant variables are the investments in urea, potash and DAP, meanwhile, the investments in complex, pesticide and other fertilizers failed to emerge as significant variable over a period of time in the study villages.

➢ In addition to this paired sample t test result shows that the investment on urea (value) and DAP have emerged as significant at 1, 5 per cent level significance during the study period. All other fertilizers’ investment did not emerge with significant change between the years 2007 and 2008.
Sugarcane cultivation increased around 2 per cent (i.e., from 27.94 per cent to 29.79 per cent) compared to previous year 2007 in Koviloor village; on the other hand it decreased around 37 per cent (i.e., from 59.83 to 23.24 per cent) compared to the previous year 2007 in Varanavasi village. Investments in agricultural machineries decreased from 20.51 to 17.87 per cent in Koviloor village during the study period. In the case of Varanavasi village it increased from 14.77 to 20.59 per cent during the reference period.

Majority of the investments come under the category of sugarcane cultivation and second place goes to the classification of investment on agricultural machineries in the study villages during the reference period. In addition to this, sugarcane cultivation increased.

Other investments such as on livestock, cattle shed / godowns, investment on crops like paddy, groundnut, other crops and fertilizer increased during the study period in Kovilloor village. Few investments such as on land and irrigation decreased during the reference periods in Kovilloor village. On the other hand, all investments except on sugarcane increased in Varanavasi village between the reference period.

The seventh chapter deals with the saving and investment behaviour of the respondents in the study villages. In this view the major findings of the chapter are as follows.
In Koviloor village 47 per cent of the respondents get credit from commercial banks, 42 per cent are benefiting from PACB and the rest of them are getting loan from private banks. In Varanavasi village 78 per cent of the respondents get credit from PACB, and 17 per cent of the respondents get loan from commercial banks.

In the year 2007 majority of the farmers (82 and 79 per cent in Koviloor and Varanavasi villages) received the agricultural credit from commercial banks; but in the year 2008 it declined from 82 per cent to 70 percent in Koviloor village and in the case of Varanavasi village it declined from 79 per cent to 33 per cent. But 15 per cent of the respondents get credit in PACB of Koviloor village in the year 2007 and it increased to 28 per cent in the year 2008. On the other hand 14 per cent of the respondents get credit in PACB of Varanavasi village in the year 2007 and it increased to 67 per cent in the year 2008.

During the survey a majority of the respondents (33 per cent) said that the banks followed hard procedures to distribute the agriculture loan to the farmers in Koviloor village. On the other hand 40 per cent of the respondents revealed that the banks take long time to distribute the agriculture loan among the farmers in Varanavasi village. 15 and 16 per cent of the respondents come under the category of ‘not easy’ to distribute the agriculture loan among the farmers.
A sizeable portion of the respondents (77 and 76 per cent in Koviloor and Varanavasi villages) comes under the classification of head of the family, which states that the decision making for the institutional credit is under the head of the family in the study villages. 15 and 9 per cent of the housewives take the decision about the institutional credit in Koviloor and Varanavasi villages respectively. Only 8 and 15 per cent of the respondents take the decision about the institutional credit for other family members like son and others in the household of the Koviloor and Varanavasi villages respectively.

Majority of the respondents (86 and 79 per cent) come under the category of head of the family; which means decision making of the agricultural investment is under the head of the family in the study villages. It is also noted that a few housewives (10 and 17 per cent) are also involved in the decision making activities in agricultural household of the study villages. Additionally 4 and 4 per cent of the respondents come under the classification of other family members of the family in the agricultural investment decision making of the Koviloor and Varanavasi villages respectively.

In addition to this respondents saved an amount of Rs.581 (average) in the year 2007 in Koviloor village and it declined to Rs.302 (average) in the year 2008. The respondents saved an amount Rs.2810 (average) in
the year 2007 and it declined Rs.1846 (average) in the year 2008 in Varanavasi village.

- Most of the respondents (67 and 75 per cent in Koviloor and Varanavasi villages) used the loan for agriculture purpose. Only limited respondents 65 and 13 in Koviloor and Varanavasi villages used the loan for other purposes, than the agriculture. Other respondents mainly depend on the money lenders and friends as sources of loan in the study villages.

- A lion’s share of respondents (74 and 40 per cent) are spent the agricultural loan for their family needs; second category (15 and 25 per cent) is children’s education in the study villages respectively. The main reason for this condition is that there is no regular or proper income for the farmers in the study villages. In addition to this, some of the respondents (7 and 1 per cent in Koviloor and Varanavasi villages) only benefited from the subsidy scheme.

- Majority of the farmers said (64 and 80 per cent in Koviloor and Varanavasi villages) that after the subsidy scheme investment increased. On the other hand 36 and 20 per cent of the respondents said that after the subsidy scheme investment in agriculture has not increased due to the reasons like labour shortage, low yield and market price.
Majority of the respondents (48 and 54 per cent in Koviloor and Varanavasi villages) said that private investment in agriculture has increased. But some of the respondents (32 and 35 per cent in Koviloor and Varanavasi villages) said that the private investment in agriculture has been decreased due to price fluctuation of the agricultural inputs.

The above findings clearly dealt with the field data of the present study. Based on the findings of the present study, the following are some of the useful suggestions are as follows to improve agriculture sector.

3. Suggestions

- Fiscal policy could play an enabling role in the development of agriculture in two ways in terms of targeting food subsidy for the poor and enhancing public investment while encouraging private investment that would benefit the rural economy.

- Government’s policy should make agriculture commercially viable, costs and benefits of continuing with the existing allocation of resources for subsidizing water, electricity and fertilizer need to be assessed.

- Improving the credit system to manage the crisis of stagnation in the study areas agricultural development has to be led by ensuring commercial viability, which has to be enabled by an appropriate credit system.
There should be focused attention on providing funds for risk mitigation, investment for enhancing supply, ensuring quality and rationalizing availability.

Instead of allocating to public attraction schemes or temporary gains schemes for the rural farmers, it is necessary to spend money on long term benefits to the poor farmers.

The people in the study area are not aware of what type of cultivation is suitable to the type of soil available. Hence, they should be given proper knowledge by the concerned agricultural officials by introducing farmer field school to the farming communities.

There is no water storage facility in the study villages. Hence the Government should take an attempt to provide tank irrigation facilities and construct dam as well.

The farmers of both villages are made aware of the drip irrigation scheme with Government Subsidy.

In order to enhance the standard of life of the farmers in the study villages the banks may provide loans for livestock rearing.

The Government schemes can be manipulated for improving the cultivation of the study areas in order to increase the production and the interest on cultivation among the farming community.

The schemes should only to induce the investment of the farmers on cultivation but not to distract them.
4. Conclusion

Capital formation is one of the essential factors for increasing production in all the sectors like agriculture, industry and service sector. Judicious use of natural resources for sustainable production of agriculture, adoption of advanced technology and development of infrastructure for facilitating all agricultural activities, ensure food security that can be tackled only with a strong capital base.

A large number of farmers’ dependence on rains and small farm holdings make it difficult to bring about fast transformation of agriculture. The only way to tackle them is to adopt focused strategies, and the government is doing just that. In addition to this there is a need to build an outcome oriented perspective in the implementation of public programmes in the area of irrigation, livestock, fertilizers and pesticides, use of high yielding varieties of seeds and market access.

Agricultural development cannot be ensured by confining attention to the activities within the boundaries of agricultural fields. It should encompass activities fully or partially meant for agriculture such as production of fertilizers and pesticides, development of agricultural markets, rural roads and communication, augmentation of facilities for institutional credit for small and marginal farmers, agricultural education and research and development of agricultural technology which are the main source for increasing production.
under the limited availability of natural resources. There may be a need for better targeting of the subsidies with a view to optimize the resource allocation and return there from. With area under cultivation remaining constant, improving productivity of crops is necessary for strengthening the farm sector with the efficiency of capital formation.