DISCUSSION

The present chapter attempts to discuss the issues developed on the basis of findings of the study in lieu of related findings of the previous research work and Government publications.

The average size of holding of the sample farmers was 2.096 hect. of which 12.45 percent was under irrigation against the average size of holding of district Hamirpur of Uttar Pradesh State and of India is 1.94 hect., 0.90 hect. and 1.55 hect. having 32.6, 67.01 and 34.51 percent irrigated area to the net cultivated area. Therefore, there is no discussion in the fact that size of holding in the research area are enough higher but rainfall base farming is dominant in the area. The main crops of the research area were Pulses, Oilseeds and course grain occupied more than 75 percent of the cropped area with a cropping intensity of 110.85 percent, same results were obtained by Deo Narayan (1993). Area under high yielding varieties of pulses, oilseed and course grain, combined was 61.34 percent of the cropped area. It was higher in pulses, low in course grain and Linseed being only 9.81 percent and 16.50 percent of the cropped area while Wadebhasine (1996) has reported 40 percent area under H.Y.Vs. of Jowar in Karnataka. It shows sufficient room for increasing area under high yielding varieties of slow growth crops in the study area.

Linear trend analysis related to area, production and productivity of slow growth crops (Pulses, Oilseed and Course grain) in district Hamirpur (U.P.) for the period from 1970-71 to 1995-96 showed decreasing tendency in the area and production of Gram, Arhar, Til and Jowar being the values of regression coefficient of area and production for
the respective crops as -271.32 and -866.01, -605.04 and -3.83, -498.79 and -65.70 and 1211.46 and -268.60, but the trend value for the productivity of these crops was marginally positive. The trend of area and production and productivity of Pea, Lentil and Linseed was quite increasing. The crops like Moong, Urd, Soyabean and Mustard showed a marginally increasing trend. In general, the stagnation in area, production and productivity of all the slow growth crops, in district Hamirpur was found. The variation (fluctuation) of original value from trend value is negative from 1990-91 to 1995-96 for the area and production of Gram, Arhar, Lentil, Mustard, Jowar and Soyabean. In general the variation is irregular throughout the time series. The index number analysis taking 1970-71 as base year, shows significant decrease in the area and production of Gram, Arhar, Til (seasamum) and Jowar. A sharp rise in the area and production of Pea, Moong and Soyabean onward to 1992-93 has been found in district Hamirpur. The index of productivity is slightly upward in Gram, Pea, Arhar, Mustard, Linseed and Moong. But the fall in yield rate of Lentil, Til, Jowar, Moong and Soyabean in 1995-96 in comparison to base year is an alarming fact to the extension worker and policy makers. The compound growth rate for area and production of Gram, Arhar, Til and Jowar was negative for the period of 1970-71 to 1995-96 in Hamirpur district, except, a attractive CGR for the area and production both for Pea, Mustard and Moong. It was slightly positive for other slow growth crops under study. The CGR for productivity of these crops was slightly positive. The results of trend, variation (fluctuation), and compound growth rate are duly supported by Wadebhasine (1996), Yadav & Bhatia (1994), Gopal Krishna Hibbar & Sholaporkar (1994), Jain et al. (1995), Pandey U.K. et al. (1994), Singh et al. (1982), Chatha and Singh (1982), Jain, Singh and Gill (1982). The Govt. of
India, in her publication “Economic Survey” 1996-97 pointed out that the area under course grains continued to show a declining trend and stagnation in production. Report further writes that the Pulse production in the country has been stagnating”.

The correlation between the variation in area, production, productivity, rainfall and prices did not show any significant relationship between the area, production and productivity of the crops. But most of the crops were significantly correlated to their previous year prices. Therefore, price has been found as an important constraint in increasing the magnitude of area under different slow growth crops, which is supported by Rajagopalan, Sennimalai, Radhakrishna and Kandaswami (1971).

Area under high yielding varieties in Pulses was more than 75 percent of the cropped area against about 20 percent in Oilseed and 9.81 percent in Jowar (the only course grain). However, 61.56 percent of the area under slow growth crops was covered by the high yielding varieties. It was because of relatively less cash inputs requirement on Pulses in comparison to course grain and oilseds. Marginal increase in the percentage of area under HYVs of slow growth was associated with increase in size of holdings, the cause behind was better financial position of larger farmers. Strengthening of input supply infrastructure and services of extension worker are required to increase coverage of more area under high yielding varieties. The level of application of crucial input like fertilizer, plant protection chemicals, Rhizobium culture, bio-fertilizers and irrigation water was scanty. None of the field of slow growth crop was irrigated. Thus the level of adoption of modern technology in the cultivation of pulses, oilseeds and course grain was very poor and resulted in low yield. The bridgeable gap in yield on the selected holdings in
comparison to the yield obtained from the field demonstration was 57.38, 33.34, 68.85, 63.22, 44.15, 58.19, 42.14, 78.20, 59.51 and 57.56 percent in Jowar, Arhar, Moong, Urd, Pea, Gram, Lentil, Mustard, Linseed, Til and Soyabean, respectively. The yield of the respective crops on the studied holdings was 6.82, 12.00, 3.24, 4.28, 11.45, 8.99, 8.10, 4.0, 4.00, 2.33 and 9.50 quintals per hectare. The yield of Jowar, Gram, Pea, Mustard and Soyabean was less than the average of these crops in U.P. State and in India. Jain et al. (1995) in M.P., Muralinamani & Shastry (1993) in Karnataka supported the low yield of these crops. Gopalkrishna Hibbar & Sholapurkar (1994) reported a significant increase in the yield of Jowar to the level of 11.49 quintals if 40 percent of the fertilizer dose is applied.

Input costs and gross income from slow growth crops, per hectare was worked out to Rs. 5326.10 and Rs. 7433.33 respectively, shared about 70 percent of the farm as a whole. Input costs and output, both, per hectare showed slight increase with an increase in size of holdings. Labour cost, cost of seed among the variable cost and overhead cost and rental value of land among the fixed cost were the major cost component in the cultivation of slow growth crops. The fixed cost which shared more than 40 percent of the total cost of cultivation is more than sufficient evidence of tradition farming. The analysis of socio-economic constraints restricting the production of pulses, oilseed and course grain showed positive relationship between the adoption of modern technology and education but negative with the age of the head of family. Old aged and illeterate farmers were apathetic against a zeal with the high school educated young regarding the adoption of new techniques in farming. A low exposer to mass media, extension
programme, contract to extension agencies, institutional members were the main social and institutional constraints, inhibiting the production of slow growth crops. This condition opens big door to the extension worker for changing attitude of farmers and a certain their participation. The economic constraints viz. marginal irrigated area, disincentive prices of slow growth crops, low level of fertilizer use, mono cropping etc. were restricting the adoption of modern technology on pulses, oilseed and course grains. These facts are supported by the findings of National Conference on Agriculture held in September 1996.

TEST OF HYPOTHESIS

The hypothesis that there is stagnation in the area, production and productivity of slow growth crops except an increase in the area under Pea, Lentil, and Soyabean and decrease in the area of Jowar, Gram and Til (Seasamum) is approved as per finding given in VI-1, VI-2, VI-3 and V-10.

The hypothesis that, “variation in productivity of different slow growth crops is not significantly correlated” is found valid as evident in Table VI-13(A) and VI-16(A).

The hypothesis that, “Existing technology adopted by the farmers is far below to the recommended technology” is approved on the basis of the finding given in Table VII-2 to VII-11.

The hypothesis that, “there are a number of socio-economic and institutional constraints in the path of adoption of new technology” is valid as per described in Table VII-20 to Table VII-27.