This paper attempts to assess the impact of the inter annual variation of the all India monsoon rainfall on the food grain production by analysing the observed variation in the past 30 years. A substantial decrease in the annual rate of growth of grain production in the last three decades suggests that self-sufficiency in food grains may not be sustained without changes in strategies. A significant finding is the observed asymmetry in the response to monsoon variation, with the magnitude of the impact of deficit rainfall on grain production being larger than the impact of surplus rainfall. Despite a substantial decline in contribution of agriculture to GDP over the five decades, the impact of severe droughts has remained between 2 and 5 percent of the GDP throughout. The decision of crop selection and the output of agricultural production are highly determined by the environmental factors, especially rainfall and water availability. In the tropical area, particularly in Malaysia, influences of these exogenous variables are so high that overall agricultural productions are now vulnerable. Crops are affected through rainfall in two different ways-high and low rainfalls. Avoiding the problem of low rainfall is nearly possible through irrigation, but over rainfall at the end of crop cycle causes destructive damages of the output.