Conventional wisdom has it that famine is caused by a serious shortage in the total supply of food available to a population, caused by natural calamities like flood, drought etc. In other words, the most common approach to famines is to provide an explanation in terms of food availability decline (or FAD for short). In complete contrast to the above, there is another type of explanation that describes famines as man-made. Here the implication is that famine occurs in the absence of any shortage of total supply. The conspiracy theory —namely, a group of people deliberately starves another group as punishment or for reasons of sadistic pleasure— also comes under the latter category. As we shall see, none of the above approaches can adequately explain many of the famines that have taken place in the last fifty years killing millions of people. We shall discuss below a new theory of famines developed in recent years by Professor Amartya Sen. In our discussion we shall draw heavily from the following book: A. K. Sen: *Poverty and Famines: an Essay on Entitlement and Deprivation* (Oxford University Press, 1981). This theory explains famines in terms of entitlement failures. This approach recognizes the fact that starvation is the characteristic of some people not having enough to eat; it is not often the case that there is not enough to eat. Ability or inability of people to command food through legal means is the main focus of attention in the entitlement approach to famines. Before we go on to discuss the entitlement approach to famines, a few words of caution are in order. First of all, one has to distinguish between the phenomenon of regular starvation and that of famine. This is important because many policy prescriptions for famine prevention that one comes across may reduce the incidence and extent of regular starvation and yet do nothing towards the prevention of famines. Starvation, or lowness of the level of food consumption, is a regular feature in many parts of the Third World. However, many of those countries have not been affected by famines at all. Famine can be said to be a violent outburst of starvation caused by a sudden collapse of the level of food consumption. In fact one can say that regular starvation is neither necessary nor sufficient for famines. The contrasting experiences of India and China should drive this point home. Since independence in 1947, India has been able to avoid a number of possible large scale famines primarily with the help of effective public policies. India however has a very poor record in poverty alleviation. On a typical day a Chinese poor is much better fed than its Indian counterpart. Life expectancy in India and China are 52 years and 69 years respectively. On the famine prevention front China’s record is however is not all that good. Some estimates suggest that in a famine during 1959-61 about 15 million Chinese perished (see Amartya Sen, ‘Development Which Way Now?’, *Economic Journal*, 1983). Finally, it has to be noted that famines can strike against a rising trend of food consumption. A declining trend of food consumption can of course precipitate a famine. In fact the food crisis of 1972 took place against a rising trend of food availability per capita; the latter being the result of the Green Revolution and successive years of good harvest. As mentioned earlier, the entitlement approach (or E-approach for short) to starvation and famine concentrates on the abilities of people to command food
through legal means including the use of production possibilities and trade opportunities. A person starves either because he or she does not have the ability to command enough food or because he or she does not use his or her ability. The E-approach is about the former and ignores the latter.

Before going on to discuss an actual famines it will be helpful to discuss briefly the E-approach in an abstract manner. Typically there is a menu of bundles (of goods) to choose from. The entitlement set of person i in a given society and situation consists of a set of alternative commodity bundles, any of which the person can decide to have. Let us call this set $E_i$. The E-approach views starvation as resulting from a failure to be entitled to a bundle with enough food. $E_i$ depends two parameters, viz. the endowment of the person —the ownership bundle— and the exchange entitlement mapping (or E-mapping for short) which specifies the set of alternative commodity bundles that the person can command for each endowment bundle. Let us now explain the above concepts with an example. Consider a peasant household who has a small plot of land, labor power and a few other resources like bullock labor etc.. All these make up their ownership bundle. Now there are a number of possibilities that are open to the peasant household. They may decide to use all of their labor power and other resources for the cultivation of the plot of land that they own. Some members of that family may work as wage laborers for a landlord. They may even decide to lease in another plot of land from a landlord and work as share-croppers on that plot of land. At the end of any course of action that they decide to follow, they may have to go to the market place for the selling and (or) purchasing of commodities. Here again there are a number of possibilities regarding how much of different commodities they sell or purchase. All such possibilities which give rise to different commodity bundles form the exchange entitlement to their endowment. In the above example, the parameters that will constitute the E-mapping are the technologies of production, wage rate, relative price of the commodities, the crop-share rate etc. The collection of all the possible commodity bundles that this household can command given their endowment and the E-mapping is the entitlement set $E_i$. This household will starve if and only if there isn’t a single bundle of commodities in $E_i$ with enough food. This can happen for two reasons. First, this family’s endowments may be so low that no matter what they do, they just can not command enough food. In this it is said that starvation takes place because of direct entitlement failures. Finally, suppose to start with they can avoid starvation. That is, their endowments and the E-mapping are such that there is at least one bundle of commodities in $E_i$ with food in it. Now, for the same levels of the endowments, one or more parameters of the E-mapping may change so much so that they no longer can command enough food. For example, a drastic drop in the real wage rate may entail such an outcome. In this case starvation happens because of exchange or trade entitlement failures. We shall now conclude the theoretical discussion on the E-approach to famines with an even simpler example. Consider an exchange economy with two goods: food(F) and non-food(NF). Let $p$ be the relative price of food (in terms of non-food). Suppose also that initially an individual is endowed with ef amount of food and enf amount of non-food. This is point A in figure 1 below.
Given the trade opportunities, this individual can of course exchange 1 unit of non-food for $1/p$ unit of food and thus move down the line BAC. Therefore he can command any bundle of goods that is on the line BAC (or below it). Suppose his minimum food requirement is OF. From fig.1 it is then clear that this individual can avoid starvation with the help of legal means which is the possibility of trade in this example. Now suppose for some reasons (like drought, flood etc.) his initial endowments drop to the point $\tilde{A}$. For the same level of the relative price $p$, it is evident from fig.1 that he can no longer avoid starvation as the maximum amount of food that he can command is OD which is less than the minimum requirement OF. In this case the individual plunges into starvation because of direct entitlement failures. Alternatively, suppose that the initial endowment remains at the point A. However, the relative price of food goes up so that the endowment set $E_i$ becomes the area OEAG. Once again this individual can not avoid starvation as the maximum amount of food that he can command is OG. Here the individual is forced into starvation because of trade entitlement failures.

Having discussed the E-approach for the analysis of famines and starvation in a somewhat abstract manner, we shall now consider an actual famine, viz. the Great Bengal Famine.
of 1943. Professor Sen’s book referred to earlier also discusses an Ethiopian famine among many other famines.

**The Great Bengal Famine**

In this section we shall try to examine the role of food supply and exchange entitlements in the Great Bengal Famine of 1943 which killed about 3 million people. Before proceeding any further, it will be useful to mention a few things about Bengal in 1943. First of all, Bengal was in the eastern part of undivided India which was under the British rule then. India got freedom from the colonial rule in 1947 at the cost of partitioning of the country. Bengal got divided into two parts. One part is in India and is called West Bengal. The other part is now an independent nation Bangladesh. The Great Bengal Famine affected the whole of the undivided Bengal. Second, in 1943 the world was in the middle of the Second World War and Bengal was very much in the front line, Burma having a border with Bengal. Finally, rice is the main staple food in Bengal. There are three crops of rice, viz. (a) Winter crop which is sown in the month of May and harvested in November, (b) Autumn crop which is sown in April and harvested in August, and (c) Spring crop which is sown in November and harvested in February. The share of the Winter, Autumn and Spring crops in the total annual output of rice are approximately 73, 24 and 3 per cent respectively. In October 1942 there was a major cyclone in Bengal which was followed by torrential rainfall causing serious damage to the Winter crop. Furthermore, Burma fell to the Japanese in March 1942 which cut off rice imports from there. It was then natural to think that the cause of the famine that followed was a serious shortage in the total supply of rice available for consumption in Bengal as compared with the total supply normally available. This thesis will be examined now.

The experience of Bengal during the famine can be divided into three phases, viz. Phase I: January, 1942 to March, 1943, Phase II: March, 1943 to November, 1943, and Phase III: November, 1943 to most of 1944. Death rate reached its peak in Phase III. Acute starvation was at its maximum during Phase II; epidemic, disease etc. were raging during this period. In fact, starvation death reached its peak in Phase II. During Phase I starvation deaths were rare, but economic distress was gripping. The famine started first in the districts away from Calcutta — the capital of Bengal — in early 1943. The experience was quite different in Calcutta. The official policy was to maintain the supply of essential food stuff to the industrial areas of Calcutta. This was given priority among their war time obligations. Control shops and similar schemes guaranteed freedom from starvation to more than a million government employees and their families. Calcutta saw the famine in the form of masses of rural destitutes. By the middle of 1943 streets and railway platforms were full of destitutes. Chances of survival were much higher in Calcutta as relief operations were much better organized there. Such operations were however vastly inadequate and people were dying on the streets of Calcutta.

Having given a broad picture of the sufferings during the famine, we shall now look at the role food availability decline and exchange entitlements played in the famine. While 1943 was not a very good year in terms of food availability as mentioned earlier, it was not the worst year. The current supply of rice was only 5% lower than the average of the preceding
five years. It was in fact 13% higher than in 1941 and there was no famine then. Even if one makes generous corrections for population growth, changes in wheat imports, late availability of food in 1943, movement across the frontiers etc., current supply in 1943 was still 7% higher than in 1941. Therefore one can safely say that food availability decline or FAD can not adequately explain the death of 3 million people. Let us now look at exchange entitlements. As mentioned earlier, the Great Bengal Famine was essentially a rural phenomenon. We shall now see how different groups people in the rural areas were affected by the movements of exchange entitlements. The agricultural laborers were the single largest group among the victims of the famine. They suffered on two counts. First, many of them lost their jobs as production was curtailed by bad weather, and thereby suffered from direct entitlement failures. Second, for those still in employment real wages went down very significantly. The index of real wage rate went down from 100 in 1939-40 to about 34 by the end of 1943. While some items such as wheat flour and oil kept pace with rice in terms of price, some commodities like fish, milk and haircut which are relative luxuries at times of acute distress fell well behind. For example, by the summer of 1943 value of a haircut in units of rice had fallen to less than a fifth of what it was in December 1941. Therefore, the milkmen, fishermen, barbers etc. also experienced a drastic drop in their exchange entitlements. The only group that did not possibly suffer a deterioration of exchange entitlements is the large and rich rice producers who in fact benefited from huge increases in the price of rice. What then caused such sharp movements of exchange entitlements? Increase in the price of rice in Phase I was essentially related to demand factors. The increase in demand was a result of general inflationary pressure in a war economy. The price of rice went up from Rs. 13 per Maund (about 82 lbs) in early December to Rs. 21 by early march of 1943. Since it was the public expenditure expansion that initially raised the price of rice this famine is often described as a boom famine. In phase II the demand forces were reinforced by the indifferent Winter crop. The price of rice was Rs. 80 by the month of October, 1943. Given that Bengal had not experienced any inflation in the 50 years prior to the famine, such dramatic increase in the price of rice within such a short period led to panic purchase by consumers and large scale hoarding by producers exacerbating the situation. Current supply no longer reflected the supply to the market. Uneven expansion of incomes and purchasing power was clearly responsible for the onset of the famine. The famine could have been avoided if the authorities did not just rely on the estimates of the overall food availability for the diagnosis of the symptoms of the famine. The Raj was absolutely right in its estimation of the current supply of food. In January, 1943 the Viceroy in India wrote to the Secretary of State for India in London: ‘Mindful of our difficulties about food I told him [the Premier of Bengal] that he simply must produce some more rice out of Bengal for Ceylon [now Sri Lanka] even if Bengal itself went short! He was by no means unsympathetic, and it is possible that I may in the result screw a little out of them’. This statement would not look preposterous if one believed that FAD was the only factor that causes famines. The Raj was clearly wrong in its theory of famines.