

# A FURTHER REJOINDER

## Peter Bowbrick

In 1986 I published a paper and a departmental report<sup>1</sup> showing that Amartya Sen's theory of famines was untenable, both because of analytical errors and because it was factually inaccurate. Sen published a Reply<sup>2</sup> and I published a Rejoinder<sup>3</sup>. Sen published a further Reply<sup>4</sup>, which I left unanswered, because I had destroyed his arguments and both I and my advisers thought that any credibility Sen had left was destroyed by what they called his "snide remarks" and his personal abuse. It now appears that a large number of people still take Sen's theory seriously, so I am exercising my right of reply.

In any famine it is obvious that the people who die are the people who cannot afford to buy food. Classical economists from Adam Smith on proposed to tackle famine by remedying this, with food handouts, Poor Law Relief, and public works to give the poor money to buy food. They believed that this would create effective demand, and the market would ensure that the food was supplied. This policy proved disastrous in the Irish famine<sup>5</sup> and a string of Indian famines, and by the middle of this century economists were agreed that these demand side measures must be supplemented by supply side measures, notably the state imports of grain.

Sen argued strongly against supply side measures. The view which he presented as novel is the demand side approach of the classical economists.<sup>6</sup>

He went a step further, though. In his book *Poverty and Famines*, and in many other books and papers he claimed that most famines are not caused by sudden declines in food availability due to droughts, floods etc. He claims that, on the contrary, they happen when there is plenty of food available, but one part of the population suddenly eats a lot more than normal, because of a wartime boom or inflation for instance. As a result there is less food available for the rest of the population, so the poor starve. If this is the cause of a famine, it is formally possible to control the process by reversing the change in distribution. This can be done by seizing traders' stocks, imposing rationing and giving free food to the poor. This package can be very effective

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Peter Bowbrick, "The Causes of Famine: a refutation of Professor Sen's theory" *Food Policy* May 1986 pp 105-124. Peter Bowbrick *A critique of Professor Sen's Theory of Famine*, Institute of Agricultural Economics, Oxford University, 1986.

<sup>2</sup> Amartya Sen, "The Causes of Famine: a reply", *Food Policy* May 1986 pp125-132.

<sup>3</sup> Peter Bowbrick, "Rejoinder: an untenable hypothesis on the causes of famine", *Food Policy* February 1987, pp 5-9.

<sup>4</sup> Amartya Sen, "Reply: Famine and Mr Bowbrick" *Food Policy* February 1987.

<sup>5</sup> Woodham-Smith, C.V., *The Great Hunger: Ireland 1845-1849*, Penguin 1991 (Hamish Hamilton 1962)

<sup>6</sup> See for example, W.W. Hunter, *Famine Aspects of Bengal*, Simla 1873, Sir Bartle Frere, *On the Impending Bengal Famine* 1874. Both refer to previous reports and Blue Books.

even when there is a fall in food availability - the British Government used it during the wartime blockade, and actually improved the nutrition of most of the population. While increased imports make the practical problems much easier, the quantity that needs to be imported is much smaller than if the famine is caused by a crop failure, for instance. If Sen is right and this redistribution is the normal cause of famine, organizations like Oxfam are largely redundant.

This is contrary to traditional economics, but the idea was widely accepted because Sen produced a lot of evidence to show that this is exactly what happened in the Bengal famine of 1943 in particular. I challenged this evidence.

Sen argues that there was no sudden decline in food availability in 1943, and that the war boom caused the famine. There were 100,000 new war workers, who were well paid, and they and their families ate so much extra food that there was not enough left to go round, and there was a famine. These people were quarter to one half per cent of Bengal's 61 million population. Their extra consumption is supposed to have caused a famine in which 40 million people went hungry, 10 to 15 million of them suffered very seriously indeed, and two to four million people died. A few minutes' work with a calculator shows that to achieve this, each of the workers, and their family members, would have had to eat 60 to 120 times as much food as in a normal year.

Elsewhere, Sen extends this argument, saying that the wartime boom meant that the people of Calcutta ate so much rice in 1943 (but not in 1942 or 1944) that rice was moved from the countryside to feed them. As a result there was a major famine in the country areas. Again, a few minutes work with a calculator is enough to show that they would have had to eat more than three times the normal amount of food to create this shortage.

Needless to say, the facts show that they did not eat this much. There are very accurate statistics on consumption because of wartime controls, and these show that the people of Calcutta ate less than usual during the famine year.

Nor is Sen correct in saying that food moved from the country areas into Calcutta. As in previous years, Calcutta got all its grain from outside Bengal. True, there were small imports from the country immediately after harvest, but this never amounted to more than two and a half days' supply for the districts. By the time the famine was in full flow, this and more had been shipped back to the districts. If Sen was right about the cause of the famine, this extra supply shipped to country areas would have stopped the famine there: it did not.

Sen states "*In a poor community take the poorest section, say, the bottom 20% of the population and double the income of **half** that group, keeping the money income of the rest unchanged. In the short run prices of food will now rise sharply, since the lucky half of the poorest group will now fill their part-filled bellies. While this might affect the food consumption of other groups as well, the group that will be pushed towards starvation will be the **remaining** half of the poorest community which will face higher prices with unchanged money income. Something of this nature happened in the economy of Bengal in 1943.*" This has been a hugely influential statement.

Again, a little work with a calculator shows that even if it was true, the lucky half would have eaten very little more, only 1.8% of total consumption (according to consumption surveys of the time). This would have had no noticeable effect, if, as Sen says, there was plenty of food available.

But it cannot possibly be true. It implies that 10% of the 61 million population doubled their income. A maximum of one million of Calcutta's population was in the very poor category (according to consumption surveys), so five million of them must have moved from the countryside to Calcutta, to make Calcutta the biggest city in the world for this year only. The people must have moved to Calcutta in the months preceding the famine, and then have suddenly disappeared the moment the next main crop was harvested. This did not happen - wartime rationing means that we have accurate figures on population. It appears to have increased in size by 300,000 to 500,000 from 1939. Sen's figures are more than twelve times the true figures.

Nor was there any way in which the extra 1.8% could be taken away from the poorest part of the population. The effect would have been spread over the market as a whole. In Bengal we know that 66% of the population went hungry, not just the poorest 10% as Sen states.

Nor is it at all likely that war workers were recruited exclusively from the very poor. Many of them were farmers and manual workers who normally consumed more calories than the industrial workers, according to contemporary consumption surveys.

At this stage, a few more minutes' work with a calculator shows that a major boom famine is impossible in this type of economy.

Sen's theory would have had no credibility whatsoever without his statement that 1943 food availability was "at least 11% higher than in 1941 when there was nothing remotely like a famine" Several economists have used exactly the same data to show that, on the contrary, food availability was the lowest in at least 15 years, and probably 11% lower than in 1941. The latest analysis, by Dr Goswami of the Indian Statistical Institute, dissects Sen's analysis in great detail and confirms that Sen was wrong.<sup>7</sup>

If, however, one examines the quality of the data that Sen uses, there is even less reason to believe that there was an increase in food availability - which is essential to his whole argument. It is surprising that Sen should have placed so much reliance on one set of statistics which contemporary analysts, including Professor Mahalanobis, one of the founding fathers of agricultural statistics, damned as totally unreliable, being based on wild guesses adjusted by officials for bureaucratic convenience. They must be some of the worst statistics ever produced. Giving strong weight to such bad statistics, and little weight to more reliable evidence totally invalidates his results.

### **The actions of the Bengal Government**

The main thrust of Sen's work is that if the government had had his diagnosis of the cause of the famine, they would have controlled it or prevented it entirely. He says that the main reason that the famine was not recognized and not dealt with properly was "*the result largely of erroneous theories of famine causation [held by the Bengal Government], rather than mistakes about facts dealing with food availability*" He says that they were obsessed with the view that the famine was caused by major shortages, not by a war boom.

The facts are quite different. The Bengal Government had exactly the same diagnosis of the cause of famine as Sen. They carried out a programme of seizing

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<sup>7</sup> O. Goswami 'The Bengal Famine of 1943: Re-examining the Data' in, The Indian Economic and Social History Review, Vol 27, No. 4, 1990.

traders' stocks, supply control which reduced consumption in Calcutta, distribution to the affected areas, and free food for those people who could not buy it. They imported more than enough to feed Calcutta. If the government - and Sen - had been correct, the famine would have stopped.

In fact, their actions had virtually no effect: the famine raged unabated. The famine was caused by severe shortages, and could only have been tackled by very large imports. The amount they imported for the 56 million country people was only six days' supply - enough for propaganda pictures but not much else.

This is just one case of a famine being caused or aggravated by a government using the diagnosis Sen recommends.<sup>8</sup>

### **Other causal hypotheses**

Sen did not rely entirely on the hypothesis that there was a war boom. He had other "causal hypotheses" to which he appears to give substantial weight. A complete list of the explicit causal hypotheses he puts forward is shown below. (Sen, op cit. Ref 2, 1977, pp50, 51 1981 a, pp 75-78.)

- 1) Demand factors related to inflation raised the rice price in 1942.
- 2) An uneven expansion of income and purchasing power.
- 3) Impoverishment of occupational groups not directly affected (from March 1943 on).
- 4) The change from the stable prices of 1914-1939 to an era of more rapidly rising prices.
- 5) Speculative withdrawal and panic purchases were encouraged by administrative chaos (especially between December 1942 and March 1943, but also up to November).
- 6) ' . . . demand forces were reinforced by an "indifferent" winter crop and by vigorous speculation and panic hoarding from March to November 1943'.
- 7) The prohibition of the export of cereals from other provinces.
- 8) The policy of removing boats from areas threatened with Japanese invasion. (Sen, op cit, Ref 2,1984, p 461; 1980b, p 619.)
- 9) The policy of removing excess grain stocks from areas threatened with invasion. (Ibid.)

Of these, 1 and 2 have been discussed above. The inflation explanation (1) is particularly surprising as virtually every country in the world had a similar rate of inflation during the war, and famines were amazingly rare. The change from pre-war to post war price regimes is meaningless, given that the same applied to every country in the world during the second world war, without causing major famines.

The statement that some occupational groups were particularly hard hit (3) is merely stating what everybody has always known, that certain occupational groups are

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<sup>8</sup> Two and a half million people died out of eight million in the Irish famine of 1845-1849, when potato blight reduced the amount of food available per head. The money spent by the British Government and by British and American charities would have controlled it if supply side measures, such as state imports and a ban on exports had balanced the demand side measures. The demand side measures merely put up prices to famine levels, benefiting speculators, without substantially increasing food availability per head. (Woodham-Smith, C.V., *The Great Hunger: Ireland 1845-1849*, Penguin 1991 Hamish Hamilton 1962)

hit particularly seriously in a famine: it had been a commonplace in Bengal since 1873 at least.<sup>9</sup> In no sense can it be construed as an explanation of the famine.

Some people have taken speculation and hoarding to be Sen's chief causal hypothesis. However, they could only have been causes if they removed grain from the market and from consumption during the period. This would imply that speculators or private consumers destroyed enormous quantities of rice, exported it or had it in store at the end of the famine. Sen makes no effort to argue any of these, and there is no evidence of any of them in any of the sources. On the contrary, there is strong evidence that speculators and private hoarders ended the year with lower stocks than they started.

To those people who believe the statistical evidence that there was a massive decline in food availability in 1943, as the result of the loss of 30% of the winter crop, and the loss of the Burmese rice supplies, it is extremely important that exports of grain from other provinces to Bengal were prohibited, and that boats were seized by the government, paralysing Bengal's internal supply system. These actions were in no way the cause of the famine, but they prevented the only action that would bring it under control. Sen does not believe that there was any decline in availability, so the imports that were made should have been adequate. Seizing the boats meant that no significant amount of rice could be moved from the country areas (which starved) to Calcutta (which did not). Sen argues that preventing grain moving from the country to the city would have prevented famine, yet he says that seizing the boats was a cause of famine.

The removal of the excess stocks from areas threatened with invasion took place in a surplus year nine months before the famine started to bite. The amount was 40,000 tons, one and a half days' supply for the country areas. It is absurd to suggest that this was a cause of famine.

### **Factual accuracy**

In my original paper I showed that throughout his writings on the Bengal famine, Sen had misquoted his sources, misstated the facts in his sources and made factual statements contradicted by the sources he used.

### **Sen's First Reply**

In Sen's first reply, he attempted to show that he had made one less factual misstatement than I had identified, one that does not affect any of the conclusions above. He made no attempt to deny that he had made the other misstatements: any denial would have been met by printing facsimiles of the original documents.

He also claimed to have made a few less analytical errors. His reply was an attempt at obfuscation, discussing incidental points in a way to suggest to casual readers that our disagreements were minor academic squabbles. Nothing could be further from the truth.

His reply was also characterized by personal abuse and snide remarks.

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<sup>9</sup> See for example, W.W. Hunter, *Famine Aspects of Bengal*, Simla 1873, Sir Bartle Frere, *On the Impending Bengal Famine* 1874. Both refer to previous reports and Blue Books.

## My Rejoinder

In my rejoinder I showed that his claim that he had made one fewer factual misstatements was incorrect. Indeed, I showed that his reply had introduced more misstatements. For example, he misstates what I said about the Famine Inquiry Statistics; he misstates the “corrections they made”; he falsely accuses me of misrepresenting him on carryover; he states that his explanations were not meant to be hypotheses on causes even though he called them “causal hypotheses”; where I have rigorously used the word “shortage” as I defined it, in terms of the nutritional adequacy of the food available to the population, he criticizes me as though I had used it in other ways, such as no shortage implying “there being no excess demand at the ruling prices”; he falsely suggests that mainstream economists had hitherto ignored the demand side of food distribution and famine; he falsely says that I reject food imports and “Bowbrick would not accept the merit of food imports simply because the excess demand happened not to have resulted from a decline in food supply”; he misstates the number of dependants of workers, even though he quotes half the sentence which gives the right figures.

## Sen’s Reply

In his reply (*Food Policy* February 1987 pp 10-14), Sen again makes no attempt to defend himself against the charge that throughout his work on the Bengal Famine he misquoted his sources, misstated the facts in his sources, and made factual statements contradicted by his sources.

Nothing he says affects my main conclusions, even if we were to accept what he says. Instead there is an exercise in obfuscation, concentrating on side issues and making it appear that there are a mass of disagreements on minor points of interest only to academics specializing in this area.

There are also the misstatements and personal abuse that characterise his first reply. The first third of his reply is devoted to showing that

“It is indeed hard to put much faith in Mr Bowbrick’s rejection of official statistics and of the Famine Inquiry Commission’s figures on the basis of *one* reference to what the trade was talking of’, when that reference itself describes that talk as ‘exaggerated statement’ and ‘propaganda, perhaps interested’. In my reply to his original article I could not help wondering that Mr Bowbrick’s faith in the gullibility of the reader is evidently boundless’ and nothing in this new Rejoinder can prevent that speculation.”

Like most of Sen’s statements, this is factually incorrect. My reference to what the trade was talking of was an aside in a section headed “Other Evidence”. The reasons I said the production statistics were inaccurate unreliable were set out in some detail (*Food Policy* May 1986 pp 109-113). They drew heavily on the detailed and damning discussions of them made by contemporaries, including statisticians as eminent as Mahalanobis.<sup>10</sup> These criticisms had nothing to do with what the trade thought.

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<sup>10</sup> E.g. R.C.Desai, *Standard of Living in India and Pakistan, 1931-3 to 1940-41*, Popular Book Depot, Bombay, India. 1943, P.C.Mahalanobis, ‘Recent experiments in statistical sampling in the Indian Statistical Institute’, *Philosophical Transactions of the Royal Society*, part iv pp 326-378, 1946. Elphinstone, commenting on Mahalanobis 1946, Famine inquiry Commission 1945 pp 44-5.

Sen's relies entirely on these statistics, treating them as totally accurate, while ignoring other more reliable data which does not support his hypothesis. He says "we cannot do much better than using all the statistics that can be found", no matter how unreliable or inaccurate. The data are so reliable that they corrupt the rest of his work. Garbage in, garbage out.

However my criticism of his figures was that even if one accepted his production figures, his crucial statement that there was 11% more rice available in 1943 than in 1941 was incorrect. His next section attempts to obfuscate this. Rather than repeat the refutation, I refer the reader to O. Goswami, of the Indian Statistical Institute, who dissected Sen's analysis at length and in great detail, using the same figures as Sen, and came to an almost identical conclusion to my own - apparently without being aware of my paper. (O. Goswami 'The Bengal Famine of 1943: Re-examining the Data' in, The Indian Economic and Social History Review, Vol 27, No. 4, 1990).

In his sections "Food Shortage and FAD", and "The FAD thesis", we have, again, misstatements and abuse. In my original paper, I defined "shortage" in terms of nutrition for the population as a whole. I used the word consistently according to this definition: that is rigour. In his first reply Sen suggests that I used it in the sense "there being no excess demand at the ruling prices". In my reply I pointed out that this was a misstatement. Nevertheless, in his second reply Sen again says that I used it in this sense and states that this implies that I have made errors in analysis ("Food shortage and FAD", "The FAD thesis" p12). I can see no justification for misstating my views so comprehensively in the first place. I am astounded that he should do so again, even after the misstatement has been pointed out.

Sen ends up with a section titled "Distortions by Mr Bowbrick" where he criticizes me for attributing to him "belief in various different and contradictory causations". I attributed to him what he repeatedly described as "causal hypotheses", *as I stated in my paper and my rejoinder*. Yes, these "causal hypotheses" are different, contradictory and incoherent.

He states that I have misdescribed his views, accusing him of saying one thing when in fact he said another. This is a non sequitur when he said both. Once he got his basic facts wrong, he created a tangled web, where each new statement of fact, each new bit of analysis contradicts another. My quotations are correct.

I have shown throughout my original paper and my rejoinders that in all his work on the Bengal famine Sen misquoted his sources, misstated the facts in his sources and made factual statements that were contradicted by the facts in his sources. Sen has been aware of these errors of fact since 1985 at least. Neither Sen nor anybody else has even attempted to 1 September 1999 show that I got my facts wrong. It is a matter of the gravest concern that the books and papers depending on these incorrect facts have not been withdrawn. It is not just that it affects the integrity of our science. It affects the lives of millions of people.