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**Africa and India:
What do we have to learn from each other?**

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CONTENTS

1. Famines and food availability (p. 1)
2. Intervention and cash relief (p. 5)
3. Food supply and famine relief (p. 13)
4. Politics and the news media (p. 16)
5. Sex ratio and the gender bias (p. 21)
6. Missing women: India and China (p. 23)
7. Gender bias and women's place in production (p. 26)
8. Concluding remarks (p. 38)

AFRICA AND INDIA: WHAT DO WE HAVE TO LEARN FROM EACH OTHER?*

Amartya Sen

There is a great deal that can be learnt from the respective successes and failures of Africa and India in different fields.¹ This lecture is concerned with some of these lessons. Time will not permit more than a few of the issues being discussed. I shall concentrate on some elementary matters of life and death.

Famines and food availability

There are many important lessons in the Indian experience in famine prevention. Sub-Saharan Africa has been plagued by recurrent famines in recent decades, affecting many countries including Ethiopia, Somalia, Sudan, the Sahel countries (Chad, Niger, Mali, Burkina Faso, Mauritania, Senegal), and others. In contrast, despite the continuing poverty, there has been no famine in India since Independence.² The last one was in 1943 - the

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¹This question has been addressed from different perspectives by Clay (1986), Drèze (1986), Harriss (1986a), McAlpin (1986), Sen (1986), Swaminatham (1986) and Mellor, Delgado and Blackie (1987), among others.

²Swaminathan (1986) notes the "irony" in the fact that even two decades ago, many predictors expected famine and hunger to intensify in India, but not in Africa (see, for example, Paddock and Paddock 1967).

so-called "Great Bengal Famine" in which three million people died.³

This contrast is often explained in terms of India's alleged success in raising food output per head dramatically, through such things as the green revolution. There has indeed been some rise in the per capita output of food in India, and this does certainly contrast with the experience of some parts of Africa.⁴ But food availability in India has not, by any means, gone up dramatically. The growth rate of food output over the decades has been modest, and even on generous assumptions amounts to no more than a half per cent per year on the average.⁵

More importantly, food output per head in India is still lower than in many sub-Saharan countries. In fact, in terms of the supply of calories per head, India still has a lower availability than a majority of the sub-Saharan economies (see Table 1). In particular, the per-capita food availability in India, measured in terms of calories per head, is lower than many of those sub-Saharan countries that have experienced substantial famines in recent years, or are experiencing such famines now. A greater general availability of food is certainly not the reason behind India's success in famine prevention.

³The official estimate of famine deaths in the Bengal Famine of 1943 was 1.5 millions (see Famine Inquiry Commission 1944). For the statistical basis the three-million estimate, and the procedures used in deriving that figure, see Sen (1981).

⁴For some general analyses of the problems of food production and security in Africa, see Kates (1981), Eicher (1982), Svedberg (1985), Glantz (1987), Ghai (1987), Mellor, Delgado and Blackie (1987), and Rukini and Eicher (1987), among others.

⁵Scrutinizing the composition of the food output and the distributional aspects of food consumption would seem to indicate an even more modest assessment. For example, Ramachandran (1987) finds that a detailed study of "food consumption in rural Indian households" leads to the following conclusion: "these three-year moving averages do not lend any support to the conclusion of increasing trends of calorie intake in any State except possibly in Gujarat in a small way. ... In any case, there is no evidence in these data of an increasing secular trend in the average calorie intake of the lowest income groups" (p. 3).

Table 1Comparative Food Availability per Head 1983Sub-Saharan Africa

<u>Country</u>	<u>Daily calory supply per head</u>
<u>Less than India</u>	
Ghana	1,516
Mali	1,597
Chad	1,620
Mozambique	1,668
Benin	1,907
Kenya	1,919
Zambia	1,929
Guinea	1,939
Zimbabwe	1,956
Burkina Faso	2,014
Nigeria	2,022
Cameroon	2,031
Angola	2,041
Central African Republic	2,048
Somalia	2,063
Sierra Leone	2,082
<u>India</u>	2,115
<u>More than India</u>	
Sudan	2,122
Taire	2,136
Botswana	2,152
Togo	2,156
Ethiopia	2,162
Malawi	2,200
Mauritania	2,252
Niger	2,271
Tanzania	2,271
Rwanda	2,276
Uganda	2,351
Liberia	2,367
Lesotho	2,376
Burundi	2,378
Congo	2,425
Senegal	2,436
Ivory Coast	2,576

Source: World Development Report 1986, Table 28.

India's success in famine prevention is related much less to the production side of the story than to the distributional side, especially public intervention in precarious situations. This should come as no surprise if famines are not seen as being invariably related to food availability, but being caused by the inability of large sections of the population - usually belonging to a few occupation groups - to command food.⁶

There are many different causes that can lead to the decline of a particular occupation group's entitlement to food within the system. For example, in a market economy, increased unemployment or lower wages or higher food prices may undermine the wage earner's ability to establish ownership over food. Similarly, a particular occupation group may be unable to command food if the product it sells suffers from a decline in demand, and if the members of the occupation group find it hard to move into other occupations rapidly enough. Famines can occur even in situations of a boom rather than a slump if some occupation groups are relatively left behind, when others are experiencing enhanced purchasing power. In the battle for food, the Devil takes the hindmost. If famines are analyzed in terms of variations of entitlements of specific occupation groups, it can be seen that neither food output nor food supply can provide an adequate understanding of the causation of famines. In fact, many major famines have taken place without any decline in food availability

⁶On this see Sen (1977, 1981).

per head.⁷

Intervention and cash relief

If famines are caused by entitlement failures, one way of averting famine is to recreate the lost food entitlements of the affected occupation groups. Creating purchasing power is an obvious and immediate way of achieving this. One of the big differences between the nature of famine relief in India and that typically used in Africa is the much greater reliance on cash distribution in India. Famine relief efforts in India often take the form of paying cash wages for work. If the dispossessed find temporary employment and cash income, their ability to command food in the market is enhanced, and even if food is not brought to the famished by vehicles owned or requisitioned by the government, food does move in response to the enhanced demands. The crucial issue for government policy is to recreate the entitlement of those who have lost their means of support (for whatever reason, e.g., loss of employment connected with a drought or a flood, loss of agricultural output whether of food or of cash crops, and so on).

⁷On the nature of the "entitlement approach" to famine analysis, see Sen (1977, 1981). For discussions of the main aspects of the entitlement approach, see Arrow (1982), Desai (1984), Solow (1984), Tilly (1985). Devereux and Hay (1986), Ravallion (1987), and Vaughan (1987) among others. On related matters, see also Reutlinger and Selowsky (1976), Taylor (1977), Alamgir (1980), Oughton (1982), Bongarts and Cain (1982), Eicher (1982), Leibenstein (1982), Richards (1983), Appadorai (1984), Bush (1985a, 1985b), Crow (1985), Khan (1985), Ravallion (1985), Snowdon (1985), Svedberg (1985), Vaughan (1985), Chakravarty (1986), Desai (1986), Tilly (1986), among others.

The failure of a person to command food in a market economy can arise from one of two different dysfunctions.⁸ There is a "pull failure" if the person loses his ability to demand food in the market, e.g., through loss of employment and the resulting loss of purchasing power. On the other hand, if there is no such change, but the person's ability to command food collapses because of supply not responding to the market demand, then this is a case of a "response failure". This can possibly occur as a result of market disequilibria, or monopolistic imperfections, e.g., the cornering of the market by some manipulative traders. The rationale of cash relief rests on the assumption that "pull failure" is the main thing to worry about, and the problem of "response failure" is secondary, if at all present.

Famine relief in most African countries has typically tended to take the form of food being actually carried over and physically handed over to the destitutes.⁹ Given the geographical spread, this has often involved enormous logistic problems for the government bureaucracy in getting the necessary transport vehicles and the organizational set up to carry the food from the points of

⁸I have discussed this distinction (and the policy issues involved) in my Elmhirst Lecture to the International Association of Agricultural Economists in 1985; see Sen (1986).

⁹There are two distinctions here, viz., (1) payment of cash for work versus food for work, and (2) food for work versus food hand-outs (or direct feeding). Many of the African famine relief efforts seem to take the form of hand-out (or feeding) and thus they differ from food for work as well as cash for work. A further possible contrast in policy composition concerns merely selling food in the famine region as opposed to giving it away free. On these issues see also Coate (1987).

supply to the points of distribution. The underlying belief in such a strategy may be partly based on taking a rather literal view of "food relief", or on being deeply suspicious of distributing cash, but it may also - more reasonably - relate to the fear of systematic "response failure".

It is certainly true that the promptness and adequacy of the market's response to effective demand will vary with the nature of the market mechanism.¹⁰ The possible problems of passively non-responsive traders, or of actively manipulative ones, may indeed have to be carefully watched, but there is no general presumption for assuming a systematic response failure. Indeed, the Indian experience indicates that the possibility of manipulation by private traders can be systematically dealt with by (i) regular participation of the government in trading activities, and (ii) having a sizeable stock of food grains in the public sector, without insisting that the entire delivery system of food be done through bureaucratic control. It is a question of choosing a particular role of the government in reestablishing the lost food entitlements of the potential famine victims, and in the Indian context this has often taken the form of the Government concentrating on remedying the "pull failure" through cash for

¹⁰See Harriss (1982). Sometimes state intervention in the structure of private trade may actually act in favour of monopolies, by suppressing "technically illegal" competitive firms. Harriss emphasizes the need to make sure that the effect of state intervention is not that of "exacerbating what it intervenes to restrain" (p. 90). It is important to assess objectively the actual effects of indirect as well as direct intervention of the state in the pattern of trading, without being guided by political presumptions one way or the other.

work programmes. While food-for-work has also been frequently used, and also food hand-outs and direct feeding, the distinctive use of cash-for-work is certainly extremely important in Indian famine evidence. Threatened famines have been averted in different parts of the country in different years using employment schemes, often paying for work in cash (e.g., in Maharashtra in 1973; also in Bihar in 1967, in West Bengal in 1979, and so on).

The reliance of famine relief systems on cash disbursements has the advantage of quickness which is particularly noteworthy in the light of the much-discussed delays in the relief system in the case of some recent African famines, e.g., in Ethiopia, Sudan, Somalia. The provision of cash income leads to giving aid to the potential famine victims immediately. It also helps in food being pulled into the famine affected region in response to market demand, supplementing food movements by the government itself.

Furthermore, the cash distribution system also helps to prevent the widely observed phenomenon of "food counter-movement" (see Sen 1981). Food often moves out of the famine-stricken regions in the case of a "slump" famine (e.g., from the famine-affected Wollo province in Ethiopia in 1973, from famine-struck Ireland during the notorious famines of the 1840s), since the non-famine regions (viz., Addis Ababa and Asmera in the case of the Wollo famine, and England in the case of Irish famines) with greater purchasing power, tend to attract food away through the market mechanism from the famine regions (even though they have less food per capita than the non-famine regions). By

providing cash income and by enhancing the purchasing power in the famine regions, food counter-movement can be resisted, along with positively pulling more food into the famine regions from elsewhere.

Emergency relief in Indian famine management has usually taken the form of temporary employment schemes. This employment can be used for improvement of productivity in the future through, say, such counter-drought measures as the digging of wells, or by contributing to the social infrastructure in the form of the making of roads. Sometimes these investments have indeed been productive, even though the success here has been very mixed.

More immediately, the requirement of working as a condition for getting a wage income has had the affect of serving as a selection mechanism for identifying the needy. Even though there is something rather contrary in making people do work at a time when there is deprivation of food and of calories, the selection mechanism involved in giving relief only to those who are ready to work has an important role in targeting the relief to those who need it really badly.¹¹

¹¹This type of relief does not, however, help much the ill and the disabled among the needy. In fact, the employment schemes connected with famine relief are best seen as replacements for the lost employment and activities associated with the causation of the famine. The ill and the disabled who would have had difficulty in finding employment anyway (whether or not there is a famine) are not well protected by this mechanism. Dealing with disability calls for much finer tuning, and provides a ground for the belief that no matter how successful the employment scheme might be, in order to prevent famine deaths altogether, something else is needed to supplement payment for employment. A more comprehensive scheme of social security is of obvious relevance to this problem.

The system of cash relief also has the advantage of supporting (and in some cases, regenerating) the infrastructure of trade and transport in the economy (through increased demand and more economic activities), with lasting benefits to the economy, rather than spending resources in setting up ad hoc and transitory arrangements for transport and distribution through bureaucratic channels. Furthermore, since the distribution of food to destitutes usually requires the setting up of "relief camps", the system of direct feeding can be very disruptive to normal family life as well as to pursuing normal economic activities, e.g., cultivating land. In contrast, cash relief can be provided without making people leave their homes, and it can take the form of the potential famine victims working in particular employment projects, without disrupting family lives or indeed the continuation of other economic activities that may survive the onslaught of the threatening famine.¹²

Any decision on the balance between cash relief and food relief must, obviously, be determined on pragmatic grounds, rather than on the basis of some general principles. However, insofar as one can judge from Indian success in famine relief, the strategy of paying cash wages for employment does seem to have much to commend.¹³ Insofar as cash relief has been tried in Africa, that

¹²On these issues, see Sen (1986).

¹³See particularly Jean Drèze's (1986) major study of "famine prevention in India". These and related issues have also been discussed by Basu (1981, 1984), Clay (1986), Harriss (1986a), McAlpin (1986), among others. See also Berg (1972), Singh (1975), Subramanian (1975), and Oughton (1982).

too seems to have had a fair amount of success. This applies, for example, to an innovative "cash for food" project sponsored by UNICEF in Ethiopia, explicitly aimed at dealing with entitlement failures of vulnerable occupation groups, leaving the problem of the "response" to the market.¹⁴

There have been, of course, a number of cases of very successful famine relief in Africa as well. To take one example, the relief system set up in response to drought in Botswana during 1983-85 was clearly a major success. There were a number of innovative features in that system, including complementing a feeding programme (both direct and supplementary) with an employment-based relief system, and it is estimated that this employment programme had the effect of replacing about a third of the incomes lost as a result of the drought.¹⁵

One of the important features in Indian famine relief policy is the efficiency of the administrative structure. There have been, of course, tales of failures and horrors as well. But these are relatively rare compared with the enormity of the task. The point is sometimes made that the lessons from the Indian experience in famine relief cannot be applied to Africa because of the limitation of its administrative structure. There are, of course, variations in the nature of the administrative structures in different countries in the world. But a simple generalisation of the kind quoted would be hard to defend. A number of African countries have had relatively successful relief programmes and

¹⁴Bjoerck (1984), Kumar (1985), and Padmini (1985).

¹⁵See Morgan (1985 1986). On a general assessment of the relief programme in Botswana, see Hay, Burk and Dako (1986).

food administration, including Botswana, Kenya, Tanzania, Zimbabwe, and others, with varying degrees of success.

Some of the relief programmes carried out in Africa have involved extremely elaborate administrative actions. Furthermore, a number of African countries have had interventionist programmes of highly ambitious forms in other fields. An example is the Tanzanian crash programme of expanding primary education and literacy, which - despite its difficulties and limitations - did achieve a much higher level of literacy than in, say, India (the adult literacy rate around 1980 was estimated to be 60 per cent in Tanzania as opposed to 36 per cent in India¹⁶).

In fact, the concentration on income creation, rather than on directly feeding the destitutes, through government channels is itself one reason for the administrative success of famine relief in India, since it limits the necessary activities of the government in quite a major way. The tasks involved in purchasing, acquiring or requisitioning transport vehicles so that the government can itself move food grains, and the organization involved in the delivery of food to the destitutes, are quite exacting. If the administrative structure is limited, that surely is a strong argument in favour of concentrating on remedying the main problem (viz., loss of purchasing power) that cannot be left to the private sector.

Creating income for those who have lost their sustenance through drought, flood, or unemployment caused by other factors, is not something that the private sector can be relied on to do on its own. Obviously, no private entrepreneur has any particular

¹⁶See World Development Report 1983 (Washington, D.C.: The World Bank, 1983), p. 148.

interest in giving jobs to destitutes on a large scale to dig wells or build roads, irrespective of private profit. On the other hand, once such employment has been created and incomes have been generated, private traders do have an incentive in meeting the newly-created market demand, with the revived destitutes now being able to pay cash for the food they need. The consideration of administrative deficiencies is, in fact, an argument in favour a limited but active programme concentrating on what the government can do best (and possibly can do uniquely). Thus the distinction between giving the destitute the ability to command food, and actually feeding the destitutes, is an important one in this context.

Food supply and famine relief

The magnitude of the achievement of the relief system against threatened famines in India can be appreciated by looking at the comparative picture of food production and availability in famine-threatened situations in India vis-a-vis those in the Sahel countries. The comparative figures are presented in Table 2, with 182 kg. per head per year standing for 100. The figures cover 1966 to 1974. This period includes the threatened Bihar famine in 1967, and the threatened Maharashtra famine during 1971, 1972 and 1973. It also includes the Sahel famine of the early 1970s.

It may be noted first that the Sahel region had higher food availability than India as a whole throughout the period except for 1972. More importantly, the collapse of food production and food availability in the famine-threatened years in

Table 2

Food Production and Availability in Famine-affected Sahel
and Famine-threatened India, 1966-74
(100=182 kg per head per year)

	<u>Production</u>				<u>Availability</u>			
	Sahel	India	Bihar	Maharashtra	Sahel	India	Bihar	Maharashtra
66	113	69	63	49	105	72	62	
67	124	72	35	62	115	73	45	
68	126	88	75	68	118	81	85	75
69	116	87	79	67	111	80	75	74
70	98	90		63	93	81		68
71	102	96		51	101	84		55
72	75	92		46	76	84		57
73	78	83		27	85	76		46
74	115	68		62	120	82		73

Source: Dreze (1986), Tables 2.2a and 2.2b

Bihar (1967) and in Maharashtra (1971-73) is very much sharper than in the Sahel countries. While in the Sahel, the food production figures go down to the index value of 75 and 78 in 1972 and 1973 respectively, and the availability figures have the values 76 and 85 respectively for those years, the index value of food production in Bihar in the famine-threatened year of 1967 is just 35, and even the food availability index is only 45. Similarly in Maharashtra, in the famine threatened years of 1971, 1972 and 1973, the food production figures are 51, 46 and 27 respectively, and the corresponding food availability figures are 55, 57 and 46.

Even if the food availability figures for the different Sahel countries are considered separately for 1966-74, none of the Sahel countries among the six (i.e., Chad, Mali, Mauritania, Niger, Burkina Faso, and Senegal) had as low a food availability in any year as Bihar in 1967, nor as low as Maharashtra in 1973.¹⁷ The fact that the threatened famines in India could be averted despite the much more severe food-availability situation in those famine-threatened states than in the Sahel countries during their famines is a considerable tribute to the relief system.

In interpreting the figures presented in Table 2, it should be noted that the availability figures in the famine-threatened states are consistently higher than the production figures. This reflects inter-state food movement in the right direction (and not "food countermovement"), and this was undoubtedly helped by the enhancement of the purchasing power in

¹⁷See Drèze (1986), Table 2.2b.

the famine-threatened states through employment projects and the creation of wage incomes (buttressing planned transfers of food from the central government's stocks). But it should also be noted that even after the inter-state transfers, the total food availability (not just production) in the famine-threatened states in India were extraordinarily low - much lower than in the Sahel countries.¹⁸ Despite that, the threatened famine did not, in fact, occur, and this is because the inter-state redistribution of food grains was supplemented by an enormous intra-state redistribution, with the potential famine victims being able to command a higher share of the food of the state with the enhanced purchasing power generated by the relief system.¹⁹

In the famine relief programmes in Maharashtra, nearly five million people were being given cash wages for employment in relief schemes. With their dependents, the five million beneficiaries would have represented a very substantial section of the population indeed. Undoubtedly, this gigantic project saved many millions of people from starvation, and protected a very large number from premature mortality.

Politics and the news media

While the form of the famine relief in India (e.g., government stocks, relief employment and cash wages) is a matter

¹⁸The availability was much lower also than in Ethiopia during the famines of 1973 and 1974; on this see Sen (1981), pp. 92-3.

¹⁹Drèze (1986) discusses how the enhanced purchasing power of the vulnerable groups as a result of the relief system in Maharashtra did inter alia have the effect of reducing the consumption of the richer sections of the population, thereby releasing a larger relative share of the total food availability for the use of the potential famine victims.

of economic decision, the success of this type of intervention depends on the alertness of the information system and speedy public response, both of which involve factors that go well beyond pure economics. I have tried to argue elsewhere that both the informational alertness and the quickness of public response are sharply enhanced by the role of the news media and the pressures generated by the opposition parties in India.²⁰ It is the news media that make it impossible for the governments - at the centre and at the state - to ignore a threatening famine. While, on the one hand, it provides a government with valuable early information (an active news media is perhaps the best "early warning system" that a country can have), it also, on the other hand, makes it imperative for the government to take some countermeasures to the threatening famine to avoid embarrassment in public and losing credibility (and perhaps the following election). The success of the Indian anti-famine policy cannot, therefore, be discussed without going into the social and political features involved in the active roles of the news media and the opposition parties.

Many features of Indian famine relief policies do, in fact, go back to the Famine Codes formulated during the last part of the 19th century. Indeed, the Famine Commission of 1880 provided a very enlightened analysis of the causation of Indian famines (stressing, inter alia, the connection of famine mortality with the decline of purchasing power of particular occupation

²⁰See Sen (1983, 1986). Ram (1986) has studied the problem in much greater depth, with extensive empirical studies of the response patterns of the Indian press.

groups). The British Indian administration's record in famine prevention in India was not particularly praiseworthy in much of the 19th century and earlier, but after the Famine Code was adopted in the 1880s there was potentially an effective and efficient system of famine relief in India. Indeed the famine relief policies pursued in India in the post-Independence period can be seen as extensions and refinements of policies that were worked out in the late 19th century British India. Even the policy of employment creation at cash wages was among the means of famine relief explicitly discussed and commended in the Famine Code.

The problem with the Famine Codes is, however, a political one. When they were invoked and put into practice in an active way, famine relief was indeed easily achieved. But often the Famine Codes were invoked too late. Sometimes they were not invoked at all. For example, during the Great Bengal Famine of 1943 the Famine Code was never invoked.²¹ The politics of colonial rule in India made this possible, since there was no powerful democratic pressure that could force the government to invoke the Famine Code despite its unwillingness to do so. This did, however, require suppressing the press, and in 1943 this was particularly easy, both because of the colonial administrative powers and because of the priorities of the Second World War. It is interesting that even when the British-Indian Government was

²¹The Governor of Bengal, Sir T. Rutherford, explained in a letter to the Viceroy that it was a part of a deliberate decision not to invoke the Famine Code; see document 158 in Mansergh (1973), p. 363.

forced to intervene belatedly and very weakly (without invoking the Famine Code) in the Bengal famine of 1943, a lot of the forcing came from the powerful news coverage and the crusading editorials in the newspapers, particularly in the influential Calcutta paper, The Statesman.²²

In post-Independence India, the role of the news media is, of course, much more explicitly recognized and accepted. The speed is also much higher. The crusading editorials in The Statesman came only in the middle of October 1943, after the famine had been raging for about five months and after the death toll in the city of Calcutta itself had risen to about 38,000 per week. The current response of Indian newspapers to threatening famine situations tends to be, of course, very much quicker and pervasive. This is, in fact, one of the positive sides of the nature of Indian democracy. In each of the threatening famines, whether in Bihar in 1967, or Maharashtra in 1971-73, or in West Bengal in 1979, the press has played a major part in making the facts known and forcing the hands of the respective state and central governments. The political pressures from opposition parties forcing the governments to act have tended to follow news reports in the press.

Africa has been, in general, less fortunate in terms of the press and the news media, and also there tends to be typically rather less political plurality within each country. The

²²The Statesman was a British-owned paper, edited by a remarkable journalist called Ian Stephens. Excellent accounts of this battle can be found in his autobiographical writings, entitled Monsoon Morning and Unmade Journey: Stephens (1966, 1977).

indigenous and collaborative attempts at developing a powerful news media in Africa, using aggressive journalism, has been thwarted by domestic as well as international politics. The latter includes big-power rivalries, giving neither side any noticeable inclination to support diversification of political power and the control of news. In this respect, both the "free market" West and the "socialist" East seem to support similarly monolithic political structures in Africa (paying more attention to the loyalty of the government in question to the respective big powers). One of the important aspects of anti-famine policy is to make the threatening famine visible by spotting early signs and by demanding counteracting actions. This has, in many ways, proved to be a harder thing to achieve in Africa than in India, and the weakness of the news media has contributed to this.

I should mention that even in India there is much scope for political pressure to achieve more, especially in tackling non-famine, persistent hunger. One of the extraordinary aspects of the food problem in India is that endemic hunger and malnutrition seem to be tolerated rather quietly, without pressures from newspapers or opposition parties demanding fast remedial action. The clear visibility of deaths due to starvation - even when it takes place in relatively small numbers - seems to contrast with the hidden nature of extensive endemic hunger. The former gets media attention immediately; the latter hardly ever. The suffering and the enhanced morbidity and mortality connected with widespread endemic hunger in the regular existence of the rural poor turns out to be easier to ignore as a feature of the

economy than the more manifest early signs of starvation indicating a threatening famine. There is certainly very considerable opportunity in India of reaping more from enhanced alertness and involvement on the part of the news media and political opposition in dealing with endemic hunger.

However, as far as famines are concerned, the India news media and political opposition already do achieve a very great deal. In Africa there is much more scope for the press to do more in tackling the problem of famine, over and above that of regular undernourishment. The social and political problems involved in news distributions and party politics are important subjects to study (1) for effective famine relief in Africa, and (2) for a greater contribution to the reduction of endemic hunger both in Africa and in India.²³

Sex ratio and the gender bias

So far I have been dealing with a subject, viz., famine prevention, in which India has achieved a fair amount, and from the experience of which something can be learnt that is of interest to Africa. There is a great deal to learn from Africa on the part of India as well. I have already referred earlier to examples of activism of some African governments, e.g., the speedy enhancement of literacy and primary education in Tanzania. The continuing low level of literacy in India indicates a governmental

²³This is discussed in Sen (1983) and Ram (1986). See also George (1976) and Sobhan (1979, 1986) on other political aspects.

failure and also public apathy on the subject.²⁴ On matters of political determination and public activity there are many things that India can learn from a number of African countries.

However, in the rest of this paper I am going to concentrate on a problem in which the exact role of public action is hard to disentangle, and in which economic, political and cultural matters are all relevant. I refer to the problem of gender bias or sexual inequality. The nature of this bias is reflected even in such crude statistics as the so-called "sex ratio", i.e., the number of females per males in the population.²⁵

In the richer and economically more advanced countries, the number of women per 100 men in the total population tends to be around 105 or 106 (apparently because of certain biological advantages of the female in survival, especially at the higher ages). In much of Asia, in sharp contrast, the number of women is substantially lower than the number of men in the population. India and the other countries in South Asia have among the lowest sex ratios in the world. In contrast, in Africa the number of women considerably exceeds the number of men. Though the ratio is not as high as in Europe or America, nevertheless the African ratio of 1.015 is much closer to the value in the richer, developed countries than the Asian ratio of 0.953, and the Indian

²⁴On this the press and the other news media in India have shown relatively little interest and involvement.

²⁵The sex ratio is sometimes defined as the number of females per male, and sometimes as the number of males per female. I shall use the former convention, which is the one standardly used in Indian demography.

one of 0.931. Even in the Third World, India lies very much at one extreme, along with Pakistan and Bangladesh, and Africa lies at the other end of the range, with a sex ratio considerably higher than unity.

In Table 3 the sex ratios in 1980 for different regions of the world are presented, calculated from demographic tapes provided by the United Nations. So are the estimated life expectancy ratios for 1980-85. Virtually everywhere in the world the life expectancy of the female at birth is considerably higher than that of the male. Even in China, with a very low over-all sex ratio (0.941), the life expectancy ratio is considerably higher than unity (1.034). On the other hand, in India, Pakistan and Bangladesh the life expectancy ratios are respectively 0.993, 0.961, and 0.979. These countries are altogether exceptional in having a lower expectation of life at birth of women than of men, even in the last census.

Missing women: India and China

It is interesting to calculate the number of women we would expect to have in India, given the number of men, if the African sex ratio were to hold in India. At the African ratio, there would have been nearly 30 million more women in India than actually live today. This number is calculated by taking the number of Indian males, multiplying it by the sex ratio in Africa, and then comparing the derived would-have-been number of Indian women with the actual number. In Table 4, the percentages as well as the absolute numbers of "missing women" are given for India,

Table 3

Sex Ratio and Life Expectancy Ratio

(female/male)

<u>Region</u>	<u>Sex Ratio</u> <u>1980</u>	<u>Life Expectancy Ratio</u> <u>1980-85</u>
World	0.990	1.047
Western Europe	1.064	1.104
Eastern Europe	1.056	1.098
United States	1.054	1.106
Latin America	0.999	1.078
Asia	0.953	1.022
of which:		
India	0.931	0.993
Pakistan	0.929	0.961
Bangladesh	0.939	0.979
Western Asia	0.940	1.052
Eastern & South-Eastern Asia	1.008	1.066
China	0.941	1.034
Africa	1.015	1.065
of which:		
Northern Africa	0.986	1.050
Non-Northern Africa	1.024	1.071

Source: Calculated from the tapes of the United Nations' (1985 "Estimates and Projections of Population", as assessed in 1984. Note that "Eastern and South-Eastern Asia" excludes China and Japan.

Table 4Missing Women

(at African female-male ratio)

	<u>Percentage</u>	<u>Number of Women</u> Missing (Millions)
India	8.4	29.9
Pakistan	8.6	3.8
Bangladesh	7.6	3.5
China	7.4	38.2

Source: Derived from Table 3.

Pakistan, Bangladesh, and China. The number of "missing women" is proportionately comparable in Pakistan and Bangladesh to that in India, even though in absolute numbers they are much smaller, viz., 3.8 million and 3.5 million respectively.

In China the number of "missing women" is even larger than in India, viz., more than 38 million, even though in percentage terms it is a little smaller than in India. However, the Chinese situation is made more tolerable by the fact that the expectation of life at birth of the female is now significantly longer than that of the male, conforming to the pattern in the rest of the world. The Chinese sex ratio, which is still very considerably below unity, can be expected to adjust correspondingly in the African direction. In India such a shift was not yet clearly observed in the last census in 1981, even though there is some indication that the cross-over might be taking place at about this time.²⁶

Gender bias and women's place in production

It is not easy to find an agreed explanation of the lower level of gender bias in Africa compared with Asia, especially India and the Indian sub-continent. There are many economic,

²⁶It is interesting to ask whether the differences in sex ratio are primarily reflections of differences in sex-specific mortality rates, and whether differences in sex ratio at birth may play a substantial part in explaining the lower sex ratio in India compared with that elsewhere in the world. This question has been addressed effectively by Visaria (1961), demonstrating that the difference is primarily related to mortality rates rather than to especially low birth ratios of the female vis-a-vis the male in India.

political and cultural factors involved in gender bias.

There are considerable differences of views as to how the observed gender bias in mortality is brought about in South Asia. There is some evidence of inequalities in the nutritional status of girls vis-a-vis boys, with girls more undernourished, in observations made in different parts of India and Bangladesh (see, for example, Chen, Huq and D'Souza 1981, Sen and Sengupta 1983, Taylor and Faruque 1983, Hassan and Ahmad 1984, Sen 1984a, Agarwal 1986, Bhuiya et.al. 1986). There is some historical and anthropological evidence suggesting inequalities in the division of food between boys and girls (see, for example, Miller 1981). But the empirical evidence is not by any means unambiguous, and there seem to be considerable variations, both between regions (e.g., between North and South India, on which see Pranab Bardhan 1974, 1982, Miller 1981), and also within the same region (e.g., the sharp difference between the levels of observed sex bias in nutritional status of children in Kuchli vis-a-vis Sahajapur, two villages close to each other in the same district of West Bengal, studied by Sen and Sengupta 1983). There also exist some observations contrary to anti-female bias in the divisions of nutrients (on which see, for example, Wheeler 1984, Harriss 1986b, Kakwani 1986, Alaka Basu 1987).

There is also evidence in favour of the hypothesis that girls receive less health care and medical attention (see, for example, Chen, Huq and D'Souza 1981, related to Bangladesh, and Kynch and Sen 1983, Taylor and Faruque 1983, Das Gupta 1987, related to different parts of India). Indeed, while studies in

this field have been less plentiful (partly because of difficulties of observation as well as of interpretation of the observed data in terms of relative health needs and fulfilment), there seem to be greater agreement among writers in this field on the existence of a sex bias in the division of health care than on the prevalence of a sex bias in the distribution of food. In fact, some authors entertain the hypothesis that the inequality in question may perhaps come almost entirely from medical inequality rather than food inequality.

Much more empirical work has to be done to arrive at a more definitive picture regarding the exact mechanics underlying the unusual sex bias in mortality in India and South Asia. However, a couple of general points may be worth making here to clarify the nature and import of these debates.

First, the inequalities in observed nutritional levels of boys and girls (e.g., in the village surveys of Sen and Sengupta 1983) must not be interpreted, as they sometimes have been, as clear evidence of inequalities in the division of food itself. Even if there were no discrimination in food intakes, but girls received systematically less medical attention and health care than boys, the nutritional levels of girls would tend to be lower than those of boys. The achievement of nutrition (i.e., the "functioning" of "being well-nourished"), in terms of any reasonable health criterion (e.g., weight for age, as in Sen and Sengupta 1983), could be expected, under the circumstances specified, to be higher for boys than for girls, e.g., due to a higher incidence of parasitic diseases among girls. The

nutritional status of a person is not the same thing as the food intake of the person. Rather, being nourished is a state of being of the person influenced by many factors of which food intake is one (undoubtedly an important one!).

Second, it is not at all clear that the objectives of the family heads can be best understood in terms of any intrinsic gender bias regarding inputs of food, health care, etc., rather than that regarding functionings of the people involved. That is, if the family head is more worried about the illness or undernourishment of boys than of girls, then this bias regarding desired functioning achievements will be reflected, in a derivative way, into biases in the division of food, health care, etc., without these latter - derived - biases being the primary concerns of the decision takers. If the problem is seen in this light, it seems, on the one hand, a little unlikely that the instrumental biases could be, in general, confined exclusively to some inputs (e.g., health care), without applying to the others (e.g., food).

On the other hand, it may not in fact always matter precisely how this functioning-bias is brought about (the exact process will depend presumably on contingent circumstances of the respective situations), and the more basic parameter to wrestle with would be the desire for, or the tolerance of, these functioning biases involving nourishment, morbidity, mortality, and so forth.²⁷

Third, the desire for, or tolerance of, gender-related functioning inequalities may itself derive from other - more basic

²⁷ One of the variables that has received some serious attention in the context of India (see, for example Bhatia 1978) is the desire for having male children - in the sense of giving birth to them and taking special care to make them survive. This preference for having sons may, of course, in its turn be influenced by other variables, but it may be an important link in the chain, influencing the contingent choice of instrumental divisions of food, medical care, and so on. On this, see Das Gupta (1987).

- objectives, such as economic success (the family head's economic future may depend more on the survival of boys than on the survival of girls), social standing (the "mother of a successful son" may have more status), or some perceptions of "legitimate" order (more favourable to the males) influenced by prevailing cultural values. If public policy is to be geared towards eliminating or reducing sex bias in the "well-being and survival" of girls vis-a-vis boys, and of women vis-a-vis men, then we may sensibly focus attention primarily on these underlying deeper causes, rather than starting off with the exact details of the instrumental choice (e.g., divisions of food or medical facilities) in the generation of sex bias in morbidity or mortality.

The relative earning powers of men vis-a-vis women have received attention in some of the recent literature (see particularly Rosenzweig and Schultz 1982, Behrman 1986, Bardhan 1987). From the point of view of the family head, the return to rearing boys successfully may well be greater than doing the same for girls.

But the family decisions relevant to sex bias in well-being and survival cannot be seen as being arrived at by exactly one adult decision-taker deciding on who gets what, since there are also problems of division of labour and benefits among the adult members as well, on which different adult members may each have some say. This in turn may influence the relative treatment of girls and boys also. The perspectives of the "bargaining problem", and more generally of "cooperative

conflicts", have been invoked in the context of sexual divisions by a number of authors recently (see, for example, Manser and Brown 1980, Sen 1985), and while any such "bargaining" may be largely implicit rather than explicit, the problems of combining cooperation with resolving conflicts may well be particularly relevant in understanding the nature of household equilibria.²⁸ In particular, it is useful to consider the nature of the "breakdown point", related to the understanding of what each party can respectively do on its own, which is central to the formulations of the standard bargaining problem by Nash (1950) and others. It is also central to understanding the nature of the "extended entitlements" involved in notions of legitimacy regarding who has "contributed" how much to the family opulence and thus who "deserves" what in the division of the jointly begotten cake.²⁹

These considerations can be expected to apply to sexual divisions in all the different societies, in different parts of the world, but they may not apply in the same way given the objective differences in the circumstances of the different societies (e.g., in terms of economic roles as well as cultural values). One of the factors that may be parametrically relevant in understanding the contrast between Africa and India is the extent of female participation in the so-called "gainful

²⁸On the relevance of this type of considerations in interpreting historical developments, see Tilly (1986).

²⁹The concept of "extended entitlements" of members of the family, and its relation to both (1) the over-all entitlements of the family, and (2) divisions within the family, are discussed in Sen (1985). See also Sen (1984a, 1984b).

activities" - earning an outside income or producing a tangible good outside the home. Ester Boserup (1970) referred to this in the context of studying Africa, and the contrast has been used to understand the problems of Indian women and the regional differences within India (see, for example, Pranab Bardhan 1974, 1982, 1984, 1987, Miller 1981, 1982, 1984, Bennett 1983, Kalpana Bardhan 1985, among others).³⁰

It is important to recognize that outside earnings not only provide a basis for the adult heads to estimate "rates of return" from raising boys and girls respectively, but they are also relevant for the nature of the freedom, power and status that adult women may enjoy vis-a-vis adult men, since they will - inter alia - influence "breakdown points" as well as the perceptions of who is "contributing" how much to the family.³¹ In fact, the existence of a partly independent life outside the home also has social effects that may be no less important than the purely economic ones in terms of earnings or support. From many different points of view, the issue of outside activities may, thus, be quite a useful one to examine in trying to understand the differences in sex bias in different broadly-defined cultures.

Do the differences in the so-called "activity rates" between India and Africa, and other such broad regions, throw any suggestive light on sex bias in well-being, and specifically on the differences in mortality and life expectancy of men and women

³⁰ On related matters, see Chakravarty (1986). Ruth Dixon (1983) has provided an interesting analysis of international contrasts of women's involvement in agriculture.

³¹ On this, see Sen (1985). That paper also refers to various empirical micro-studies relating women's status to the nature of their work activities (such as Bhattu 1980, Mies 1982). It must be noted that the standard ideas of "gainful activity" or "productive work" are themselves extremely biased, since these activities are, in fact, parasitic on other types of activities (such as housework, cooking, rearing children, etc.) being performed. This type of perception of what is "gainful" and what is "productive" tends to militate against giving an appropriate value to women's work in traditional societies, and this bias may lead to severe underestimation of women's work, both inside and outside the home (on this see Beneria 1981, Bryceson 1985, Jain and Banerjee 1985). While the "perception bias" should be subjected to severe scrutiny and criticism, and this might have an important role in creating the conditions for the removal of sex bias (see Sen 1985), nevertheless in explaining the interregional variations, the bias in the perspective has to be explicitly recognized (and related to observed differences in causal influences and results).

in these different regions of the world? Indeed, the relative activity rates of women are considerably higher in Africa than in Asia, in a similar way to sex ratios and life expectancy ratios. But there are variations also within Africa and within Asia, even between the broad regions, such as South Asia (including India) and Eastern and South-eastern Asia. Within Asia there are considerable variations between Northern Africa and the rest of Africa. In Table 5 these activity rates are presented for five major regions in Africa and Asia, viz., Northern Africa, Non-Northern Africa, Western Asia, Southern Asia, and East Asia and South Eastern Asia.

As mentioned before Southern Asia has the lowest sex ratio, closely followed by Western Asia and then North Africa. All these regions have sex ratios below unity. On the other side of the line we find Non-Northern Africa and East and South-Eastern Asia.³²

While the sex ratio reflects the overall results of

³² It should be noted that China has not been included in the latter group.

Table 5

Gender Bias in Survival and Female Earning Activity

Regions	Sex ratios 1980 (female/male)		Life expectancy ratios 1980-85 (female/male)		Activity rate ratios 1980 (female/male)	
	Values	Ranks	Values	Ranks	Values	Ranks
Non-Northern Africa	1.024	1	1.071	1	0.645	1
Eastern and South-eastern Asia	1.008	2	1.066	2	0.610	2
Western Asia	0.940	4	1.052	3	0.373	3
Southern Asia	0.935	5	0.989	5	0.336	4
Northern Africa	0.986	3	1.050	4	0.158	5

Notes: Calculated from the United Nations' (1985) tapes on 'Estimates and Projections of Population', as assessed in 1984, and from ILO (1986). All the countries for which data are given in these sources are covered in the aggregative picture presented in this Table. Northern Africa includes Algeria, Egypt, Libya, Sudan and Tunisia, while Non-Northern Africa includes the rest of the African countries. Western Asia includes Bahrain, Cyprus, Iraq, Israel, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, Syria, Turkey, United Arab Emirates, Yemen and Yemen PDR. Eastern and South-Eastern Asia includes Burma, Hong Kong, Indonesia, Kampuchea, Korea, Korean PDR, Laos PDR, Malaysia, Mongolia, Philippines, Singapore, Thailand and Vietnam (but not China). Southern Asia includes Afghanistan, Bangladesh, Bhutan, India, Iran, Nepal, Pakistan and Sri Lanka. Activity rate ratios, taken from ILO (1986), are defined in terms of the population involved in so-called "economic" (or "gainful") activities, as percentages of total population of each sex respectively.

historical differences in mortality rates over the potential lifetimes of people, the calculation of life expectancy ratios is based on current mortality rate for each age group. The figures for life expectancy ratios are given also in Table 5, revealing a slightly different ranking from the sex ratios. In particular the relative positions of Western Asia and Northern Africa are reversed, with no other difference.

It is interesting that the activity rate ratios (female activity rate divided by the male activity rate) has a ranking that is extremely similar to the female-male life expectancy ratios. In fact the rank order of the different regions are exactly the same, with only one exception (the relative positions of South Asia and Northern Africa are reversed). I am not sure that a great deal of importance should be attached to this close coincidence of the two sets of ratios, but it is possible to argue that the higher female activity rates (vis-a-vis the male rates) go with social and economic structures that are more favourable to the position of women, acting against gender bias.

It is difficult to decide what the units of analysis should be. Some influences are supposed to operate at very much the individual level, e.g., the influence on decisions of family heads on the different future earning potentials of female vis-a-vis male children, viewed as a purely economic calculation (see, for example, Rosenzweig and Schultz 1982). On the other hand, if the nature of female activity and participation in earning influences the overall standing and power of the female in the general culture and through that affects notions of

"legitimate inequalities" and the nature of gender bias, one would not expect this to be adequately reflected in individual decisions taken in isolation.

The approach pursued here takes more the latter line than the former. This raises the question as to what the boundaries of social and cultural influences may be taken to be. The broad categorization presented in Table 5 relates to a correspondingly wide view of cultural influences. For example, the distinction between Northern Africa and Non-Northern Africa has some substance at a general cultural level, especially in terms of the impact of the Middle East, but obviously overlooks a great many distinctions that would operate within each region, varying from country to country. Even if a finer classification of cultures was sought, it is not obvious that the countries would provide the best basis of study, since some of the political divisions between one country and another happen to be quite arbitrary, imposed by the nature of western political dominance and the historical division of Africa among the erstwhile colonial powers. Be that as it may, the nature of the relationships observed in Table 5 must be seen to be no more than something suggestive about the link between female earning activity and gender bias in survival.

There are other complications in viewing the relationships in these terms. For example, the influence of female earning activity may depend not merely on activity rates, but also on

actual earnings and the nature of the jobs held.³⁴ Even if the activity rate has an influence, it must be only one influence among many, and the nature of the relationship studied in Table 5 should not make us think that somehow "the central influence" on gender bias in survival "must have been" unearthed.

Coming back to the question as to what India has to learn from Africa in this field, there are some things that can be more easily said than others. First of all, the distressingly low sex ratios in India contrast sharply with that of Africa in general, and particularly with Non-Northern Africa. The estimates of "missing women" is a presentational device to bring out the orders of magnitudes of the differences involved. 30 million "missing women" in India is a quiet statistic, which expresses a terrible story of remarkable inequality and relative neglect. It is the systematic excess of age-specific female mortality rate over male mortality rate in India (going all the way up to the ages of late thirties) that has led over time to the observed differences in sex ratios, and the deficit of women in the Indian population. No matter what causal analysis we eventually come up with to explain this difference, it can hardly be denied that a comparison with Africa brings out the extraordinary nature of Indian (and in general South Asian) gender bias reflected in the elementary

³⁴The fact that this can make a difference is brought out in the context of inter-state contrasts within India, on which see P. Bardhan (1987). Tilly (1986) has discussed in a historical context the importance of the nature of respective types of work and rewards, and the varying social arrangements that go with them. See also Sen (1985).

statistics of lower female survival.³⁵

Second, insofar as the activity rate contrast brings out anything, it seems to indicate that the higher female participation in earning activities in Non-Northern Africa may well be a considerable influence against some of the extreme forms of gender bias, unlike in many other parts of the Third World and especially in India and the rest of South Asia. As was mentioned earlier, this influence must be one among many,³⁶ even though the pattern of overall regional contrasts is not negligible. Also, the sharp contrast within Africa - between Northern Africa and Non-Northern Africa - is quite consistent with a story relating activity rates to gender bias and survival (see Table 5). Here too there is a tentative lesson which would have to be taken seriously and examined.

Concluding remarks

In this paper I have discussed some possible lessons that can be learnt by Africa and India from the experience of each other. As far as lessons from India are concerned, I have discussed the relative success of India in the prevention of famines since Independence, and have tried to relate it both (1) to the nature of the relief provided (especially the use of

³⁵See also Kynch and Sen (1983) and Sen (1984a).

³⁶Indeed the combination of a lower activity rate ratio of Northern Africa than Southern Asia and its somewhat higher sex ratio (and life expectancy ratio) indicates that there must be other factors to be looked at.

government stocks, employment schemes and cash wages), and (2) to the political and social systems of news distribution and of opposition pressures on the nature of government action. The contrast between India and Africa is not, of course, a clear-cut one, and considerable variations can be found within Africa in terms of success in famine prevention. As it happens, the particular lessons learnt from India appear to be consistent with these contrasts.

The enormity of India's success in famine prevention can be fully appreciated only if the precarious nature of the food availability situation in various threatened famines in India is closely examined and contrasted with actual famines in Africa, revealing the fact that the food availability situation was very often remarkably more adverse in India than in Africa. Even today the Indian availability per head of food, measured in terms of calories, is no higher than in much of Africa, and indeed considerably lower than that in many countries in sub-Saharan Africa which have experienced famines recently. The absence of famines in India is to be traced, therefore, to factors other than food availability, and in this context some of the economic, political and social factors involved in the contrast have been examined.

On the other side, I have tried to analyze the differences in gender bias in India vis-a-vis Africa, pointing to the excess of female mortality over male mortality rates in India compared

with that in Africa.³⁷ The figure of 40 million "missing women" in India (at the African sex ratio) is just a presentational device to bring out the extraordinary magnitudes involved in differential survival rates. It can scarcely be doubted that the nature of gender bias in India is remarkably sharper than in Africa in some matters of life and death, and this fact in itself is an issue to which Indian economists and other social scientists must pay attention. It is one thing for a poor, Third World country like India to have a lower sex ratio than Europe or America, but it is quite another to see how the India picture contrasts with that of Africa, which also belongs to the Third World in much the same way.

Aside from taking full note of the differences in sex ratios and life expectancy ratios and the corresponding magnitudes of "missing women" in India, there is also some causal factors that need investigation. One particular influence that was briefly examined relates to the differences in the ratio of female and male activity rates between India, on the one hand, and Africa, on the other (especially non-Northern Africa). The original Boserup (1970) hypothesis that a lower relative involvement of the females in "productive" or "gainful" activities

³⁷ There are also sharp differences within India in the gender bias in survival, among the different states. On this see particularly Miller (1982) and Bardhan (1987). It may be noted that the only state with a higher sex ratio than unity in India is Kerela, which has, in fact, a higher sex ratio (1.032) than non-Northern Africa itself. Since Kerela is a state with a great deal of public intervention in health and education (and a much higher female literacy rate than in the rest of India), the role of such activities may well be fruitfully examined.

may be an influence in favour of gender bias gets some tentative confirmation on the basis of broad interregional contrasts among different parts of Asia and Africa.³⁸ Even the contrast between Northern Africa and Non-Northern Africa tends to confirm the hypothesis. There is perhaps some lessons to be learnt here for further research and eventual use in actual policy making, and more generally in working for political and economic change.

There are indeed a great many lessons to be learnt by India and Africa from the experiences of each other. The two issues that I have discussed here relate to crude matters of life and death. There are many subtler lessons and finer questions to be discussed. But the crude issues do have some immediate importance, since millions of lives are involved. The terrible facts of continuing famines in Africa and enormous gender bias in India command our attention. I have tried to discuss some directions in which such attention may be fruitfully channeled.

³⁸China is, however, an exception to the relationship that can be read from Table 5. The Chinese sex ratio is indeed very low, viz., 0.94, much the same as that of Western Asia and its life expectation ratio is also very low (1.033), lower than for every region covered in Table 5 with the exception of Southern Asia. On the other hand, the activity rate ratio in China is very high (0.808), reflecting a part of the political policy of the Chinese leadership. This high activity ratio is of relatively recent origin, and the age specific activity ratio declines rather sharply in China as we move to higher ages. It has been speculated that the governmental policy of limiting the family has tended to strengthen the nature of the gender bias in survival, given the pre-existing cultural influence in favour of boys. There are many particular issues to be studied in fully appreciating the nature of the Chinese experience in this field, and I have not attempted to go into this question here.

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