

# Contents

<i>List of Tables, Boxes and Figures</i>	vii
<i>List of Abbreviations</i>	x
<i>Acknowledgements</i>	xiii
<i>Notes on the Contributors</i>	xiv
<i>Introduction</i>	xvii

## **Part I Vulnerability to Hunger: Causes and Remedies**

1 National Food Policies Impacting on Food Security: The Experience of a Large Populated Country – India <i>Shabd S. Acharya</i>	3
2 Food Security in the South Pacific Island Countries with Special Reference to the Fiji Islands <i>K.L. Sharma</i>	35
3 Food Security in the SADC Region: An Assessment of National Trade Strategy in the Context of the 2001–03 Food Crisis <i>Andrew Charman and James Hodge</i>	58
4 On the Edge: The Role of Food-based Safety Nets in Helping Vulnerable Households Manage Food Insecurity <i>Lynn Brown and Ugo Gentilini</i>	82
5 The Public Distribution Systems of Foodgrains and Implications for Food Security: A Comparison of the Experiences of India and China <i>Zhang-Yue Zhou and Guanghua Wan</i>	106

## **Part II Gender and Hunger: The Links**

6 Gender, HIV/AIDS and Rural Livelihoods: Micro-level Investigations in Three African Countries <i>John Curry, Esther Wieggers, Alessandra Garbero, Shannon Stokes and John Hourihan</i>	131
7 Gender, Local Knowledge and Lessons Learnt in Documenting and Conserving Agrobiodiversity <i>Yianna Lambrou and Regina Laub</i>	161

- 8 Gender Differentiation in the Analysis of Alternative Farm Mechanization Choices on Small Farms in Kenya 194  
*Julliet Wanjiku, John Uhuru Manyengo, Willis Oluoch-Kosura and Joseph T. Karugia*
- 9 Women and Food Security in South Asia: Current Issues and Emerging Concerns 219  
*Nira Ramachandran*

**Part III Hunger as Entitlement Failure: The Right to Food**

- 10 Entitlement Failure from a Food Quality Perspective: The Life and Death Role of Vitamins and Minerals in Humanitarian Crises 243  
*Patrick Webb and Andrew Thorne-Lyman*
- 11 The Right to Food as a Fundamental Human Right: FAO's Experience 266  
*Isabella Rae, Julian Thomas and Margret Vidar*
- 12 Realizing the Right to Food in South Asia 286  
*Pradeep Bhargava and Manju Balana*
- 13 The Rights-based Approach to Development: Lessons from the Right to Food Movement in India 308  
*Basudeb Guha-Khasnobis and S. Vivek*
- Index* 329

# 1

## National Food Policies Impacting on Food Security: The Experience of a Large Populated Country – India

*Shabd S. Acharya*

### **Introduction**

India accounts for 16.7 per cent of the world's food consumers. India's size in terms of food consumers is many times larger than the average size of the rest of the countries, except China. At the time of independence in 1947, India was in the grip of a serious food crisis, which was accentuated by the partition of the country. The demand for food far exceeded supply, food prices were ruling at high levels and more than half of the population were living below the poverty line with inadequate purchasing power. With high rates of population growth, the dependence on imported food increased further. However, the situation improved considerably after the mid-1960s, when a new agricultural development strategy and food policy were adopted in the country. The production of staple cereals increased substantially, mainly contributed by productivity improvements. The dependence on food imports reduced and the country became a marginal net exporter of cereals. There was also an improvement in physical and economic access of households to cereals and other nutritive food products. The proportion of households reporting hunger went down and the incidence of economic poverty was reduced.

The objective of this chapter is to review the Indian approach to tackling the severe problem of food insecurity, which it faced immediately after independence. It reviews the evolution of food policy, the major policy instruments deployed, intervention in the food marketing system, and the current status of food security/insecurity. The chapter also identifies the lessons emerging from the experience of India.

### **Food policy and approach to food security in India**

India's food security problem can be traced to the discontinuation of rice supplies from Burma during the Second World War and infamous Bengal

Famine of 1943 (Sheriff 2004: 21–38). At that time, although a ‘grow more food’ (GMF) campaign was launched in 1943, the food policy revolved mainly around food imports, rationing and controls (Knight 1954). After the partition of the country, the food situation worsened due to the proportionately smaller area under cereals inherited by India. At the time of independence, with relatively high foodgrain prices the country experienced a wide gap between demand and supply. The problem was compounded by the relatively high rate of population growth. Tackling the problems of food shortage and the provision of food security for the rapidly increasing population was, therefore, the priority area of development planning at that time (Bhalla 1994).

For analysing the evolution of food policy and agricultural development strategy, the period after India’s independence can be divided into four phases; namely, 1947 to the mid-1960s, the mid-1960s to the early 1980s, the 1980s, and from the early 1990s to the present day. The main concern of food policy until the mid-1960s was to ensure that the gap between demand and supply of food did not result in an excessive rise in consumer prices. As with the pre-independence period, emphasis continued to be focused on food imports, price controls and food rationing. During the early 1960s, the intensive agriculture district programme (IADP) and intensive agriculture area programme (IAAP) were launched in selected districts that had the potential to increase food production. A programme of land reforms was also initiated with the aim of increasing access to land for the food-insecure landless households. However, these initial efforts did not make much impact on solving the food shortage problem until the middle of the decade.

By the mid-1960s, India’s imports of foodgrains had reached 16 per cent of its total foodgrain needs. Imports of this magnitude were beyond the country’s purchasing power. Foodgrains, mainly wheat, were imported at concessional prices from the USA under Public Law 480. Furthermore, the country faced an unprecedented severe drought for two consecutive years, which worsened the situation to such a level that the then prime minister had to appeal to citizens to fast one day a week in an effort to alleviate the food shortage. This was the turning point in the approach to tackling the food shortage, and a new agricultural development strategy was then launched to maximize the production of foodgrains. The new strategy was built on a foundation of three elements: (i) the provision of an improved high-yielding technological package for farmers; (ii) the delivery of modern farm inputs and services, including credit; and (iii) the assurance of remunerative pricing and marketing environment to farmers. To achieve these objectives, several policy instruments were used, which were also reviewed from time to time and modified on the basis of experience gained. Some of the main instruments reflecting the policy orientation (Acharya 2002b) are:

- (i) The creation, strengthening and expansion of the national agricultural research system (NARS) to develop and perfect new production and post-harvest technologies;
- (ii) The establishment, strengthening and expansion of an agricultural education and training system for agriculture extension workers and the transfer of new technology to farmers;
- (iii) Arrangements for the production, import and distribution of high-yielding farm inputs such as improved seeds, fertilizers, plant protection chemicals and other services, including credit to farmers;
- (iv) The creation and expansion of a physical and institutional infrastructure which included primary market yards, roads, transport and communication facilities, farmers' co-operatives and public sector organizations for improvement of the marketing system to handle and distribute marketed surplus;
- (v) Regulation of traders' marketing practices through a series of legal and other regulatory instruments such as levies, stock limits, movement restrictions and specifications on packaging as well as quality standards;
- (vi) Building-up and the maintenance of buffer stocks of cereals and the distribution of cereals through a public distribution system, supplementary nutrition programmes, anti-poverty and employment generation programmes, and open market releases;
- (vii) Establishing minimum support prices for main agricultural commodities including foodgrains and arrangements for price support purchases and procurement by public/co-operative agencies;
- (viii) The provision of food and input subsidies, explicit or implicit, to reconcile the conflicting objectives of foodgrain producers and consumers;
- (ix) Regulation of imports and exports of foodgrains through several instruments, including tariffs.

During the early 1980s, a balance between demand and supply of foodgrains was in sight. Thus, the objective of agricultural development was modified from 'maximizing the production of foodgrains' to 'evolving a production pattern consistent with the emerging demand pattern'. For achieving the new strategic objective, three support approaches were extended to non-foodgrain crops; that is, technology, inputs and marketing. As a result, the production of non-cereal food items such as edible oilseeds, fruits, vegetables, spices and livestock products increased.

Apart from measures to improve macro food and nutritional security, attention to household and individual food security was intensified during the 1980s, and several schemes to provide food assistance, create employment opportunities, and provide supplementary nutrition programmes

were launched. Policy instruments for improving household food security implicitly followed the entitlement approach which recognized that people, especially in the rural areas, derive their livelihoods from production-, exchange-, labour- and transfer-based entitlements (Acharya 2002e). Marginal and small farmers earn their livelihood and meet their food requirements mainly through self-production on their farms. For these households, whose marketable surplus is negligible, provision of production inputs such as seeds, fertilizers and irrigation water at reasonable prices was considered as the means of assuring food security. Similarly, for jute growers, rural artisans and the like, who enter the market to exchange their surplus products for food, and for those people who are net buyers of food, the functioning and efficiency of the agricultural marketing system was considered important. Programmes aimed at improving the marketing system (market yards, periodic market places, rural roads, storage structures, transportation facilities and a communication network) were viewed as measures of food security for the families depending on the market for their livelihood. Agricultural labourers and non-farm labour families earn their livelihood by selling their labour; consequently, rural wage rates, level of food prices and employment opportunities were treated as critical for the food security of these families. Others (disabled, old, destitute) live on transfers from the government and/or social charitable organizations. In situations of natural calamity or armed conflict, the affected families also depend on transfers. Therefore, direct food assistance programmes or transfer payments were perceived as essential for tackling the transitory food insecurity of such communities/families.

The sequencing and mix of programmes were based on the perception that (i) adequate availability of food at the national level is a necessary, but not sufficient, condition assuring households physical access to food; (ii) physical access to food is a necessary, but not sufficient, condition for ascertaining economic access to food; and (iii) physical and economic access of all households to food is a necessary, but not sufficient, condition for all individuals (especially women and children) to receive and consume adequate food quantities.

In 1991, in response to the financial crisis faced by the country, a programme of economic reforms was launched. Initially, the programme focused on the industrial and trade sectors and consisted of de-licensing, de-control and economic liberalization. Liberalization gained momentum when India became a signatory to the new international trade agreement in 1994. With industry and trade being increasingly liberalized, the need for agricultural reforms also became obvious. However, the approach to agricultural reform was cautious and gradual, and policy during this period was marked by some major changes of the earlier regime. Agricultural commodity imports were gradually liberalized and import duties reduced. The farm-input subsidies (fertilizers, canal water and electricity for irrigation), which earlier had been considered important components of food security

policy, were rigorously reviewed and steps taken to contain them. Measures were also initiated to liberalize the domestic marketing of agricultural commodities. The importance of value addition and processing of agricultural products was recognized and several schemes were introduced to provide incentives for these activities. Aware of the emerging surplus of certain farm products, efforts were also made to access the overseas markets through liberalization and the provision of incentives to promote exports. Attention shifted to the concern for household food and nutritional security: the food assistance and employment generation programmes launched earlier were more focused and targeted more to vulnerable groups. Their scale was also increased considerably.

### Current status of food security in India

The food policy and agricultural development strategy adopted by India to improve the food security situation paid rich dividends, and the ensuing improvements in food security can be assessed from several angles. The most significant change was the increase in the domestic output of foodgrains, particularly cereals (Table 1.1). The production of cereals increased from 72.1 million tonnes during the triennium ending (TE) 1964/5 to 130.2 million tonnes during TE 1984/5 and further to 186.4 million tonnes during TE 2003/4.

Increase in the production of staple food (cereals) has kept pace with the population growth. Per capita net output of cereals, which had increased from 110.4 kg in 1951 to 130.9 kg in 1964, went up further to 166.1 kg in 1984 and has hovered around that level for the last 20 years. The long-term growth rate of all cereals, which was 2.61 per cent per annum over the period 1967/8 to 1980/1, and 2.77 per cent per annum over 1967/8 to 2001/2, has exceeded the Indian rate of population growth (Table 1.2).

Table 1.1 Production of foodgrains in India (million tonnes)

Period	Cereals				Pulses	Total foodgrains
	Rice	Wheat	Coarse	Total		
TE 1951/2	21.8	6.3	16.1	44.2	8.3	52.5
TE 1964/5	36.5	11.0	24.6	72.1	11.3	83.4
TE 1974/5	41.0	23.5	26.0	90.5	10.0	100.5
TE 1984/5	55.2	44.1	30.9	130.2	12.2	142.4
TE 1994/5	78.1	60.8	32.6	171.5	13.4	184.9
TE 2003/4	84.3	70.0	32.1	186.1	13.2	199.3

Note: TE = triennium ending.

Sources: Acharya (2002a); GoI (2004b; 2005).

*Table 1.2* Compound growth rates of production of cereals in India

<i>Period</i>	<i>Rice</i>	<i>Wheat</i>	<i>Coarse cereals</i>	<i>All cereals</i>
1949/50–1964/5	3.50	3.98	2.25	3.21
1967/8–1980/1	2.22	5.65	0.67	2.61
1980/1–1989/90	3.62	3.57	0.40	3.03
1990/1–1999/2000	1.90	3.81	1.48	2.10
1967/8–2001/2	2.78	4.34	0.54	2.77

*Sources:* GoI (1999, 2000, 2002a, 2003).

Owing to the increase achieved in the production of cereals, the dependence on imports for meeting the staple food needs of the population dropped considerably. Net imports as a percentage of net domestic output had increased to unprecedented levels during the mid-1960s. For example, in 1966 the net import of cereals at 10.3 million tonnes represented 19 per cent of net production. Reviewed on a quinquennial basis, cereal imports totalled 8.2 per cent of net output during 1961–65 and 9.6 per cent during 1966–70, declining to 4.4 per cent of net production during 1971–75, 1.5 per cent during 1981–85 and only 0.4 per cent during 1986–90. Since then, India has become a net exporter, accounting for 0.1 per cent of net cereal production during 1991–95, 1.3 per cent during 1996–2000 and 4.0 per cent during 2001–03.

In addition to the increase in domestic cereal production, the inter-year instability in production was reduced considerably. This happened for two reasons. First, the irrigated area under cereals expanded considerably, reducing the dependency on uncertain rainfall. Of the total cereal area, irrigated areas increased from 23.1 per cent in 1964/5 to 50.1 per cent by 2000/1. And second, the share of more stable grains (wheat) increased while unstable grains (coarse cereals) decreased. Wheat had accounted for 15.2 per cent of total cereals in TE 1964/5, increasing to 37.6 per cent in TE 2003/4. On the other hand, the share of coarse cereals declined from 34.1 per cent to 17.2 per cent during this period.

Another noteworthy feature of India's advancements in macro food security is that 97.4 per cent of the incremental output of cereals between TE 1964/5 and TE 2003/4 were due to improvements in the per hectare productivity (yield); area expansion accounted for only 2.6 per cent. For example, during this period, the area under cereals increased from 93.7 million hectares to 97.3 million hectares and the average yield per hectare went up from 770 kg during TE 1964/5 to 1,946 kg during TE 2003/4. The improvement in yield resulted from advancements in technology, irrigation and the diversion of low-yielding crops to high value produce.

There has been considerable improvement in the physical access to food in different parts of the country, helped by several initiatives and measures.

First, the share of rice, the production of which is more geographically dispersed, has continued to be quite considerable. Rice contributed 42 per cent of the increase of 114.3 million tonnes in cereal production between TE 1964/5 and TE 2003/4. Moreover, rice itself became geographically more dispersed. Second, the network of the public distribution system was expanded, enabling foodgrains to reach the deficit, geographically difficult regions (hilly or desert) and tribal dominated areas.<sup>1</sup> Finally, systematic measures to expand the food marketing infrastructure increased physical access to food. These included the creation of market yards in rural areas, storage and warehousing facilities, expansion of the road network, transport and communication facilities, and incentives to promote food processing and packaging industries.<sup>2</sup>

Yet another important development has been the continuous improvement in the economic access of consumers to food. The increase in retail prices of the two staple food items (rice and wheat) has been lower than the increase in per capita income, and thus the proportion of consumer income required to buy a unit quantity of rice or wheat has continued to decline. For example, the proportion of annual per capita income needed in the rural areas to purchase a quintal of wheat has declined from 15.4 per cent in 1973/4 to 8.7 per cent in 1983/4, 5.9 per cent in 1990/1, 5.0 per cent in 1994/5 and finally to 4.4 per cent in 1999/2000. A similar declining trend is noticed for urban communities, as well as in the case of rice for both rural and urban areas (Acharya 1997, 2002a: 151–78, 2004a).

A related development needs to be mentioned: in addition to the expansion in the availability of cereals and the decline in their relative prices vis-à-vis incomes, the per capita consumption of cereals has also tended to drop in recent years (Dev 2003), going from 173.6 kg per year in 1987/8 to 160.8 kg in 1993/4 and further to 152.6 kg in 1999/2000. The decline in consumption has been sharper in coarse cereals, and has occurred even among the lowest 30 per cent of consumers, reflecting a shift towards more nutritive foods such as fruits, vegetables and livestock products. Long-term data from the National Sample Survey Organization (NSSO) also indicate a declining trend in the per capita consumption of cereals in both rural and urban areas from the early 1970s to 1999/2000, accompanied by a decrease in the proportion of expenditures on cereals and an increase of that on milk, meat, eggs, fruits and vegetables (Selvarajan and Ravishankar 1996; Dev 2003).

Improved availability of staple food at declining real prices has contributed to improved nutritional security. Farmers have shifted from the low-yielding coarse cereals to noncereal food products since the middle of the 1980s (Acharya 2003a), a fact that has, *inter alia*, helped to increase production and availability of edible oils, sugar, fruits, vegetables, spices, milk, eggs, meat and fish/fish products. During the last two decades, the output of fruits and spices increased at a compound rate of 3.07 to 3.91 per cent per annum, while the production of vegetables, edible oilseeds, milk and fish recorded an

Table 1.3 Production of other food products in India

Items	Total production (million tonnes)			Per capita production (kg p.a.)	
	1980/1	2003/4	CGR % p.a.	1981 (688.5) <sup>f</sup>	2002 (1050.6) <sup>f</sup>
Edible oilseeds/oil <sup>a</sup>	9.4	25.1	4.36	6.4	8.6
Fruits	23.8 <sup>b</sup>	47.7 <sup>c</sup>	3.07	34.5	45.4
Vegetables	45.4 <sup>b</sup>	97.5 <sup>c</sup>	4.33	65.9	92.8
Spices	1.4	2.9 <sup>d</sup>	3.91	2.0	2.8
Sugar	5.1	19.9	6.10	8.2	16.3
Milk	31.6	88.1	4.56	45.9	82.2
Eggs <sup>e</sup>	10.1	40.4	6.21	14.7	39.7
Meat	0.8	4.9 <sup>c</sup>	8.59	1.2	4.7
Fish	2.4	6.4	4.36	3.5	5.9

Notes: CGR = compound growth rate; <sup>a</sup> Production of oilseeds and per capita production of edible oils; <sup>b</sup> Pertains to 1984/5; <sup>c</sup> Pertains to 2002/3; <sup>d</sup> Pertains to 1999/2000; <sup>e</sup> Production in billions and per capita production in number; <sup>f</sup> Population in millions.

Sources: GoI (2004a, 2004b, 2005); Singhal (2003).

increase of 4.33 to 4.56 per cent per annum during this period. The annual production rates of sugar, eggs and meat were even higher: sugar increased at the rate of 6.10 per cent, eggs 6.21 per cent and meat 8.59 per cent during this period (Table 1.3). As the production growth of all these food items was considerably higher than the population growth, per capita production of nutritive foods went up substantially in India.

In addition to the advancements made in macro food security, there has been considerable improvement in food availability, and a reduction of hunger at the household level. In the rural areas, which account for nearly three quarters of the poor in India, the percentage of households reporting sufficient food availability every day throughout the year for all family members increased from 81.1 per cent in 1983 to 96.2 per cent in 2000. The percentage of households with at least one member not getting enough food daily during some months declined from 16.2 per cent in 1983 to 2.6 per cent in 2000, and the percentage of households with at least one member without sufficient daily food throughout the year came down from 2.4 per cent in 1983 to 0.7 per cent in 2000 (NSSO 2001).

Economic poverty is an important factor affecting food security at the household level. Over the years, the incidence of both rural and urban poverty has declined considerably (Table 1.4). The percentage of population below the poverty line declined from 51.3 per cent in 1977/8 to 38.9 per cent in 1987/8 and finally to 26.1 per cent in 1999/2000 which, according to some scholars, may have been even lower (Bhalla 2003). However, the absolute number of poor or food-insecure people continues to be sizeable.

Table 1.4 Incidence of poverty in India

Year	Poverty ratio (%)			Number of poor (millions)		
	Rural	Urban	Total	Rural	Urban	Total
1977/8	53.1	45.2	51.3	264.3	64.6	328.9
1983/4	45.7	40.8	44.5	252.0	70.9	322.9
1987/8	39.1	38.2	38.9	231.9	75.2	307.1
1993/4	37.3	32.4	36.0	244.0	76.3	320.3
1999/2000	27.1	23.6	26.1	193.2	67.1	260.3
2007*	21.1	15.1	19.3	170.5	49.6	220.1

Note: \*Projected.

Source: GoI (2004a: 204).

Another disquieting aspect of food security is nutritional status, particularly with regard to children and women. Based on the reports of the National Nutritional Monitoring Bureau (NNMB), Radhakrishna and Ravi (2004) have observed that 47.7 per cent of children (under 3 years) still suffer from malnutrition and the incidence of child malnutrition is higher in the rural areas. Even among adults, the incidence of chronic energy deficiency (CED) is quite high, with 37.4 per cent of males and 39.4 per cent of females suffering from CED in 2000/1.

## Agricultural price support policy

### Policy objectives and framework

Price support for foodgrain producers has been an important instrument of the agricultural and food policy pursued by India since the mid-1960s. These instruments included minimum support prices, subsidized farm inputs, food marketing system improvements, direct food assistance and employment-generation programmes. The broad policy framework was initially outlined in the terms of reference of the Agricultural Price Commission (APC), set up in 1965 to advise the government on a regular basis on the development of a balanced and integrated price structure. In formulating price policy, the APC was to recognize, on the one hand, the need to provide incentives to farmers to adopt new technology and maximize production and, on the other hand, to the likely effect of price policy on the cost of living, wage levels and industrial cost structure. In 1980, when the demand and supply of foodgrains appeared to be in balance, the framework of the policy was modified. The emphasis of the APC policy (later renamed the Commission for Agricultural Costs and Prices, CACP) shifted from maximizing the production of foodgrains to developing a production pattern consistent with the country's overall economic needs. The issue among farmers and consumers of a fair split of the gains accruing from technology and public investment was also

explicitly recognized, and CACP was to monitor the terms of trade for the agricultural sector. Policy was reviewed again in 1986, when its long-term perspective was emphasized. This implied that in order to make the farm sector more vibrant, productive and cost effective (Acharya 2004b), policy should be extended to major factors that would influence agricultural prices in the long term.

### **Salient features of support prices**

For almost 20 years until 1991, the distinction between the support price and procurement price of wheat and rice (paddy) was blurred. Each year, the procurement prices were announced and procurement targets fixed. To meet the procurement targets, government imposed movement restrictions in the surplus-producing areas, which was a disincentive for farmers. Procurement targets also affected farmers' price support: once the target quantity had been procured, public agencies exited the market and farmers were left without support price for their produce. Thus, target-based procurement was becoming an obstacle to the support prices of rice and wheat growers in major producing areas. Therefore, in 1991, the government decided to eliminate the system in favour of fixed minimum support prices only, also for rice and wheat (as was being done for other farm products).

Currently, minimum support prices in the nature of a price guarantee to farmers, are applied by the Indian government to 25 farm products, which include paddy, wheat, maize, pearl millet, sorghum, ragi, barley, chickpea, pigeon pea, blackgram, greengram, lentils, groundnut, mustard, sesame, soyabean, sunflower seed, safflower, nigerseed and dried coconut. If market prices fall below the support level, government agencies buy the quantities offered at support prices, but the support is linked to specified quality standards. Farmers also have the option to sell on the open market. On the other hand, while there is no obligation on the part of farmers to sell to government agencies, these are bound to buy all quantity offered by farmers at guaranteed prices.

Determination of the support levels is governed by the cost of production, changes in input prices, input-output price parity, trends in market prices, the emerging demand and supply situation, inter-crop price parity; the effect on the cost of living; the effect on the general price level; the effect on the industrial cost structure; the international price situation, and parity between prices paid and prices received by farmers (terms of trade). Support prices, usually announced at the time of sowing, are fixed for the year and applied across all areas of the country. Inter-year changes in support prices are essentially non-negative (a medium-term guarantee to farmers). A central nodal agency is designated for each commodity or group of commodities to undertake support operations; for cereals, this agency is the Food Corporation of India (FCI) and, for pulses and oilseeds, the National Agricultural Co-operative Marketing Federation (NAFED). The resulting stockpiles

are used in various ways. For example, for rice and wheat, these are used for (i) meeting the requirements of the public distribution system and food assistance programmes; (ii) creating buffer stocks to even out inter-year fluctuations in supplies and prices; and (iii) open market operations, including supplies to flourmills and exporters.

### Public-private share in grain trade

Farmers have the option of selling to private traders or to public agencies, but generally deal with the public agencies only when the support price is more favourable than that offered by private traders. In the last ten years, there has been positive development in the level of price support operations of two major cereals – rice and wheat – with price support purchases increasing from 20.1 million tonnes during TE 1992/3 to 38.6 million tonnes during TE 2002/3. The increase was more pronounced for wheat (Table 1.5).

Public agencies purchased greater quantities, as did private trade, and these handled 76.4 million tonnes of rice and wheat during TE 2002/3 compared to 39.6 million tonnes a decade earlier. If viewed in terms of the total market surplus of these staple foodgrains, there was no change in percentage shares of purchases made by the public and private sectors.

*Table 1.5* Share of government purchases in total output of rice and wheat (in million tonnes)

<i>Particulars/ period</i>	<i>Total production</i>	<i>Marketed surplus</i>	<i>Purchases by</i>		<i>Share in total marketed surplus (%)</i>	
			<i>Public agencies</i>	<i>Private trade</i>	<i>Public agencies</i>	<i>Private trade</i>
<i>Wheat</i>						
TE 1992/3	53.6	28.1	8.4	19.7	29.9	70.1
TE 2002/3	72.9	53.4	18.7	34.7	35.0	65.0
Increase (%)	36.0	90.0	122.6	76.1	–	–
<i>Rice</i>						
TE 1992/3	73.9	31.6	11.7	19.9	37.0	63.0
TE 2002/3	83.7	61.6	19.9	41.7	32.3	67.7
Increase (%)	13.3	94.9	70.1	109.5	–	–
<i>Total</i>						
TE 1992/3	127.5	59.7	20.1	39.6	33.7	66.3
TE 2002/3	156.6	115.0	38.6	76.4	33.6	66.4
Increase (%)	22.8	92.6	92.0	92.9	–	–

*Notes and sources:* \*For the TE 1992/3, marketed surplus to output ratio was taken as 42.7 per cent for rice and 52.4 per cent for wheat (Acharya 2004b). For the TE 2002/3, the ratio was taken as 73.6 per cent for rice and 73.3 per cent for wheat (GoI 2004b).

## **Impact and issues**

An assessment of the impact of price support policies should be based on the achievement of specified objectives, incentives or disincentives to farmers as well as the distortions, if any, created in the marketing system. The policy has been instrumental in reducing price uncertainty for farmers, thus inducing them to adopt new technology and thereby increase the output of foodgrains and attain macro food security. The price support programme, in conjunction with other policy instruments, has helped to improve physical and economic access to food. Despite these positive impacts of the price support policy, certain other issues have been raised and debated. The first issue is the level of support prices: farmers consider the level inadequate, but consumer groups feel differently. The conflicting interests were reconciled with complementary instruments of input subsidies, on the one hand, and distribution of subsidized food, on the other. Further, the level of support prices is a political-economic decision, and the government has relied mostly on recommendations made by CACP, the autonomous expert body. Whenever the government has deviated substantially from their recommendations, distortions emerge. For example, during 1999–2002, the government fixed minimum support prices (MSPs) of rice and wheat at levels much higher than recommended by CACP (Acharya and Jogi 2003). This lack of prudence led not only to excessive stocks, but also increased public cost for the foodgrain policy. Apart from undue hikes in the levels of MSPs for rice and wheat, relaxation of the fair-average quality norms, inappropriate timing of price rises for grains for the public distribution system (PDS), and improper meshing of export–import policy contributed to the accumulation of government stocks in 2002. To overcome similar difficulties, there have been suggestions that the CACP be declared a statutory body.

The second issue relates to operational incentives for the private sector's grain trade. The often cited example is the fact that the intra-year price rise for rice and wheat has been considerably lower than storage costs, discouraging private sector investment in storage and trading activities. Private sector involvement in the foodgrain trade continues to be considerable, and a curb on intra-year price rises has benefited both foodgrain producers and consumers. Petty traders, who generally operate in short-term markets, have not been adversely affected, and it is most likely the large foodgrain traders or trading giants who cannot operate profitably. The question that arises is whether a country that is facing serious food shortages should prioritize its concern on farmers, consumers and petty traders or on the large-scale trading companies.

The third issue relates to the efficiency of the Food Corporation of India vis-à-vis private trade in price support operations and subsequent distribution of foodgrains. The efficiency of the FCI has been questioned on the

ground of its economic cost and subsequent outlay on food subsidies. Several aspects of the FCI's operations need to be noted. First, both the purchase price (support price) and the issue price are determined by the government. Second, around 70 per cent of the FCI's total expenditures for procurement and distribution are spent on items over which it has no control (Acharya 1997; GoI 2002b). The same costs would also have to be incurred by private trade unless it were able to evade some of the statutory taxes/charges (Acharya 1997). Third, losses occurring during storage and transit are estimated to be around one per cent which, in comparison to private channels, is not unduly high. Fourth, the FCI's establishment charges and administrative overheads are estimated to be 2.8 per cent of its economic costs, and thus are no higher than private trade net margins. Fifth, a recent study commissioned by the Union Ministry of Consumer Affairs, Food and Public Distribution (Chand 2003) has pointed out that in order to encourage the private sector to purchase wheat and paddy from the markets of surplus-producing states, retail prices in deficit states during lean months should be at approximately the same level as the FCI's economic costs on wheat/rice.

Another important issue relates to the problem of ineffective implementation of price support operations for rice and wheat in certain states<sup>3</sup> where, despite surplus yields of the last decade, farmers cannot obtain the minimum support prices. This situation has evolved mainly because the nodal agency (FCI) and state agencies in these new surplus states are not fully geared to undertake price support operations, as the FCI continues to focus on large volume purchases from the traditional surplus-producing states. Decentralization of procurement and a refocusing of FCI operations towards the non-traditional cereal states, measures that are being currently pursued, may help in this regard.

### **Farm input subsidies**

Farm input subsidies were used in conjunction with support prices to reconcile the conflicting interests of foodgrain producers and consumers. Input subsidies in India's agricultural sector constitute either (i) direct or explicit subsidies; or (ii) indirect or implicit subsidies. Direct subsidies are payments to farmers intended to cover a part of the cost of inputs or equipment (improved seeds, plant protection equipment and improved farm implements). Direct subsidies are provided to well-defined target groups such as small or marginal farmers or those belonging to scheduled castes or tribes. The implicit or indirect subsidies arise as a result of the pricing policy for certain inputs such as fertilizers, electricity and canal water. There is no direct payment to producers, but as the inputs are supplied at less than the cost of production or supply, this amounts to an implicit subsidization of the input for farmers (see Table 1.6). Implicit or indirect subsidies on fertilizers, electricity

Table 1.6 Major input subsidies in Indian agriculture

Particulars	1980/1		1990/1		2000/1	
	Current prices	Constant prices (1993/4)	Current prices	Constant prices (1993/4)	Current prices	Constant prices (1993/4)
Subsidy (Rs billion)						
Fertilizer	5.0	15.4	43.9	59.6	138.0	83.9
Electricity	3.3	10.2	46.0	62.5	269.5	163.9
Canal water	5.8	17.9	24.7	33.5	96.9	58.9
Total	14.1	43.5	114.6	155.6	504.4	306.7
Subsidy (billion US\$)*	0.3	0.9	2.5	3.4	11.2	6.8
Subsidy as % of GNP	1.1		2.3		2.7	
Subsidy as % of GDP agriculture	2.6		6.4		10.0	

Note: US\$1 = Rs45.

Sources: Acharya and Jogi (2004a, 2004b).

for irrigation and canal irrigation water account for more than 99 per cent of total subsidies in Indian agriculture.<sup>4</sup>

Major input subsidies to the country's agriculture sector at current prices were estimated to total Rs14.1 billion in 1980/1, Rs114.6 billion in 1990/1 and Rs504.4 billion in 2000/1, or, in dollar terms for 2000/1, US\$11.2 billion. At constant (1993/4) prices, the input subsidies increased at the rate of 13.5 per cent per annum during the 1980s and 7.0 per cent per annum during the 1990s. As a proportion of agricultural GDP, farm input subsidies accounted for 2.6 per cent in 1980/1, 6.4 per cent in 1990/1 and 10 per cent in 2000/1.

Agriculture in India is basically the farming of smallholdings. According to the 1995/6 agricultural census, there are 115.6 million farm holdings with an average operational area of 1.41 hectares. Nearly 62 per cent (71.2 million) of these holdings operate on less than one hectare (average 0.4 hectares) and 19 per cent (21.6 million) on 1–2 hectares of land (average 1.42 hectares) (Table 1.7). Marginal and small farmers account for 36.4 per cent of total subsidies, and this is slightly higher than their share (36 per cent) of total cultivated area. In contrast, the so-called large farms (average cultivated area 17.2 hectares) accounted for 11.8 per cent of total subsidies, which is lower than their share (14.8 per cent) of cultivated area. The average subsidy of US\$68.60 per hectare of cultivated area applied across the different farm size groups, except for large farms where it was considerably lower. In access to fertilizers, electricity or canal water, there is no preferential treatment with regard to size of the farm.

Input subsidies are mainly focused on foodcrops (Table 1.8), constituting as much as 95.6 per cent of the total. The breakdown by different crops was: rice 32.1 per cent, wheat 27.5, sugarcane 5.1, mustard 4.0, groundnut 2.5

Table 1.7 Farm input subsidies according to farm size, 2000–1

Size	Total subsidy (US\$ billion, current prices)	No. of farms (millions)	Subsidy per farm (US\$)	Subsidy per ha. of operated area (US\$)	Total operational area (%)	Total subsidy (%)
Marginal (less than 1 ha.)	1.9	71.2	26.7	68.9	17.2	17.3
Small (1–2 ha.)	2.1	21.6	97.2	69.7	18.8	19.1
Semi-medium (2–4 ha.)	2.8	14.3	195.8	70.8	23.8	24.6
Medium (4–10 ha.)	3.1	7.1	436.6	73.8	25.3	27.2
Large (above 10 ha.)	1.3	1.4	928.6	54.6	14.8	11.8
Total	11.2	115.6	96.9	68.6	100.0	100.0

Note: Percentages are rounded.

Source: Computed from Acharya and Jogi (2004b).

Table 1.8 Crop-wise subsidy in Indian agriculture, 2000–1

Crop	Total subsidy (%)	Subsidy per hectare (current prices)		Subsidy per tonne of output	
		Rupees	US\$	Rupees	US\$
Rice	32.1	3,587	79.7	189	4.2
Wheat	27.5	5,039	112.0	186	4.1
Gram	1.8	1,495	33.2	201	4.5
Groundnut	2.5	1,827	40.6	187	4.2
Mustard	4.0	3,306	73.5	354	7.9
Sugarcane/sugar	5.1	6,099	135.5	90	2.0
All foodcrops	95.6	2,661	59.1	NE	NE
Cotton	4.4	2,573	57.2	451	10.0
Total	100.0	2,658	59.1	NE	NE

Note: NE = not estimated.

Source: Acharya and Jogi (2004b).

and gram (chickpea) 1.8 per cent. The subsidy was, on average, US\$59 per hectare of cropped area, but varied from around US\$33 for gram to US\$136 for sugarcane. If subsidy is compared to output, it was close to US\$4 per tonne for wheat and rice, around US\$8 for mustard, and only US\$2 per tonne for sugar.

Farm input subsidies, particularly their rising levels, have remained one of the most debated aspects of the agricultural policy since the launch of economic reforms in 1991. However, the withdrawal of subsidies has been cautious and gradual for several factors. Input subsidies have been considered

not only from the fiscal perspective of the electricity or irrigation department but also, more importantly, their overall role in food security and agricultural development of the country has been recognized. Input subsidies have enabled the country to improve its food security and to keep food prices low, improving access to food for the population, while providing reasonable returns to farmers. Furthermore, the subsidies are not net transfers to farmers. For example, of the total fertilizer subsidies, farmers receive an estimated 62 per cent and 38 per cent goes to the industry (GoI 2005). A considerable portion of power and canal water subsidies are wasted because of inefficient production and distribution systems. Thus, the burden of subsidies can be reduced with more efficient production and distribution systems of key farm inputs. With better supply systems of electricity and canal water, farmers would be willing to pay higher user charges. As already mentioned, the share of marginal and small farmers in total input subsidies is quite significant. Their food security depends on self-production, and thus the option of compensating this group for increased user charges with higher support prices is not feasible, as the marketed surplus of the small and marginal farmers is either negligible or very low. Furthermore, many crops are not covered by the support policy. It is also being argued that subsidies on farm inputs cannot be seen in isolation from the multiple subsidies in other sectors of the economy, and consequently their withdrawal is less painful. Total subsidies in the union budget alone (unrecovered cost of non-public goods) were estimated at Rs1,158 billion in 2003/4 (GoI 2005), including subsidies on liquefied petroleum gas and kerosene.

### **Direct food and other assistance programmes**

Apart from food production and agricultural development programmes, the problem of food insecurity and malnutrition at the household level was tackled through measures such as direct food assistance, wage employment, food-for-work and certain other welfare schemes. Historically, poor households in India have relied on traditional family and community-based mechanisms of social protection to cope with deprivation. However, the process of change has eroded many of these traditional systems. Therefore, the country's post-independence history of social development has highlighted food as a cornerstone of the national strategy to accord some measure of social protection to vulnerable citizens. India's development policy after independence has always had a niche for food-based anti-poverty and social protection programmes (Medrano 2004). Once a fairly satisfactory situation with respect to macro food security had been achieved, even the Apex Court (Supreme Court) intervened with a series of directives to central and state governments for implementing programmes to eliminate hunger and malnutrition within a stipulated timeframe. The joint government-judiciary

endeavour received an additional boost with the 'Right to Food' campaign launched by civil society and non-governmental organizations (NGOs).

Government's food assistance and related intervention have sought to address food insecurity on three fronts. Chronic food insecurity is alleviated through subsidized food distribution, food-for-work and employment generation programmes. Nutritional insecurity, primarily of pregnant and nursing women, and children, is addressed through supplementary nutrition and school feeding programmes. Transitory food insecurity is covered with food assistance as part of disaster relief and long-term disaster preparedness and prevention programmes. Over the years, the nature of food assistance has changed considerably. In the 1960s, national assistance policies focused on food production, and food assistance was mainly intended to augment food availability. The goal was to target the entire population through undifferentiated generalized food distribution as well as to build food reserves. Over the years, food assistance has been motivated more by the need to alleviate poverty and hunger, and currently by the prevention of malnutrition. According to the UNWFP (2002: 1–32), food assistance strategy in India has moved from 'food for the nation' to 'food for the people' and, most recently, to 'food security for the vulnerable'.

Current direct food and other assistance programmes in India fall broadly into five groups: (i) distribution of subsidized foodgrains; (ii) supplementary nutrition programmes for children and women; (iii) food-for-work and wage employment programmes; (iv) self-employment augmentation programmes; and (v) welfare or social assistance programmes for specific vulnerable groups.

### **Distribution of subsidized foodgrains**

India has one of the largest subsidized food distribution systems in the world, known as the *public distribution system*. There are four current programmes in this group. The first is the public distribution system (PDS), which is based on the purchase of foodgrains (rice and wheat) by the FCI from farmers at minimum support prices and their subsequent allotment to the states according to the criteria of prevalent poverty levels and state level production of foodgrains. This is an attempt to balance the availability of food between surplus and deficit states. The PDS serves three objectives; namely, providing price support to farmers, supplying grain at subsidized prices to consumers, and stabilizing market prices through the maintenance of buffer stocks and release of foodgrains to the open market. The PDS is supplemental in nature and is not intended to provide the entire requirement of foodgrains to a household. The system was initially started as universal food distribution programme, but due to problems in delivering subsidized foodgrains to vulnerable groups, the system has undergone several changes.

With the view of making the programme more pro-poor, the targeted public distribution system (TPDS) was launched in the country in June 1997

(Taimini 2001). Under this programme, all identified poor families (that is, those living below the poverty line (BPL)) are provided with 35 kg of rice or wheat at a subsidized price (usually half of the FCI's costs). Around 81.6 million families who have been issued BPL ration cards are being assisted under TPDS. The per capita per month poverty line, at 1999/2000 prices, has been defined as Rs327.56 for rural areas and Rs454.11 for urban communities. Families above the poverty line (APL) (non-income tax payers) are also entitled to receive grain but at a price closer to cost. The TPDS is a joint responsibility of the central and state governments, and currently operates through a network of 462,676 fair-price shops. As the issue price for APL families is almost equal to market price, TPDS is now increasingly becoming self-targeted. During 2003/4, foodgrains to BPL families totalled 18.6 million tonnes, including 3.8 million tonnes to the poorest 12.5 million families, at a total subsidy cost of around Rs103 billion. In comparison, the provision to APL families was 4.2 million tonnes of foodgrains, at little subsidy cost.

The second is the grain scheme for the poorest of the poor, *Antyodaya Anna Yojana* (AAY) that was launched in December 2000 for additional targeting of the poorest of the poor. The scheme now covers 20 million poorest BPL families, who are supplied 35 kg of grain per month at Rs2 per kg for wheat and Rs3 per kg for rice. The utilization of allocated food under this scheme is quite satisfactory (Medrano 2004). During 2003/4, 3.82 million tonnes of foodgrains were supplied under this scheme (GoI 2005), involving a subsidy cost of around Rs30.6 billion.

The third is the *Annapurna Yojana* scheme (APS) which was launched in April 2000 and targets all indigent senior citizens without viable means of income or family support. Under APS, an allotment of 10 kg of grain per month is provided free of cost to specific individuals. The village *panchayats* are entrusted with the responsibility of identifying the beneficiaries and implementing the scheme. Around 65,000 individuals are being assisted under the scheme, with a subsidy of around Rs78 million.

The fourth programme is the scheme for the prevention of starvation deaths (SPSD). The SPSD was initially launched in the late 1990s in the tribal and geographically difficult areas, and later extended to drought-affected areas. Under this scheme, a specified quantity of foodgrains is stocked in the village grain banks to be supplied free of cost at the discretion of village *panchayats* (councils) to families facing starvation. The scheme is working well and serving its purpose in regions where non-governmental and voluntary civil society organizations are active.

### **Supplementary nutrition programmes (SNPs)**

The primary objective of the supplementary nutrition programmes (SNPs) is to prevent or alleviate malnutrition in vulnerable children and mothers.

There are two important components: one is an ambitious scheme of integrated child development services (ICDS) which has a supplementary nutrition programme for children below six years of age and expectant/nursing mothers as an important goal. The scheme, known as *Anganwadi Yojana* (childcare centres), was launched in 1975 and now covers 4.8 million expectant and nursing mothers, and 22.9 million children (under six years) through a network of 4,200 projects, covering 75 per cent of the development blocks and 273 slum pockets in urban areas. Centrally sponsored and implemented through state governments, services are provided at community centres where beneficiaries gather daily. Food supplements, which may include a hot meal or snacks, vitamin A, and iron and folic acid tablets are provided according to nutritional needs. According to several evaluation studies, the performance and impact of ICDS have varied across states, depending mainly on the efficiency of the implementation system.

The second component is the national programme of nutritional support to primary education (NPNSPE), or the 'midday meals' (MDM), as it is commonly known. The MDM programme was started by the Tamil Nadu government in the 1980s but the NPNSPE, introduced in 1995, has the twin objective of improving the nutritional status of primary school-aged children and of increasing enrolment, regular attendance and retention in schools. The plan is based on foodgrains being supplied to the states free-of-charge, while the costs for transport from the FCI to schools and cooking are to be borne by the state governments. Three options are available to the states under the scheme: (i) providing a hot meal consisting of 100 g of foodgrains per child per day for 200 school days; (ii) distributing pre-cooked meals; and (iii) dispensing 3 kg of wheat or rice per child per month for 10 months. Although the programme is supplementary in nature (offering 300 kcal and 8–12 g of protein), it has helped both to improve nutrition and to increase school enrolment and retention. During 2003/4, around 106 million children benefited. Under the programme, 3.2 million tonnes of foodgrains were used, at a subsidy cost of around Rs31.7 billion. The two food-based interventions – the targeted public distribution system (TPDS) and supplementary nutrition programme (SNP) (including MDM) – now serve almost half of the population of India, channelling about 25 million tonnes of foodgrains annually, at a subsidy of around Rs140 billion.

### **Food-for-work (FFW) and wage employment programmes**

The food-for-work programme was initially started in 1977/8 with a view to improving both income and nutrition. In the first half of the 1980s, two wage employment programmes (with a foodgrain component) – the national rural employment programme (NREP) and the rural landless employment guarantee programme (RLEGP) – were introduced. These were merged in 1989 into a single component, the *Jawahar Rozgar Yojana* (JRY). The JRY was targeted at BPL families in rural areas. In 1993, a centrally sponsored

scheme, the employment assurance scheme (EAS), was introduced in 1,778 backward development blocks for providing assured employment for 100 days to a maximum of two adults per family. Seventy-five per cent of the costs were borne by the central government and rest by the states. It was a demand driven scheme until 1999, after which resources were allotted to the states on the basis of the incidence of poverty. The scheme provided 2–2.5 million days of employment per year. The programme, with a provision of minimum wage rates, was self-targeting in nature and catered to the employment needs of unskilled workers. It played a significant role in protecting the consumption levels of the rural poor, particularly during natural disasters, but the employment opportunities provided were considerably fewer than demand required.

In September 2001, all earlier rural employment programmes were merged into an umbrella rural employment programme called *Sampoorna Gramin Rozgar Yojana* (SGRY), with the basic objectives remaining the same. Under this scheme, the cash component is shared by central and state government in the ratio of 75:25. The works undertaken are labour intensive, wages are fixed at a minimum confirmed by the state, and payment is made in the form of 5 kg of foodgrains plus cash. In 2002/3, it created 313 million days of employment and provided 1.5 million tonnes of foodgrains. In 2003/4, the created employment was equivalent to 373 million man-days. The scheme is being implemented by the *panchayati raj* institutions (the grass-roots units of self-government). The basic problem with most of these programmes is the inadequate scale; that is, the employment actually provided falls substantially below the demand. With this shortcoming in view, the NGOs and civil society organizations (CSOs) have been pressing for some type of employment guarantee for solving the problem of food insecurity.

In response to public demand, in November 2004 the government launched a national food-for-work programme in the 150 most backward districts for providing guaranteed employment for 100 days to BPL families. Simultaneously, a bill was drafted and in December 2004, the government introduced the National Rural Employment Guarantee (NREG) Bill in Parliament. This obligates the government to provide at least 100 days of waged employment every year to every household whose adult members volunteer to do unskilled manual work. The Bill was passed by Parliament and the NREG scheme was launched in 200 districts of the country in February 2006.

### **Self-employment augmentation programme**

For a multi-pronged approach to food insecurity and poverty, another programme, the integrated rural development programme (IRDP), intended to augment the opportunities for self-employment, was launched. The IRDP was the first major self-employment scheme started in the late 1970s and was aimed at providing bank credit, subsidy and technical assistance (inputs and outputs marketing) for the acquisition of income-generating assets

to poor rural families (small and marginal farmers, agricultural labourers and artisans). The IRDP was supported by two allied programmes; namely, TRYSEM (the training of rural youth for self-employment) and DWCRA (the development of women and children in rural areas). By March 1999, nearly 54 million families had benefited from the IRDP, 4.6 million youth trained under TRYSEM and 4.1 million women assisted under DWCRA (Radhakrishna et al. 2004).

In April 1999, the IRDP and affiliated programmes were merged into *Swarnjayanti Gram Swarojgar Yojana* (SGSY). The objective was to help poor families overcome the poverty line with training, capacity-building and income-generating assets through a mix of bank credit and subsidy. In 2003/4, there were 0.9 million assisted families, the equivalent of 392 million days of employment. Cumulatively, 4.58 million families have been assisted since 1999 under the SGSY, with an investment of Rs95.2 billion.

### **Other social assistance programmes**

In addition, there are several other programmes for transfer payments or other forms of assistance targeted at vulnerable sections: for example, the national old age pension scheme, under which all persons aged over 65 years and without any source of income are paid a monthly cash pension (currently Rs75). Under the national maternity benefit scheme, all BPL pregnant women are given a cash assistance of Rs500 approximately 8–12 weeks prior to the birth of the first two children. All BPL cardholders are entitled to free health check-ups and treatment. Under the national family benefit scheme, in the event of the death of the primary breadwinner, within four weeks a BPL family receives lump sum assistance of Rs10,000. Apart from these, several other assistance programmes are available to BPL families to support dwelling units, children at higher levels of education and other miscellaneous purposes.

### **Food subsidy**

Food subsidy in the union budget is the difference between procurement and handling/distribution expenses minus the realization from foodgrains issued under different programmes. The food subsidy is thus the amount reimbursed by the government to the FCI for its foodgrain activities. In India, food subsidy has served the multiple objectives of minimum guaranteed prices to farmers, maintenance of buffer stocks, supply of subsidized foodgrains to different identified sections of the population, food-for-work and wage employment programmes, supply of relief food during natural disasters and open market sales for stabilizing market prices. Therefore, the magnitude of food subsidy is obvious from the government policies relating to each of the objectives mentioned above.

The food subsidy in India, which was 0.43 per cent of GDP in 1990/1, increased to 0.58 per cent in 2000/1 and peaked sharply at 0.93 per cent

in 2003/4 (Table 1.9). At current prices, the food subsidy increased from Rs24.5 billion in 1990/1 to Rs120.1 billion in 2000/1 and further to Rs258 billion in 2003/4. At constant (1993/4) prices, the food subsidy expanded from Rs33.3 billion in 1990/1 to Rs73 billion in 2000/1, recording an annual growth rate of 8 per cent. The increase in food subsidy during the last three years was more sharp, at around 26 per cent per annum, reflecting higher increases in support prices, the maintenance of higher levels of food stocks, increase in the per unit food subsidy, and more pronounced food assistance, food-for-work and food-based welfare programmes.

According to certain studies, some subsidized foodgrains are diverted to the open market. Consequently, it has been suggested that a food coupon or food credit card system should be tried instead of the distribution of foodgrains in kind. Under this system, the card holder would not need go to a designated fair price shop (PDS outlet) but could buy the foodgrains from any retail shop and the retailer, in turn, could claim the subsidy (the difference between the market and subsidized prices) from the government. There are two essential pre-requisites for this system to succeed. First, the food marketing system must be efficient even in remote rural areas. There are villages with no retail shops. Even when an outlet exists, the retailer might be operating, as is usually the case, on a very low turnover and may hesitate to accept food credit cards. And second, the system of repayment of subsidy by the government to retailers must be prompt. Given the likely bureaucratic hurdles in the government system, retailers may become averse to supplying grains on food cards. However, to study the feasibility of this

*Table 1.9* Food subsidy in India

<i>Year</i>	<i>Rupees (billion)</i>		<i>US\$ (billion)</i>		<i>Subsidy as % of GDP</i>
	<i>Current prices</i>	<i>Constant prices (1993/4)</i>	<i>Current prices</i>	<i>Constant prices (1993/4)</i>	
1990/1	24.5	33.3	0.54	0.73	0.43
1996/7	60.7	47.3	1.35	1.05	0.44
1997/8	75.0	54.8	1.67	1.22	0.52
1998/9	87.0	58.8	1.93	1.31	0.52
1999/2000	92.0	59.9	2.04	1.33	0.49
2000/1	120.1	73.0	2.67	1.62	0.58
2001/2	174.9	106.5	3.89	2.37	0.77
2002/3	241.8	141.4	5.37	3.14	0.98
2003/4	258.0	146.5	5.73	3.25	0.93

*Note:* US\$1 = Rs45.

*Sources:* GoI (2004a; 2005).

alternative, a food credit card system was implemented on a pilot basis in selected districts during the tenth five-year plan.

### **Food marketing system**

The efficiency of the food marketing system plays a significant role in improving food security by increasing physical access and also by reducing transaction costs. These, in turn, increase prices for food producers and/or reduce prices for consumers. The landless agricultural labourers or marginal farmers constitute the largest groups of food-insecure people. These, and even most of the small farmers, enter the food market as buyers. First, they sell their small surpluses in the post-harvest season because of cash needs and become buyers of food later in the season. Studies show that wheat growing marginal farmers sell 24 per cent of their production, whereas their marketable surplus is only 4 per cent. For the paddy growing marginal farmers, the marketed quantity consists of 28 per cent of output, even when their consumption needs exceed production by 9 per cent (DMI 1995: 53–72). The food marketing system, therefore, is quite important for the food security of these vulnerable groups.

### **Marketing channels and market structure**

A considerable proportion of the food produced on the farms is retained by families, especially by marginal and small farmers, for domestic consumption. With the increase in per farm output, the proportion sold in the market has increased considerably over the last 50 years. The marketed surplus–output ratio for all agricultural commodities, which was only 33.4 per cent in 1950/1, increased to 64.1 per cent in 1999/2000 and has in recent years gone up to around 70 per cent (Acharya 2003b). The share of private trade in handling the marketed surplus continues to be considerable, accounting for approximately 80 per cent of all agricultural commodities, with farmers' co-operatives and public agencies handling around 10 per cent each (Acharya 1994). Direct marketing by farmers is being promoted through the establishment of farmers' markets, but the proportion of marketed surplus going directly from producers to consumers is small. Actual buying and selling of commodities at wholesale level takes place in market yards and sub-yards especially created for the purpose. At present, for the exchange of food and other products, there are 2,354 main market yards, 4,807 sub-market yards and 27,294 periodic market places in the country. These are managed mostly by the agricultural produce market committees and local government institutions. Buyers pay a fee to the managers of the yards.

The wholesale foodgrains trade is handled, in addition to the FCI and co-operatives, by approximately two million private wholesalers (Acharya 1998a). Apart from wholesalers, processors who enter the market as bulk buyers and sellers also play an important role. There are around five million

retailers and 462,676 fair price shops (under PDS). Nearly three quarters of the PDS outlets are in the private sector. Despite a considerable increase in food processing units, the extent of value addition and processing continues to be grossly inadequate: only 10 per cent is processed, 15 per cent semi-processed and the remaining 75 per cent constitutes fresh food. In India, the value addition to food production is only 7 per cent, as compared with 23 per cent for China, 45 per cent for the Philippines and 188 per cent for the United Kingdom (FICCI 2002). Food processing is dominated in India by an unorganized small sector. For example, the traditional unorganized sector handles more than half (51 per cent) of the total 67 per cent output of milk transferred from the villages, and only 16 per cent is processed in the organized sector versus the world average of 52 per cent. But the processing segment of the food market is growing rapidly and attracting investment since the launch of economic reforms in 1991. The multiplier of the food industry is quite large at 2.4 and has a strong impact on employment and farm incomes. The main hurdle to the expansion of this sector is the multiplicity of food related laws. A unified Food Law has now been approved and is at an advanced stage of implementation.

According to one estimate, gross marketing margins in agricultural commodities total Rs1,009 billion, consisting of Rs151 billion as statutory charges, Rs207 billion as net margins of market functionaries and Rs651 billion as the cost of performing various marketing functions. Around 77 per cent of the marketing cost, amounting to Rs500 billion, is estimated to be avoidable loss occurring during handling, transport and storage (Acharya 2003b). The government of India has recently launched a scheme to provide incentives to co-operatives and private entrepreneurs for setting up facilities in the villages for cleaning, grading and packaging, which would help reduce such losses.

### **Regulatory framework**

The current regulatory framework of the food marketing system can be understood to encompass two broad components: (i) regulation of agricultural produce wholesale markets; and (ii) regulation of other marketing activities. At the time of independence, farmers' marketing practices and the methods prevalent in trade circles were perceived to generate losses to farmers in terms of unduly low prices, the higher cost of marketing and physical losses of produce. One of the improvement measures was the regulation of trade practices and establishment of market yards in the countryside. The government circulated a model law in the 1950s and, based on this model, state governments enacted their own legislation. All primary assembly markets (7,161) were brought under the ambit of state acts. Each market is supervised by a committee, with more than half the members representing farmers of the area. The regulation helped visibly to open up

the process of price determination, establish reliable weighting, standardize market charges, eliminate malpractices in the markets, settle disputes between farmers and traders, reduce physical losses of produce and provide amenities to farmers in market yards. Even though the market regulation programme has served its initial purpose well, in the current situation several questions relating to its operations, and even its relevance, have been raised (Acharya 2004b). In this context, the central government has recently circulated another act to replace the old legislation for the purpose of breaking the monopoly of existing regulated markets.

Apart from the regulation of primary wholesale markets, several other legal instruments were enacted by central and state governments to influence the conduct of the market. Legal instruments, which influenced the food marketing system until the early 1990s, included the Essential Commodities Act, which limited the agro and food processing industry to a small scale, and a multiplicity of food-related laws.<sup>5</sup> After the launch of economic liberalization in 1991, there has been considerable dilution of these regulations. Several of these acts/orders have been repealed, rescinded or lifted during the last five years. Nevertheless, due to the threat of their reimposition, private sector sentiment has not improved, and private investment in food marketing and processing continues to be slow.

### **Marketing infrastructure**

Apart from regulatory measures and direct intervention, the structure, conduct and performance of the food marketing system depend on the status of the physical and institutional infrastructure. Infrastructure is important not only for the performance of marketing functions but also for the transfer of price signals, leading to improved marketing efficiency (Acharya 1994). Several measures were taken to improve the marketing infrastructure.<sup>6</sup> Grading and standardization were encouraged, and grade standards for 163 agricultural commodities (mostly food products) have been specified under the AGMARK label. However, at the farm level, the extent of grading continues to be inadequate (7.3 per cent). Transportation facilities were increased and road coverage increased from 0.4 million km in 1950/1 to 2.6 million km in 1996/7. There was also an increase in railway routes, but nearly half of the villages are still isolated from the road or railway network. The storage capacity in the public sector went up from 7,000 tonnes in the 1950s to around 40 million tonnes in 2000/1. The cold storage capacity, which was a meagre 0.3 million tonnes, had expanded to 15.4 million tonnes by March 2001. There has been considerable growth in agro-processing capacity and telecommunication facilities in rural areas. The Ministry of the Food Processing Industry and the National Horticulture Board have launched several incentive schemes to attract investment to food processing.

Apart from the physical infrastructure, there has been considerable expansion of both the public and co-operative sectors institutional infrastructure

for improving the marketing system of farm products. Public sector organizations in food marketing include the Food Corporation of India, commodity boards (tea, coffee and spices), the State Trading Corporation, central and state warehousing corporations, and state agricultural marketing boards. The co-operative network is a three-tier structure consisting of primary, secondary and national organizations, and includes primary agricultural marketing co-operatives, commodity specific marketing and processing co-operatives, and the National Agricultural Co-operative Marketing Federation. In addition, the National Co-operative Development Corporation promotes, guides and supports rural economic activities on co-operative principles. Apart from public and co-operative sector organizations, the *panchayati raj* institutions as local self-government organizations (220,000 at village level, 4,567 at block level and 349 at district level) oversee the functioning of the food marketing system at the local level.

### **Some recent initiatives**

A comprehensive empirical study on Indian foodgrain markets by Wilson (2001: 213–46) has shown that, despite government intervention, rice and wheat markets in the country are highly integrated and integration increased further during the 1990s. However, as mentioned earlier, there are considerable costs in the agricultural marketing system that could be avoided. Several initiatives have been undertaken recently to improve the efficiency of the food marketing system. Direct marketing is being encouraged through the training of farmers and establishment of farmers' markets. Contract farming, which involves the linking of farmers with the marketing and input firms, is being encouraged and is fast emerging in several commodities and areas. Information technology is being increasingly deployed to improve market integration and farmer–processor linkages. Private sector, co-operatives or farmers groups' are being encouraged to establish alternative market yards. Several trading activities have been de-licensed and private investment, including foreign direct investment, is being encouraged to cover the bulk handling, storage and processing of food. Futures trading in food products has been permitted and small-scale reservation in food and agro-processing has been reduced.

### **Lessons from the experience of India**

India accounts for nearly one sixth of the world consumers. At the time of independence in 1947, the country faced a series of serious food crises. The demand for food far exceeded the supply. Food prices were at high levels and more than half of the population were poverty-stricken without adequate purchasing power to have access to food. The food and agricultural development policy pursued since the mid-1960s helped to increase the production of staple cereals and other food products, improve the physical

and economic access of households to food, and reduce the incidence of hunger, food insecurity and poverty. Based on a quick survey of India's food policy, approach to food security, its current food security situation, important policy instruments and strategic initiatives, it is obvious that there are quite a few lessons and emerging issues, which need attention in order to achieve the goal of food security for all.

The best assurance of food security in agriculture-dominant countries can be provided through the accelerated growth of food and/or other agricultural products and the introduction of cost-reducing technological changes in agriculture through a judicious combination of investment in agricultural research and technology transfer system, the creation of a rural infrastructure and the provision of an incentive framework for farmers (Acharya 2002c). Further, as the agricultural sector is dominated by marginal and small farmers, their participation in the growth process is critical. Most of the rural poor and food-insecure households either own small land plots or work as farm labourers. The strategy to alleviate hunger and achieve 'food security for all' must, therefore, involve advancing the production and incomes of small farms. This, in turn, implies broad-based efforts to develop agriculture, animal husbandry, fisheries and forestry. Farmers must continue to receive adequate incentives to produce food and other farm products. National policies must ensure that small and poor farmers have access to land, water and animal grazing resources. Property rights of small farmers and fishermen must be secured. Institutional reforms are needed to ensure the rights of the poor to common property resources of water and grazing lands on an equitable basis.

India's food security policy is built on various livelihood entitlements; namely, production based, exchange based, labour-based and transfer-based entitlements. A combination of policies and programmes was intended to help different food-insecure communities and sections of people. These included the supply of farm inputs at lower prices, price support to farmers, keeping the food prices at a reasonable level through procurement, building buffer stocks and the public distribution system, food-for-work and other employment-oriented programmes, and direct food assistance schemes. The rationale of the food and input subsidies has also been viewed in this context (Acharya 2001: 129–212). However, several issues relating to the financial and environmental sustainability, and consequently to the economic costs of the package, are being raised. The debate revolves around the question as to whether the food security of the poor can be assured at a lower cost by phasing out food and input subsidies? It is now being realized increasingly that, although farmers must continue to receive adequate incentives for producing food and other agricultural commodities, the emphasis should shift from general input subsidies to the provision of specific targeted subsidies, the continuous introduction of pre- and post-harvest cost reducing technologies, support for more efficient food processing methods, and the

development of institutional mechanisms to reduce the prices to farmers and the elimination of risks regarding yield and income (Acharya 2002e).

As the livelihood of a large section of the population depends on the production of food, great care is needed in the liberalization of the food product trade. Studies have shown that unrestricted trade liberalization in foodgrains may expose both the small producers and poor consumers to the high volatility inherent in international food prices (Chand and Jha 2001: 7–126). Several safeguards available in the WTO's Agreement on Agriculture should be used prudently.

Some studies (Patnaik 2003) have shown that economic reforms have adversely affected the access of the poor to food and have forced many families into the trap of food insecurity. Liberalized imports of edible oils with low tariffs have resulted in low prices for the oilseeds that are mostly grown by resource-poor dry land farmers. The low oilseed prices have induced the closure of a large number of tiny rural processing units – eliminating, in the process, the employment opportunities of many families. Despite the gains to consumers of edible oil by way of lower prices, the net social welfare of liberalized imports has been estimated as being close to zero (Chand and Jha 2001). This implies a redistribution of welfare/income from the mostly poor oilseed growers (whose livelihood depends to a large extent on oilseed production) to the consumers (whether poor or not so poor, but for whom only a small proportion of their total expenditures goes towards cooking). Therefore, the need exists for caution in deciding the speed and sequencing of trade liberalization and economic reform policies. Liberalization of domestic markets must precede the opening up of trade and the reduction of import duties on agricultural commodities (Acharya 1998b).

An efficient marketing system significantly contributes to the alleviation of hunger and the improvement of food security. The policy environment and development initiatives in developing countries require several changes in order to reduce avoidable costs in marketing and encourage private sector investment and participation in marketing. Governments should reformulate market-related policies and make complementary investments in the rural marketing infrastructure to attract private investment to value addition and food processing (Acharya 2003c).

So long as poverty persists and transient food insecurity occurs at frequent intervals, direct food assistance programmes will continue to be important in the fight against hunger, food insecurity and malnutrition (Acharya 2002d). Chronic food insecurity is becoming increasingly concentrated in certain regions and communities, which makes the targeting of food assistance programmes a viable proposition. Furthermore, the success of programmes aimed at reducing food insecurity depends on an environment with active and vibrant civil society organization, voluntary groups and co-operatives. The food assistance programmes should include a combination of (i) distribution of subsidized foodgrains in pre-decided quantities to targeted families;

(ii) supply of adequate foodgrains free of cost to the poor, old and destitute; (iii) provision of one meal a day to poor schoolchildren during school hours; (iv) supplementary nutrition dispersion (including micro-nutrients) to infants and expectant/nursing mothers; (v) a food-for-work programme for willing able-bodied adults; and (vi) an employment guarantee programme in all areas.

Experience has shown that whenever India needed to enter the world market to buy foodgrains (wheat), the price was higher than the world market average (Chand and Jha 2001). This is because in the world wheat market, the characterization of India as a small country is not favourable to India. Therefore, a large populated country such as India should continue to maintain a reasonably high degree of self-sufficiency in foodgrains.

The experience of India provides a major lesson for developing countries characterized by large segments of the rural population depending on food production for their livelihood and by the high incidence of poverty, food insecurity and malnutrition. The strategy to improve food security must encompass programmes to increase food production that combine improved technology transfer, price support to food producers and supply of inputs at reasonable prices to farmers, improvements in the food marketing system, generation of employment, direct food assistance programmes and improvement in the access to education and primary health care.

## Notes

1. For details on the public distribution system, see pp. 19–20 of this chapter.
2. For details of improvement in agricultural marketing infrastructure during the last 50 years in India, see Acharya (2004b) and the brief account beginning on page 25 in this chapter.
3. Excluding Punjab, Haryana, Western Uttar Pradesh and Andhra Pradesh.
4. Fertilizer subsidy is borne by the central government. For domestic fertilizers (nitrogenous), the subsidy is the difference between the farmers' price (government fixed) and the retention price (based on manufacturer's normative costs) that is paid by the government to fertilizer plants. For phosphatic and potassic fertilizers, which are now decontrolled, the subsidy is the funds distributed to the state governments for keeping the selling prices of these fertilizers in check. There is no quantitative restriction on farmers for buying fertilizers. In the case of electricity, the subsidy is estimated at the state level as the difference between the unit cost of generation, transmission, and distribution and user charges collected from farmers multiplied by the total electricity reportedly supplied to the agricultural sector. This is the loss incurred by electricity companies/departments that is reimbursed by the state governments. The subsidy on canal water is the difference between the water charges collected from farmers and the cost of operation and maintenance of irrigation works. The subsidy on electricity and canal water is borne by state governments.
5. An illustrative list of 222 such acts/orders is available in Acharya (2004b) and GoI (2002c).

6. For a review of the importance and progress of marketing infrastructure, see Acharya (2004b).

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# Index

Notes: b=box; f=figure; n=note; t=table; **bold**=extended discussion or heading emphasized in main text.

- 
- Abhijit Sen Committee 318, 325(n26)  
Amalgamated Banks of South Africa  
    (ABSA) 74  
academia 184, 276, 283  
accountability 217(n3), 270, 276, 278,  
    281, 301, 318  
    public hearings **303b**  
Aceh 255  
Acharya, S.S. i, xiv, 31(n2, n5), 32(n6),  
    113, 124n, 305(n4), 313  
    works **32–3**  
Ackello-Ogutu, C. 65  
Act 53 (India) 169  
acute respiratory infection (ARI) 235  
Adams, W.M., et al. (2002) 162, 190  
    Aveling, R. 190  
    Brockington, D. 190  
    Dickson, B. 190  
    Elliott, J. 190  
    Hutton, J. 190  
    Roe, D. 190  
    Vira, B. 190  
    Wolmer, W. 190  
Adivasi children 325(n22)  
ADMARC 77  
adults 150, 247, 252  
    prime-age 143, 154  
Afghanistan xx, 100, 249, 253  
Africa xvii, xxi, 52, 55, 168, 172, 187,  
    230, 247  
    gender, HIV/AIDS, and rural  
    livelihoods **xxi, 131–60**  
Agarwal, B. 223, 225, 226,  
    230–1  
age xxi, 133, 177, 178, 187, 200, 202t,  
    207–11, 212t, 216, 281  
    male–female mortality comparisons  
    235  
    reproductive (women) 235  
‘Agenda 21’ (1992) 166, 173  
AGMARK label 27  
agrarian systems 268b  
agricultural census (1995/6) 16  
agricultural commodities  
    marketed surplus to output ratio 25  
    support prices 5  
agricultural development, sustainable  
    172  
agricultural education and training 5  
agricultural equipment 145  
agricultural extension services 5, 132,  
    170, 184, 205, 217(n3), 226  
agricultural fairs 178  
Agricultural Price Commission (APC)  
    re-named CACP [in 1985] 11, 107  
agricultural price support policy (India)  
    **11–18**  
    conflicting interests 14, 15  
    farm input subsidies 15–18,  
    31(n4)  
    impact and issues 14–15, 31(n3)  
    policy objectives and framework  
    11–12  
    public–private share in grain trade 13  
    support prices (salient features)  
    12–13  
agricultural production 144, 148  
agricultural research and extension  
    52, 55  
Agricultural Research and Extension  
    Network (AgREN) 222  
agricultural research, extension and  
    technical services 67–8

- agricultural sector 16, 131, 154, 171, 175, 227, 296  
 female employment (South Asia, 1991–9) 223t  
 Sri Lanka 230  
 Agricultural Trade Development and Assistance Act (USA, 1954) 124(n1)
- agriculture/farming xvi, xxi–xxii, 30, 47, 89, 134, 135t, 168, 170, 187, 189, 195, 238(n1), 292, 306(n5)  
 commercial 55, 222  
 contribution to GDP (SADC) 58–9  
 female participation (Sri Lanka) 230  
 feminization 226  
 impact of natural disasters 37–8  
 mixed 147n, 151  
 production trends (South Pacific) 39–43  
 share in GDP (South Pacific) 51, 53t  
 subsistence 55  
 sustainable 165, 166  
 terms of trade 12  
 traditional systems 169
- agro-ecological zone (AEZ) 200, 208–12t  
 Zambia 136
- agro-industry 67  
 agro-processing 27, 61  
 agrobiodiversity xxi, 161–93  
 agroecological environment 154, 188  
 agroecosystems, sustainable 169  
 agroforestry systems 170
- aid 164–5, 280  
 aid dependency 60  
 alcohol 94, 231  
 ALDEP scheme 68  
 Alston, P. 285(n16)  
 Ambedkar, Dr 325(n37)  
 Amichev, B. 190  
 anaemia 234, 248, 254, 256, 261(n7)  
 analysis of variance (ANOVA) 140–1t, 142n, 144  
 Andersen, R. 171  
 Andhra Pradesh 31(n3), 224, 229  
*Anganwadi Yojana* (AWCS, government childcare centre scheme, India, 1975–) 21, 309b, 311, 315, 319, 322 325(n22)
- Angola 58, 62, 69f, 70, 75t, 221t, 250, 255
- angular stomatitis (riboflavin deficiency) 249, 250  
 animal fats 62, 64t  
 animal genetic resources 176, 186, 187  
 animal production: research 177  
 animal products 61–2, 123  
 animal species xxi  
 five main food sources 161  
*Annapurna* scheme (APS, India, 2000–) 20, 113, 309b  
*Antyodaya Anna Yojana* scheme (AAY, India, 2000–) xxiv, 20, 113, 291, 305(n4), 309b, 313 324(n16–21)  
 legal entitlement 324(n18)  
 monitoring 324(n18)  
 priority groups 313–14, 324(n19)  
*Antyodaya* cards 313–14, 324(n17, n21)  
 Anuradhapura (Sri Lanka) 230  
 apartheid 269  
 APL (above-poverty-line) families 20, 111, 112t, 112  
*see also* BPL
- Aqwara, H.O. 216  
 arbitrage 77  
 armed conflict 6, 245, 254, 269  
 army (Sri Lanka) 295  
 Arntz, T. 157(n2)  
 ascorbic acid 255  
 Asia xxi, 37, 39, 51, 52, 55, 172, 187, 216, 230, 247, 257  
 agricultural production (1991–2002) 40t  
 Asian Development Bank (ADB) 46n  
 Asian economic crisis (1997) 257  
 ‘Asian enigma’ 219  
 Assam 291  
 asset groups 151  
 asset index 145–8, 155  
 asset ownership 139  
 asset sales 97, 145, 151, 152, 163, 295t  
 assets 22, 23, 68, 86, 89, 132, 145, 146–7t, 237  
 association, means of 302–4b  
 Association of Asian Social Science Research Council (AASSREC), xvi  
 Association for Strengthening Agricultural Research in East and Central Africa (ASARECA) 217  
 Australia 39, 40n, 50, 121  
 Aveling, R. 190

- awareness xxii, 174, 176, 178, 184,  
197, 216, 258, 278–9, 302b
- Azerbaijan 245
- Babu, S.C. 78
- Bage, L. 236
- Balana, M. xiv
- Bam earthquake (Iran, 2003) 261(n10)
- bananas 50, 135
- Bangladesh xvii, 94, 221t, 222, 226,  
230–4, 245, 251, 256, 261(n12), 301  
cereal production and calorie  
availability (1970–2000) 288t  
distress and food 293, 294t  
female employment (1991–9) 223t  
female workforce 227  
floods (1998) 251  
human development and life  
expectancy 290, 290t  
wage differentials (2001) 228t
- banks 22, 23, 74
- Baran district (Rajasthan) 291, 320
- Barany, M., et al. (2001) 170, 190  
Amichev, B. 190  
Hammett, A.L. 190  
Sene, A. 190
- Barber, J. 166
- bargaining power 299  
intra-household 231
- Barme, C. 232, 234
- Barwani District (Madhya Pradesh) 320
- basal metabolic rate 82, 86, 292
- basmati rice 86
- Basotho households 76
- beans 65, 136
- beef 46t, 64t, 76
- Beijing 83, 114, 164
- Beijing Review* 114
- Beira (Mozambique) 75
- Beit Bridge 75
- benevolence 304, 305
- Benin 221t
- beriberi 249–50
- beverages 39, 50, 65, 66
- Bhargava, P. xiv
- Bhouraskar, A. 78
- Bhutan 221t, 227, 223t, 224, 233
- Bihar 291, 323(n7)
- Binswanger, H. 87
- biodiversity xx, xxi, 161–3, 164, 170–1
- biotechnology 77–8
- birth weight 99, 220, 221t, 233,  
234, 247
- biscuits 38, 39, 50
- Black, R. 253, 262
- Black Economic Empowerment  
(South Africa) 60
- black market 74, 316
- blackgram 12
- 'blackleg' 249
- blacksmithy 229t
- blindness, preventable 250
- blood samples 259
- boat transport 54
- body mass index (BMI) 96, 291, 291t,  
305(n3)
- Boerma, A.H. (FAO Director-General)  
273
- Bohle, G. 85n
- Bondo district (Kenya) xxi, 194–5, 199,  
201, 215–16
- Booyesen, F. 157(n2)
- border barriers 75–6, 79
- Borowiak, C. 168
- Bose, A.B. 232
- Bosnia 245, 254
- Botswana 58, 60, 61, 62, 68, 69f,  
70, 76  
cereal tariffs (2003) 67t  
CFF loans and cereal import  
requirements 75t  
food consumption (1991–2001)  
63–4t
- boys 163, 232, 235, 248, 291
- BPL (below-poverty-line) population  
20–3, 111–13, 194, 237, 310b, 314,  
316–19, 322, 324(n21), 324(n20)
- BRAC 256
- Brand, D. 322
- Brazil 92, 257, 277, 278, 290, 290t
- bread 38, 39, 248
- breadfruits 45, 50
- breast-feeding 235
- breeders 187, 188  
commercial 168
- Briguglio, L. 37
- Brockington, D. 190
- Brown, L. xiv
- Brush, S.B. 168–9

- buffer stocks xix, 5, 13, 19, 23, 24, 29, 54, 107, 111, 112, 117, 119, 238(n1), 294, 304
- Bangladesh 301
- central government control 'essential' 123–4
- India 117t, 125(n2)
- 'strategic grain reserves' 66–7, 72–3, 74, 79
- Building on Local Knowledge, Gender and Biodiversity* (FAO) 176, 189(n2)
- Burma 3
- Burundi 252
- Cairo conference 164
- calcium deficiency 248
- Calderón, J. 167
- calories xxi, 231, 232, 247, 248, 257, 270b, 288, 295, 296
- Bangladesh 293, 294t
- India (1999–2000) 289t
- main sources (three plants) 161
- South Asia (1970–2000) 288t
- camps 97, 251, 255
- Canada 277
- 'capability deprivation' (Sen) 257
- capacity-building 23, 185, 186, 276, 278
- LinKS project 174, 175–6, 189(n1)
- Cape Town xiv
- capital 78, 170
- carbohydrates 249
- carbon dioxide 162
- cardiac failure 250, 255
- cardiac functions 261(n11)
- cardiovascular disease 99, 247
- Caribbean xvii, 221t, 236, 253
- Carpenter, K.J. 250
- Cartagena Biosafety Protocol 77
- cash 97, 140–2t, 201
- cash crops 62, 87, 136, 186–7
- cash transfers xxiii, 90–1, 92, 94, 95, 97, 99, 100, 114, 118, 120–1, 287, 296–7
- limitations 297, 305–6(n5)
- cassava 45, 50, 63t, 71n, 87, 136, 247, 248, 249
- caste 113, 281, 299, 312–13 324(n14), 325(n22)
- cattle 136, 146–7t, 177, 202t
- cattle trypanosomiasis 145
- Caulfield, L., et al. (2004) 251, 262
- Black, R. 262
- Richard, S. 262
- central government 18, 20, 22, 27, 31(n4), 107–8, 116, 301, 312–13, 315
- control of buffer stocks 'essential' 123–4
- Central Statistics Office (CSO, Zambia) 138, 139, 153
- 'centrally sponsored schemes' (India) 309, 309b
- Centres for Disease Control and Prevention (CDC) 251
- cereal gap (SADC, 2001–2) 71t
- cereals xviii, 4, 5, 7–9, 28, 39, 47, 54, 55, 62, 65, 68, 109–10, 120, 232
- coarse 7t, 8t, 8, 9
- consumption (SADC, 1991–2001) 63t
- consumption per capita 9
- food aid (SADC) 69, 69f, 70
- highly milled (cause of beriberi) 249
- import dependence and degree of globalization 43–5
- imports 49t, 72, 74–5, 75t, 219
- net exporter 3
- output per capita 7
- production (India, 1949–2004) 7, 7t, 8t
- production (South Asia, 1970–2000) 288t
- production, imports, exports (South Pacific) 41t
- yield 8
- Chabane, N. 76
- Chad 221t
- Chadha, G.K. 226
- Chambeshi Bangweulu floodplains 136
- charcoal 136, 151
- Charman, A. xiv
- chaukti* 299
- Chen, M. 225
- Chhattisgarh 324(n13, n21)
- Chi-square test statistic 140t, 142n, 144, 146–7t, 147n, 213–14n
- chickpea 12
- child growth 247, 253, 257
- monitoring 94
- child health 257
- child labour 152

- child mortality 235, 261(n7)  
 childcare centres 21  
*see also Anganwadi Yojana*  
 childhood xxiv  
 children 6, 11, 19, 23, 55, 92, 95, 143,  
 195, 211, 219, 232, 233, 250, 251,  
 252, 258, 293, 313, 315, 321  
 calorie consumption 91  
 consumption level 'protected by  
 parents' 247  
 food consumption 97  
 forced to forgo schooling 298  
 health 268–9  
 hunger 312  
 life-saving phase 255, 261(n11–12)  
 malnourished 20–1, 236, 254–5, 258,  
 261(n13), 295  
 nutrition 231  
 nutritional outcomes 220  
 scurvy 249  
 socialization 324(n14)  
 undernourishment (long-term effects)  
 234–5  
 underweight 221t  
*see also* midday meals programme  
 Chimoio 77  
 China (PRC) xvii, xviii, 3, 26, 51,  
 86, 107  
 PDS (until early 1990s) 108–10  
 PDS (since early 1990s) 113–15  
 public distribution systems:  
 implications for food security  
 xix, 106–27  
 urban bias 'unfair to farmers' 119–20  
 Chinese government 118  
 choice 99, 257  
 Choma District (Zambia) 136  
 Christianity 224–5  
 chronic energy deficiency (CED) 11  
 chronic illness 132, 138  
 churches 204  
 cities 54, 109, 114, 165, 230  
 citizens' groups 314 324(n21)  
 civil society xxiv, 30, 182, 185b, 278,  
 283, 287, 301, 304, 312, 315  
 civil society organizations (CSOs) xix,  
 xxiii, xxv, 19, 20, 22, 73, 78, 175,  
 272, 298, 300, 302, 320  
 civil conflict/unrest 92, 96, 280  
 class 85f, 113, 281  
 climate 135, 195  
 climate change 162, 163, 164, 172  
 clothing/clothes 82, 231, 268b  
 Coady, D., et al. (2004) 98, 101  
 Grosh, M. 101  
 Hoddinott, J. 101  
 coarse grains 39, 42t, 109–10  
 coconut 12, 45, 50  
 Code of Conduct on Right to Food 274  
 coffee 28, 50, 65, 87, 88  
*robusta* 136  
 cognitive and motor development 234  
 COHRE 322  
 collateral 203  
 collective power 303b, 304b  
 commercialization index 200, 207,  
 207–12t, 209, 211  
 Commission for Agricultural Costs and  
 Prices (CACP) 11–12, 14  
 previously APC 11, 107  
 Commission on Genetic Resources for  
 Food and Agriculture (CGRFA)  
 172, 187  
 Commissioners of Supreme Court  
 (India) 291, 292, 305(n2)  
 Committee on World Food Security  
 (CFS) 58, 275  
 commodity boards 28  
 'common heritage' regime 168  
 communication 9, 182, 183–4, 300  
 research 174, 178–9, 189(n3)  
 Communist Party of China 108  
 community health workers 153  
 community therapeutic care (CTC) 258  
 comparative advantage 55, 61, 65  
 compensatory financing facility (CFF),  
 74–5, 75t  
 'inadequate' 75  
 concepts 179–81  
 CONCERN 258  
 conferences 83, 164, 278  
 Congo, Democratic Republic of the  
 (DRC) *see* Democratic Republic of  
 the Congo (DRC)  
 conservation 167, 168, 175  
 Consultative Group on International  
 Agricultural Research (CGIAR) 166  
 consumers xx, 11–12, 14, 15, 28, 30,  
 50, 108, 109, 111, 117, 119  
 low-income 114  
 poor 248

- consumers – *continued*  
     subsidized grain 19  
     urban 113, 248  
 consumption 166, 294, 295t  
     domestic 25, 45  
     South Pacific 38–9  
 contractors 319, 325(n31)  
 Convention on Biological Diversity  
     (CBD) 166, 168–9, 173  
 Convention on Elimination of  
     Discrimination against Women  
     (CEDAW)  
     ‘Article 12.2’ 268  
     ‘Article 14’ 268  
 Convention on Food Security 274  
 Convention on Prevention of Genocide  
     (1948) 269  
 Convention of Rights of Child (CRC,  
     UN, 1989) 268–9  
     ‘Article 6’ 284(n2)  
     ‘Article 24.1’ 305(n1)  
 Convention on Suppression of  
     Apartheid (1973) 269  
 Convention against Torture (1984) 269  
 Conway, T. 100(n3)  
 Cook Islands xxv(n1), 35, 36t, 36  
     cereals (total dependence on imports)  
         43, 44t  
     cereals, roots, tubers (production,  
         imports, exports, 1991–2002)  
         41–2t  
     degree of globalization 44t  
     dependence on foreign trade 45, 46t  
     financing of food imports 49t, 50  
     income per capita 51, 53t  
     poverty 53t  
     rice (import-dependency) 44t  
     rural–urban migration 55  
     share of agriculture and food in trade  
         47, 49t  
     trade (food products) 47, 48t  
     trade deficit (agricultural products)  
         47, 48t  
     wheat and flour (import-dependency)  
         44t  
 cooks 312, 313  
 Coonrod, C.S. 234  
 Cooper, H.D. 166  
 cooperatives 25, 26, 27, 28, 50  
 Copenhagen conference 164  
 copper 46t, 255  
 Copperbelt 77  
 copra 45, 46t  
 corruption 93, 281, 300, 303b, 319,  
     320, 325(n31)  
 cost of living 11, 12  
 costs 75, 79, 118–19, 213t, 214t, 215  
 Côte d’Ivoire 221t  
 cotton 17t, 61, 62, 80(n8), 110n, 136  
 courts 308–9  
 credit xxii, 4, 5, 22, 23, 53, 59, 68, 89,  
     200, 203, 206, 207–12t, 215, 216,  
     226, 231, 237  
     access 204–5, 205t, 217(n1)  
 cropping patterns 151  
 cropping systems 217(n2)  
 crops xxii, 86, 135–9, 166, 178, 195  
     commercial 38  
     livelihood option 137–8  
     national estimates 70–1  
     subsistence 38  
 cross-sectional studies, limitations 155  
 cultivated area 140–2t, 144, 151, 154  
 Cultural Exchange Programmes  
     (CEPs) xvi  
 culture of dependence 297  
 currency 66  
 curriculum 185b, 216  
 Curry, J. xiv  
 customary norms 267  
 cyclones 37, 54  
     Ami (2003) 38  
  
*daijo* property (Nepal) 225  
 dairy products 50, 54, 65, 66, 232,  
     292  
 Dalit children 325(n22)  
 Dalits 312–13, 324(n14)  
 Dar es Salaam 75  
 Darfur 252, 255, 261(n15)  
 Dasgupta 232  
 data cleaning syntaxes 153  
 data collection 155, 199  
     PRA/RRA techniques 150  
 data deficiencies  
     buffer stocks 124  
     consumption expenditure (South  
         Pacific) 39  
     contribution of iron deficiency to  
         malarial mortality 261(n7)  
     destitution 324(n16)

- food frequency checklists 149
- government subsidies (PRC) 110n
- HIV/AIDS (impacts on food security) 137
- household income and expenditure 145
- household surveys 152
- impact of natural disasters (South Pacific) 37–8
- maternal mortality rates 233
- men 180
- poverty estimates (small islands) 52
- 'recall loss' 152
- socioeconomic aspects 180
- daughters 223
- inheritance 224, 225
- Davis, B. i, xiv, 100n, 124n
- de Haan, A. 101(n4)
- de Méricourt, L.R. 250
- death/mortality 71, 72, 87, 132, 133, 138, 140–2t, 144, 145, 151, 153–6, 234, 243, 246–53, 256, 291, 292, 320
- causes in developing countries 245
- children 251, 261(n5–6)
- children under five years 290, 290t
- disaster-related 254, 261(n10)
- foetal 252
- leading cause (SSA) 131
- malaria 252
- male-female comparisons 235
- measles (vitamin A deficiency) 251, 261(n5–6)
- national family benefit scheme (India) 309–10b
- neonatal 235, 252
- premature 91, 235, 287
- debt cancellation 164
- debts 293
- decision-making 163, 173, 177, 188, 189, 197, 216
- del Ninno, C.D., et al. (2003) 293, 306
- Dorosh, P.A. 306
- Smith, L.C. 306
- Delhi 320
- Democratic Republic of the Congo (DRC) 58, 62, 65, 75t, 252, 253
- demography 91, 171
- Denmark: Royal Ministry for Foreign Affairs xiii
- dependency ratios 154–5
- desert development programme (DDP) 298
- desertification 163, 164
- deserts 9
- destitution 31, 309b, 310b, 310–11, 313–14, 321, 324(n16–21)
- Dev, S.M. 119
- developed countries xvi, xxiv, 37, 121, 166, 222, 276
- 'OECD countries' 93
- 'rich countries' 283
- developing countries xvi, xviii, xxiv, 30, 31, 35, 51, 87, 99, 106, 121, 165, 166, 168, 194, 219, 220, 222, 230, 235, 236, 237, 246, 250, 259, 266, 276, 288
- cause of disease and death 245
- economic activity rates (women) 227
- 'poor countries' 164, 167, 283
- small islands 37
- development
- failure (root causes) 164
- national 131
- rural 165, 171, 302n
- see also* sustainable development
- development planning 4
- development of women and children in rural areas (DWCRA) 23
- development workers 189, 178, 185b
- diarrhoea 138, 248, 250–1, 253, 261(n2, n8, n12)
- Dickson, B. 190
- diet 55, 96, 244, 246–7, 250, 257, 270
- rural versus urban (Indonesia) 248
- dietary diversity 259
- diet quality 248, 258, 260
- Ding, H.P. 114
- direct food and other assistance programmes 18–25, 29, 30
- distribution of subsidized foodgrains 19–20
- FFW and wage employment programmes 21–2
- food subsidy 23–5
- other social assistance programmes 23
- self-employment augmentation programme 22–3
- SNPs 20–1
- direct transfers 68
- disability 235, 314

- discrete choice model 198, 199  
 discrimination 280–1, 312–13  
 disease/s 164, 243, 244, 248  
   causes in developing countries 245  
   communicable/infectious 55,  
     171, 251  
   nutritional 246, 261(n1)  
 distance to supplier 212–14t, 215  
 distribution 115  
   subsidized foodgrains 19–20  
 Dobie, P. 192  
 documentation 181  
 Doha Declaration (2001) 277  
 domestic chores 215  
 domestic support (SADC) 67–70,  
   80(n3)  
 domestic workers 228  
 donors xvii, 68, 70, 73, 74, 79, 93, 164,  
   168, 186, 278, 280  
 Dorosh, P.A. 306  
 Dovie, D.B.K. 166  
 dowry 233  
 draught animals 140–2t, 144, 155  
   ‘animal draught power’ 136  
   ‘animal traction’ 196, 201, 206–11,  
     206–12t, 213, 215, 216  
 drought xxiv, 4, 20, 61, 65, 68–9, 70,  
   73, 87–8, 97, 119, 133, 145, 149,  
   247, 254, 257, 258, 287, 288, 292,  
   296, 304, 308, 310, 313, 320,  
   323(n2)  
   Rajasthan 294, 295t  
 drought-prone area programme (DPAP)  
   298  
 dry season 72  
 dryland management 172  
 dual crop system 62  
 dumping 67  
 Durban 66  
 Dutta, B. 119
- earthquakes 37  
 East Asia and Pacific 221t, 227  
 East Timor 254  
 Eastern Africa 170  
 Eastern and Central Africa Programme  
   for Agricultural Policy Analysis  
   (ECAPAPA) 217  
 Echessah, P. 65  
 econometric analysis: gender and farm  
   mechanization (Kenya) 207–15  
   effects of household socioeconomic  
     characteristics on choice of  
     mechanization 207–11  
   technology attributes influencing  
     choice of mechanization method  
     213–15  
   technology attributes preferred by  
     households 211–13  
 econometrics 199  
 economic development 166  
   food subsidies 121–2  
 economic diversification 164  
 economic growth 82, 83, 165, 188,  
   195, 279, 290  
   supply-side policies 280  
 economic integration (SADC) 61  
 economic reforms (India, 1991–), 17–18,  
   26, 27, 30  
 Economic and Social Research  
   Foundation (ESRF, Tanzania) 65,  
   66, 80(n1)  
*Economist, The* 285(n17)  
 economists 92, 121  
 ecosystems 174  
 Ecuador xx, 100  
 edible oils 9, 10t, 30, 108, 110, 110n  
 edible oilseeds 9–10, 10t  
 education xxiii, 31, 55, 92, 164,  
   219–20, 222, 231, 233, 237, 257,  
   277, 280, 309b, 314  
   maternal 236  
   primary 236  
 ‘education cess’ (India, 2004) 312–13  
 education survey 315  
 educational attainment xx, 139,  
   235, 237  
 eggs 9, 10, 38, 247, 248  
   consumption (SADC, 1991–2001) 64t  
   production (India, 1980–2004) 10t  
 Eide, A. 269, 284(n4)  
 Eide, A., et al. (1984) 284(n6), 285  
   Eide, W.B. 285  
   Goonatilake, S. 285  
   Gussow, S. 285  
   Omawale, J. 285  
 Eide, W.B. 285  
 El Niño 70  
 elderly people 31, 143, 309b, 310b,  
   314, 321  
   senior citizens 20

- electricity 15–16, 16t, 18, 31(n4)  
 Elliott, J. 190  
 emergencies xxiv, 124, 260, 291, **292–4**  
   ‘excess mortality’ 254, 261(n9)  
   main killers during 248–9, 261(n2)  
   public action 254–9, 261(n9–15)  
 emergency feeding 96–7  
 empiricism  
   application of Right to Food  
     Guidelines 281  
   ‘food versus cash’ debate 94, 95t  
   foodgrain markets (India) 28  
   gender, food security, rural livelihoods  
     xxi  
   gender inequality (intra-household)  
     231  
 employment 18, 31, 113, 164, 195,  
   297, 299, 305(n5), 308, 310, 311,  
   323(n6)  
   non-agricultural 227–8  
   off-farm 165  
   rural 22  
   ‘state responsibility’ 300  
   supplementary 226  
   waged 151, 298  
 employment assurance scheme  
   (EAS) 22  
 employment guarantee 31, 97, 98, 299  
   national scheme (campaign objective,  
   India) 310–11  
 Employment Guarantee Act (India,  
   2004) 323(n6)  
 employment opportunities 5, 6, 30,  
   55, 298  
   off-farm 54  
 employment programmes 7, 11, 19, 29,  
   31, 292, 298, 299, 302, 319, 320,  
   325(n30, n32)  
   rural 113  
 empowerment xxii, 85f, 270, 277  
   public hearings (*jan sunvai*) **303b**  
 encephalocele 253  
 endangered species 167  
 energy [human] 38, 86, 97, 233, 243,  
   244, 246–7, 251, 255, 291t  
 enhanced outreach strategy (EOS) 258  
 entitlement xviii  
   freedom from ‘hidden hunger’ **244–6**  
   quality **246–8**, 261(n1)  
 environment xviii, 166, 167, 171, 189,  
   194, 295  
 environmental fragility 37, 299  
 environmental processes 174  
 environmental sustainability 29,  
   78, 162  
 error probability 207–14n  
 Essential Commodities Act (1955) 27  
 Ethiopia xx, 100, 220, 221t, 245, 246,  
   251, 258  
 ethnicity 95, 281, **294–6**  
 Europe xviii, 55, 67  
   famine (1817) 246  
 European Union 50, 66, 73  
 ‘excess mortality’ 254, 261(n9)  
 experience 31, 183, 184, 184b, 188,  
   200, 202t, 303b, 323  
 export earnings xviii, 55, 74  
   South Pacific **45–50**  
 export opportunities 74  
 export trade 75  
 export-led growth 60  
 exporters 8, 50  
 exports 5, 7, 66  
   agricultural 49t, 50  
   from buffer stock (China, 1998–2003)  
     123  
   from buffer stock (India, 2003) 119  
   cereals, roots, tubers (South Pacific)  
     41–2t  
   food products 48t  
   non-cereal 61  
   South Pacific **45–7**  
 expression  
   means of **302–4b**  
 extension workers 188  
  
 F-75, 256  
 Fafchamps, M. 86, 87  
 fair-price shops 20, 24, 26, 107, 108,  
   115, 118, 318, 325(n27)  
 family/families xx, xxii, 23, 164, 219,  
   226, 230, 267–8b, 272, 277, 313, 314  
   rural 170  
 family property 224  
 family workers 227  
 famine xx, 58, 59, 73, 79, 83, 107, 110,  
   254, 293, 294  
   colonial era 252  
   dietary deviations 246, 261(n1)  
   political economy 245  
   ‘rarely cause of death *per se*’ 244

- famine codes 319–20  
 famine relief works 298, 299–300  
 FAO (UN Food and Agriculture Organization) xiii–xv, xvi, xvii, xx–xxi, xxiii, 106, 124n, 131, 132, 134, 153  
   activities xvi  
   annual report 165  
   author/data source 40n, 42n, 44n, 93n, 158, 173, 190  
   farmer field schools (Kenya) 205, 217(n2)  
   global challenge 171–2  
   headquarters 181  
   information papers 277–8, 285(n15)  
   LinKS (regional project) 172–89  
   mandate 273–4, 284(n10)  
   plans 282–3  
   right to food as fundamental human right xxiii–xxiv, 266–85  
   website 158  
   works (listed) 285  
 FAO: Commission on Genetic Resources for Food and Agriculture (CGRFA) 171  
 FAO: Constitution 266, 273  
 FAO: Gender in Development Service 189  
 FAO Council xxiii–xxiv, 266, 275  
 FAO and right to food 272–5, 284(n8–12)  
   FAO's mandate and early work 273–4, 284(n10)  
   role of international organizations, 272–3, 284(n8–9)  
   World Food Summit 274  
   World Food Summit: *five years later* 86, 106, 275  
   World Food Summit follow-up 274–5, 284(n11–12)  
 FAO Secretariat 275  
 FAO statistics 226  
 FAOSTAT database 61  
 farm input subsidies xix, 15–18, 31(n4)  
 farm mechanization choices  
   gender differentiation (Kenya) xxi–xii, 194–218  
 farm-size 17t, 135, 200, 207  
 farmer field schools (FFS) 200, 205, 205t, 215, 217(n2)  
 farmers xix, 11–12, 14, 18, 26, 30, 31(n4), 59, 67, 70, 77, 79, 89, 136, 161, 165, 167, 174–8, 184, 186, 187, 211, 217(n1)  
   gendered knowledge 172  
   guaranteed prices 23  
   marginal and small 25, 29  
   market-oriented 207  
   poor food-producing 54  
   price support 19, 31  
   'real specialists' 182  
   small/marginal 15, 16, 23, 169  
   *see also* smallholders  
   farmers' cooperatives 25, 26  
   farmers' groups 28, 205  
   farmers' markets 28  
   farmers' rights 168–9, 173, 178, 188  
     gendered dimension 172  
 farms, small  
   gender and mechanization (Kenya) xxi–xii, 194–218  
 fertility (human) 233, 257  
 fertilizers 5, 6, 15–16, 16t, 18, 31(n4), 75, 80(n3), 89, 132, 140–2t  
   inability to purchase 145  
   use 151  
 FIAN International 274  
 Fiji Islands xxv(n1)  
   agricultural performance 52–3  
   cereals (import-dependency) 43, 44t  
   cereals, roots, tubers (production, imports, exports, 1991–2002) 41–2t  
   degree of globalization 43, 44t  
   dependence on foreign trade 45, 46t  
   financing of food imports 49t, 50  
   food and agricultural production indices (1991–2002) 40t  
   food security xviii–xix, 35–57  
   import dependence 53  
   income per capita 51, 53t  
   physical accessibility of food 54  
   poverty line 52, 53t  
   price and income board 50  
   re-exports cereals 39  
   rice (import-dependency) 44t  
   rural–urban 51, 53t  
   rural–urban migration 55  
   share of agriculture and food in trade 47, 49t  
   trade (food products) 47, 48t

- trade surplus (agricultural products) 47, 48t
- wheat and flour (import-dependency) 44t
- Fiji Islands Bureau of Statistics 53n
- Fiji Plan of Action for Nutrition (1997-) 55
- Fijians 39, 52
- Filmer, D. 145
- financial capital 134, **145–8**, 151
- Finland: Ministry for Foreign Affairs xiii
- fish 38–9, 46t, 50, 54, 61, 65, 232
  - consumption (SADC, 1991–2001) 64t
  - exports 45
  - production (India, 1980–2004) 10t
  - tinned 54
- fish and fish products 9–10, 48–9t, 54
- fisheries xvi, 29, 47
- fishing xxii, 136, 137–8, 148, 151, 157, 195
- five-year plans
  - first (PRC, 1953–) 108
  - tenth (India) 25
- floodplains 136
- floods/flooding xxiv, 37, 38, 61, 69, 70, 94, 97, 251, 252, 256, 287, 288, 292, 296, 304
  - Bangladesh (1998) 293, 294t
- flour 50
- Focus Group Discussions (FGD) 199
- focus groups 137
- folate deficiency 248, 251, **253–4**
- folic acid 21, 255
- food 60, 82, 86, 187, 231, 267b
  - contaminated 253
  - expenditure 9, 39
  - fortified 250, 255, 258, 260
  - indigenous 178
  - ‘more nutritive’ 9
  - non-cereal 61, 65
  - production (surplus to subsistence requirements) 50
  - production, purchasing, utilization 281
  - production trends (South Pacific) **39–43**
  - ‘pushed into analytical background’ (Sen) 245
  - role as food (reconsidered) 246
  - Sahariya case study **290–2**, 305(n2–4)
  - self-reliance (South Pacific) **47, 50**
  - surplus production 93
  - therapeutic 258, 260
  - tinned 38, 39, 50
  - trade (South Pacific) 47, 48t, 49t
  - use as weapon by state 295
- food access 83f, 84, 85f, 120, 195, 235, 244, 256, 257, 272
  - cereals and non-cereals 69f, 73
  - economic 6, 9, 14, 29, 52, **54–5**, 58, 270
  - global programme 119, 124(n1)
  - household level 58, 293
  - intra-household (gender disparities) **231–3**
  - physical 6, 8–9, 14, 28–9, 54, 58, 270
  - SADC **68–70**
  - unevenness 60
  - wheat 93f
- food aid 58, 77, 79, 92, 93, 149, 256, 258
- food assistance xix, 6, 7, 11, 13, 19, 96
  - targeted 94
- food availability 10, 58, 70, 83f, 84, 165, 244, **288–9**, 291
  - household level xx
  - national 59
- food balance sheets (FBS) 61
- food chains 61
- food consumption 3, **62**, 63–4t, 139, 177
- Food Corporation of India (FCI) 12, 19–21, 23, 25, 28, 107, 116, 119, 293, 309
  - efficiency 14–15
- food credit card system 24, 25
- food crises 28, 247–8, 252
  - India (1947) 3
  - SADC (2001–03) xix, 59
  - South Pacific 38
- food deficits 61
- food distribution 78, 92, 95, 116
  - generalized **96–7**
  - South Asia **288–96**
- food distribution system
  - South Pacific **50–1**
- food for education 96
- food imports xviii, 3, 4, 60, 74, 93
  - financing 47, 49t, 50

- food insecurity xvii–xviii, 22, 30, 115, 165, 171  
   evolution of thinking 83f  
   exploration 83–4, 85f  
   household level 18  
   inter-generational transmission 89  
   macro aspects xx  
   safety nets xx, 82–105  
   utilization dimension 83f, 84  
 food insecurity (South Pacific): strategies to reduce 52–5  
   food: economic accessibility (household level) 54–5  
   food: physical accessibility 54  
 food marketing xx, 11, 24, 31  
 food marketing system 25–8, 54  
   marketing channels and market structure 25–6  
   marketing infrastructure 27–8, 32(n6)  
   recent initiatives 28  
   regulatory framework 26–7, 31(n5)  
   *see also* marketing  
 food poisoning 246, 312  
 food poverty line 288  
 food prices 3, 6, 28, 29, 115, 121, 247–8  
   times of crisis 247  
 food processing xix, 9, 26, 27, 45, 65–6, 109, 123  
 food procurement 115  
 food production xxiv, 31, 83, 84, 107, 287  
 food quality xxiii, 54, 232  
   entitlement failure 243–65  
 food requirements (SADC) 71, 71t  
 food security xxiii, 50, 78, 115, 132, 133, 148–50, 151, 161, 172, 174–9, 187–9, 270–1  
   approach (India) 3–7  
   ‘basic human right’ xxiii  
   current status (India) 7–11  
   definition xviii, 35, 58  
   HIV/AIDS and biodiversity 170–1  
   household level 10, 51–2, 177  
   macro 51, 52  
   national xviii, 79, 124  
   public distribution systems (India versus PRC) xix, 106–27  
   small island economies 37–8  
   UNU research project xxv(n2)  
   WFS definition 84, 277  
   women (South Asia) and 219–40  
 food security: impact of PDS 119–20  
   food security of general public 119–20  
   food security of poor people 120  
   national food security 119, 124–5(n1–2)  
 ‘food security for all’ strategy 29  
 food security indicators 145, 146–7t  
 food security in South Pacific xviii–xix, 35–57  
   food distribution system 50–1  
   household food security 51–2, 53t  
   macro food security 39–45  
   strategies to reduce food insecurity 52–5  
   trade in food products and export earnings 45–50  
 food self-sufficiency (SADC) 59–60  
 food shortages 14, 107, 108, 115, 116, 119, 124, 170  
 food stamps 94, 95, 97, 99, 101(n4), 296  
 food subsidies 23–5, 95, 98–9  
 food supply 38, 56, 120  
   SADC 61–2  
   stability in national system 58  
   world 268b  
 food systems (SADC) 59–60  
 food trade xviii, 60, 62, 65–6  
 food transfers 68, 92, 94, 95, 97, 99, 100  
 food utilization 83f, 84  
 food vulnerability 83f, 84  
 food-for-work (FFW) 18, 19, 21–2, 29, 31, 93, 97–8  
 foodgrain *see grain*  
 foreign direct investment (FDI) 28  
 foreign exchange 45, 53, 54, 194  
   restrictions 74  
 forest products 54, 151  
 forestry/forests xvi, 29, 45, 47, 170, 292, 299  
   deforestation 162  
 Four Freedoms speech (Roosevelt, 1941) 267

- Fourth Geneva Convention (1949)  
 'Articles 49, 55' 269
- Fowler, C. 166
- Fowler, F.J. 150
- Frankenberger, T.R. 83, 85, 89
- free market 113–14
- freedom 296–7, 304–5  
 negative versus positive (Sen) 286  
 Sahariya case study 290
- freedom from hunger 106, 266, 268b,  
 273, 274
- freedom of participation, expression,  
 association 301–2
- freedom of speech 302
- freedom from want 286  
 coined by Roosevelt (1941) 267  
 rights-based approach 287
- Frente Social* (Ethiopia) 100
- fresh food 26, 38–9
- fruit 5, 9, 38, 46t, 50, 54, 61, 65, 66,  
 170, 254  
 consumption (SADC, 1991–2001) 63t  
 exports 45  
 production (India, 1980–2004) 10t
- fungibility 95t
- futures trading 28
- G8 Summit (2005) 164
- Gaborone 66
- Garbero, A. xiv
- Gari, J.A. 171
- garments 45, 46t, 50
- gastric functions 261(n11)
- Gauteng (RSA) 66
- gender xviii, 92, 97, 187  
 HIV/AIDS and rural livelihoods  
 (Africa) xxi, 131–60  
 intra-household inequality 245  
 and sustainable development 163–6  
 UNU research project xxv(n2)
- gender bias xx–xxi, xxii, 163, 222,  
 223, 224  
 intra-household (access to food)  
 231–3
- Gender, Biodiversity and Local  
 Knowledge for Food Security  
 (LinKS): accomplishments 174–85,  
 189(n1–3)  
 beneficiaries 184, 184–5b  
 capacity-building 174, 175–6, 181,  
 189(n1–2)  
 communication 174, 178–9, 181,  
 189(n3)  
 data analysis 181  
 documentation 181, 189(n1)  
 implementation 179, 180  
 interdisciplinary approach 180  
 participation 181  
 participatory project management  
 181–2  
 participatory research 182–4  
 project challenges 179–82, 186  
 project concepts 179–81  
 research 174, 176–8, 181
- Gender, Biodiversity and Local  
 Knowledge for Food Security  
 (LinKS): FAO regional project xxi,  
 172–89  
 evolution 174  
 findings 185–8  
 focus 174  
 international context 173–4  
 ninth training workshop 189(n1)
- Gender, Biodiversity and Local  
 Knowledge for Food Security  
 (LinKS): overview (1997–2005)  
 188–9  
 beneficiaries 189  
 budget 188  
 development goal 188–9  
 immediate objectives 189  
 project countries 188  
 strategy 189  
 structure 189
- gender and farm mechanization choices  
 in Kenya xxi–xii, 194–218
- data collection and sampling  
 technique 199
- descriptive statistics:  
 results 200–3
- econometric analysis: results  
 207–15
- household characteristics 200
- institutional factors 200
- land tenure 203–6, 217(n1–3)
- methodology 197–200
- policy implications 215–16
- results 200–15
- study objectives 197
- technology-specific attributes  
 199–200

- gender and farm mechanization choices  
in Kenya – *continued*  
theoretical basis and derivation of  
multinomial logit model 198–9  
variables 199–200
- gender gaps 164
- gender, HIV/AIDS, and rural livelihoods:  
methodological lessons 150–3  
design issues 150–1, 155  
measurement/definitional issues  
151–2, 155, 156  
sampling/typology issues 152–3,  
155, 156, 157
- gender, HIV/AIDS, and rural livelihoods:  
methodologies 136–9  
qualitative 137  
quantitative 137–9
- gender, HIV/AIDS, and rural livelihoods:  
micro-level investigations in three  
African countries *xxi*, 131–60  
baseline surveys 136–7, 138, 152  
demographic characteristics  
135t, 154  
HIV/AIDS impacts at household level  
132–3  
methodological lessons 150–3,  
155–7, 157(n2–3)  
methodologies 136–9  
research findings 139–50, 157(n1)  
study sites (overview) 134–6  
suggestions for future work 153–7,  
157(n2–3)  
use of sustainable livelihoods  
framework 133–4
- gender, HIV/AIDS, and rural livelihoods:  
research findings 139–50, 157(n1)  
food security 148–50  
human capital 139–44  
natural capital 140–2t, 144–5  
physical and financial capital 145–8
- gender and hunger: links *xx–xxii*,  
129–240
- gender and farm mechanization in  
Kenya *xxi–xii*, 194–218
- gender, HIV/AIDS, and rural  
livelihoods *xxi*, 131–60
- gender, local knowledge, and  
agrobiodiversity *xxi*, 161–93
- women and food security in South  
Asia *xxii*, 219–40
- gender, local knowledge, and  
agrobiodiversity *xxi*, 161–93
- biodiversity: achievements and  
challenges ahead 161–3
- FAO and global challenge 171–2
- FAO project (LinKS) 172–89
- farmers' rights 168–9
- gender and sustainable development  
163–6
- HIV/AIDS, food security, and  
biodiversity 170–1
- linkages 171, 179–80, 183, 186, 187
- local knowledge 169–70
- local partnership 167–8
- gendered knowledge 171
- General Comment 12 (1999) 269–70,  
271, 274–5, 277, 284(n6–7), 305(n1)
- General Law (Sri Lanka) 225
- general public 123, 124  
food security 119–20
- generations 223  
differential access to nutrition 233–6
- genetic diversity 176, 177
- genetic resources 161, 162, 168, 169
- genetically modified (GM) grain 73,  
77–8, 79, 80(n8)
- Geneva Conventions (1949): Optional  
Protocols 269
- Gentilini, U. *xiv*
- Ghana 221t
- Gillespie, S. 234, 235
- Gillespie, S., et al. (2001), 170 191
- Haddad, L. 191
- Jackson, R. 191
- Gini coefficient 52, 53t
- girls 133, 163, 232, 248, 291  
adolescent 234, 315, 321  
education 96  
malnutrition (cause of death) 232
- Global Plan of Action 173
- globalization 220  
cereals (South Pacific) 43–5
- goats 136, 177
- GoI *see* Government of India
- goitre (iodine deficiency) 252, 255
- Goma, H.C., et al. (2001) 167, 191
- Nangendo, G. 191
- Rahim, K. 191
- Riley, J. 191
- Stein, A. 191
- Gonsalves, C. 308

- Goonatilake, S. 285
- governance 85f, 165, 276, 278, **318–19**,  
321, 325(n29–33)
- government agencies 12, 182
- government budgets 99, 122t, 121
- government grain stores (PRC) 109
- government of Delhi 316, 319,  
325(n33)
- Government of India (GoI) 12, 26,  
31(n5), 113, 115–16, 118–19, 309,  
310b, 315–19, 321, 322, 323(n4),  
324(n21), 325(n26)
- interim budget (June 2004) 312–13
- publications **33**
- government officials 303b, 304b
- government shops 113, 114, 116
- governments 11, 14, 30, 55, 72, 73–4,  
79, 90, 107, 164, 166, 184, 185b,  
187, 216, 257, 271, 274, 278, 280,  
281, 283, 284(n11), 287, 288, 291–6,  
308, 311
- food distribution system 115
- Fiji 38
- instrumental roles 292–3
- monitoring of food quality standards  
54
- no involvement in agricultural  
marketing (South Pacific) 50
- Sri Lanka 295
- usage 323(n4)
- grain/foodgrain xxiv, 5, 9, 11, 22, 30–1,  
219, 292, 310b, 316, 319, 325(n24)
- conversion costs 312
- distribution **19–20**
- global production 93
- production (India, 1949–2004) 7, 7t
- public distribution systems (India  
versus PRC) xix, **106–27**
- quantity distributed (China and India,  
1980–2002) 116f
- stocks 93
- subsidized **19–20**, 313, 321
- unified selling prices (PRC) 113
- grain consumption 294
- grain coupons 109, 113–14
- grain exports (India, 2003) 119
- grain imports 60, 66, 72, 74, 114, 119
- grain markets 76, 77, 115
- grain procurement 108–9
- grain trade 14
- public–private share (India) **13**
- gram (chickpea) 17t, 17
- grants 73, 185b
- grass pea (*Lathyrus sativus*) 246
- grass-roots organizations 318–19
- ‘gratuitous relief’ 293
- Green Revolution, Asian-type 188
- Grootboom Judgement 322,  
326(n38–9)
- Grootboom v. State of South Africa*  
(2000) 322
- Grosh, M. 101
- gross domestic product (GDP) 23, 134,  
135t, 108, 194, 222, 290
- agricultural 16
- gross margins (GM) 200
- gross national product (GNP) 37, 135t
- per capita 290, 290t
- groundnuts 12, 16, 17t, 61, 136, 246
- Grow More Food (GMF) campaign  
(India, 1943) 4
- growth impairment (human) 251
- growth [height] potential 234
- Guatemala 92
- Guha-Khasnobis, B. i, xiv, 100n
- Gujarat 323(n8)
- Gulfport (USA) 66
- Guo, M.Q. 114
- Gupta, C. 305n
- Gupta, J. 225
- Gussow, S. 285
- habitat conservation 161, 162
- Haddad, L. 83, 191, 234, 235
- haemoglobin 247, 259, 261(n14)
- hamara paisa, hamara hisaab* (slogan,  
‘our money, our account’) 302
- Hamid, S. 231, 239
- Hammett, A.L. 190
- handicrafts 45, 54, 292
- harrows 200, 211, 212t, 213, 213t,  
214t, 215
- harvesting/harvests 113, 229t
- Haryana 31(n3)
- health xxi, xxiii, 77, 171, 219–20, 231,  
233, 235, 247, 260, 267b, 268–9,  
277, 290, 304, 309b, 314
- health centres/clinics 88, 138, 302
- health check-ups 23
- health insurance 89
- health shocks 88

- healthcare 55, 84, 91, 92, 131, 232, 235  
 access 290  
 sexual and reproductive 164
- heat wave (Europe, 2003) 261(n10)
- Hemocue machine 259
- Hemrich, G. 191
- Hewavitharana, B. 297
- 'hidden hunger' 244–6, 260
- Hindu Succession Act (1956) 223, 224
- HIV/AIDS xv, xviii, xx–xxi, 59, 79, 91, 176, 186, 280  
 food security and biodiversity 170–1  
 gender and rural livelihoods (Africa) xxi, 131–60  
 infection rates 195  
 inter-generational consequences 132  
 prevalence rates 137–8  
 research 177–8  
 SADC 71, 72t, 72
- hoarding 74, 108
- Hoddinott, J. 101
- Hodge, J. xiv
- 'hoe farmers' 196
- home gardens 222, 231
- Honduras 93, 278
- Horn of Africa 249
- Hourihan, J. xiv
- household categories 138, 157
- household characteristics 200, 202t
- household chores 222
- household dependency ratio 143, 152
- household expenditure surveys (Fiji) 39
- household food security 6
- household food stocks 72
- household heads 138, 199, 200  
 female xxi, xxii, 139–49, 152, 154–5, 163, 177, 200–7, 209–16, 225, 226  
 male xxii, 139–50, 154–5, 163, 200–9, 211–16
- household income xxii, 195, 292
- household labour 143, 170
- household resource endowment 200
- household size 139, 140–2t, 151, 202t
- household socioeconomic characteristics  
 effect on choice of mechanization 207–11
- household surveys 235–6
- household types 137, 140–2t, 143, 152–3
- households 10, 133, 135, 156, 197, 198, 220, 294  
 age of household head 143  
 availability of labour for farm work 203–4  
 behaviour change 260  
 exposure to risk 100(n3)  
 food availability xx  
 food expenditure 98  
 food security 6–7  
 income and expenditure 151, 152, 157  
 incomes 'not necessarily pooled' 231  
 inequalities 6  
 low-income 296, 297  
 poor 86–7  
 rural 223, 227, 230  
 socioeconomic characteristics 215  
 technology attributes preferred by 211–13  
 urban 230  
 vulnerable (role of food-based safety nets) xx, 82–105
- housing 82, 225, 237, 268b, 326(n39)
- Howe, P. 261n
- human capital 55, 89, 99, 134, 139–44, 151
- human development 222, 287, 290, 290t
- human development index (HDI) 36t, 37, 134, 135t, 220
- human rights xviii, xxii, xxiii, 85f, 90, 98, 286, 301  
 right to food xxiii–xxiv, 266–85
- human rights approach 164
- Human Rights Law Network 308
- humanitarian crises: role of vitamins and minerals (entitlement failure from food quality perspective) xxiii, 243–65
- humanitarianism xxiii, 259, 260, 261(n5)
- Hungary 86
- hunger xvii, xxii, 10, 18, 19, 30, 55, 84, 91, 96, 106, 123, 131, 164, 165, 219, 237, 270b, 278, 280, 281, 283–4, 284(n11), 287, 291, 292, 304, 308, 318, 320, 321, 323  
 alleviation schemes (India) 309  
 causes and remedies xviii–xx  
 societal and political dimensions xx

- hunger as entitlement failure: right to food **xxii–xxv, 241–327**  
   right to food as fundamental human right **xxiii–xxiv, 266–85**  
   right to food in South Asia **xxiv, 287–307**  
   vitamins in humanitarian crises **xxiii, 243–65**  
   rights-based approach to development **xxiv, 308–27**
- hurricane Gilbert (1988) **253–4**  
 hurricanes **37**  
 husbands **225**  
 Hutton, J. **190**  
 hypertension **99**
- ICCPR **284(n2)**  
 ICDDR/B **256**  
 IDRC **229, 230, 239**  
 IFPRI **226, 232**  
 illness **140–2t, 151, 155**  
   ‘ill-health’ **220**  
   ‘sickness’ **133**  
 immune system **250, 251**  
 immunization **92**  
 import dependency **37**  
   cereals **43–5, 61**  
   SADC **61**  
   South Asia **288, 288t**  
 importation fees **75–6**  
 imports **5, 6, 45, 107**  
   cereals, roots, tubers (South Pacific) **41–2t**  
   food **54**  
   food products **48t, 49t**  
   foodgrains **4**  
   net **8**  
   rice and wheat **293**  
   South Pacific **39**  
 incentives **7, 26, 29, 52, 53, 55, 99**  
 income **124, 206, 220**  
   disposable **111**  
   real **244**  
   sources **139**  
 income per capita **51, 53t, 202t**  
 income disparity **51, 53t**  
 income monitoring mechanisms **121**  
 income paths **86, 90**  
 income profiles **87, 88f, 88, 90**  
 income tax **20, 280**  
 income transfers **122, 123, 124**
- indebtedness **299**  
 independently and identically distributed **198–9**  
 IID Gumbel distribution **199**  
 IID normal distribution **199**  
   random component **198**  
 India **xvi, xviii, 51, 87, 221t, 222, 227, 229–36, 238(n1), 277, 288, 289, 305**  
   cereal production and calorie availability (1970–2000) **288t**  
   distress and food **294**  
   economic reforms (1991–) **6**  
   eighth five-year plan (1992–97) **225**  
   ‘emerging foodgrain exporter’ **219**  
   famines (colonial era) **252**  
   female employment (1991–9) **223t**  
   human development and life expectancy **290, 290t**  
   partition (1947) **3, 4**  
   PDS (until early 1990s) **107–8, 109t**  
   PDS (since early 1990s) **111–13**  
   PDS ‘still needed’ **123**  
   post-independence era (1947–) **3, 4, 18, 26, 28, 107**  
   public distribution systems:  
     implications for food security **xix, 106–27**  
   right-to-food litigation **xxiv**  
   right to work **298–301**  
   share of population living in poverty (1999–2000) **289t**  
   unemployment (1993–2000) **298, 298t**  
   wage differentials (2001) **228, 228t**  
   *see also* Government of India  
 India: food policy **xix, 3–34**  
   agricultural price support policy **11–18**  
   agricultural strategy (mid-1960s onwards) **3**  
   direct food and other assistance programmes **18–25**  
   food marketing system **25–8**  
   food security: approach **3–7**  
   food security: current status **7–11**  
   four phases (1947–present) **4**  
   lessons **28–31**  
 India: Ministry of Food Processing Industry **27**  
 India: North West **224**

- India: Union Ministry of Consumer Affairs 15
- Indian Constitution 325(n37)  
Article 21 (right to life) 302, 321, 323(n1)
- Indian Council of Social Science Research (ICSSR, 1969–), xiii, xvi, xvii
- Indian States 22, 31(n3), 111, 118, 120, 123, 301, 310b, 311–15, 317, 323(n9, n12), 324(n13, n18)  
grain-surplus 15
- indigenous peoples 169
- individual/s 83f, 272  
capacity to become ‘authors’ of own development 272  
centrality 271
- Indo-Fijians 39, 52
- Indonesia xvii, 247–8, 255, 256
- Indrakant, S. 126
- industrial sector 223t, 227
- industrialization 120
- infamous Bengal famine (1943) 3–4
- infant mortality 221t, 234, 235
- infants xxiv, 31, 68, 220, 258  
beriberi 250
- inflation 108, 296
- informal sector 98, 227–8
- information 78, 177, 179, 189(n3), 210, 233, 257, 273, 282, 284(n11), 287, 318, 319  
access 204–5, 217(n2–3)  
nutritional 257–8  
public hearings (*jan sunvai*) 302–3b
- information exchange 186
- information gaps 76
- information-sharing 258–9
- information systems 95
- information technology 28
- infrastructure 5, 38, 54, 55, 59, 66, 68, 76, 79, 88, 92, 164  
food marketing 9, 31(n2)  
logistical bottlenecks 75  
marketing 27–8, 32(n6)  
rural xix, 52, 53, 55, 280, 302
- infrastructure index 200, 207–12t, 208, 210
- inheritance 133, 137, 164, 203, 211  
Christianity 224–5  
matrilineal/patrilineal 224  
Hindu and Islamic systems 223–4  
inter-generational malnutrition 233–6
- innovation 195
- input prices 12
- input subsidies 14
- input-output price parity 12
- inputs 5, 11, 29, 53, 59, 68, 73, 89, 132, 217(n2)  
agricultural 40
- Institute of Development Studies (IDS–Jaipur) xiii, xiv, 90, 124n, 299
- institutions 29, 78, 172, 175, 179, 184, 185, 188–9, 282, 286, 301  
community-based 134  
restructuring 68  
rural 132
- institutions of higher learning 175, 176
- insurance 87, 88f, 88, 89, 97
- insurgency 287, 288, 295–6
- integrated child development scheme (ICDS, India) 21, 235, 309b, 310, 311, 314–15, 319 325(n22–3)
- integrated rural development programme (IRDP) 22–3
- intellectual property rights 168, 178
- intensive agriculture area programme (IAAP) 4
- intensive agriculture district programme (IADP) 4
- interest rates 299
- intergovernmental organization 284(n11)
- Intergovernmental Working Group on Right to Food Guidelines (IGWG–RTFGs, 2002–) 282  
establishment 275, 284(n13)  
structure and sessions 276
- internally displaced people 97, 251
- ‘International Alliance against Hunger’ (declaration, 2002) 275
- International Covenant on Economic, Social, and Cultural Rights (ICESCR, UN, 1966) 82–3, 106, 266, 267, 272, 276, 277 284(n2), 305(n1)  
Article 2.1 271b  
Article 11 267, 268b  
Article 11.2 271  
ratification 279
- International Federation of Social Sciences Organisation (IFSSO), xvi

- International Fund for Agricultural Development (IFAD) 226, 236, 276, 283
- International Humanitarian Law (IHL) 269
- International Jacques Maritain Institute 274
- International Labour Organization (ILO) 90
- international law xxiii, 266, 267, 276, 305(n1)
- ius cogens* norms 267, 284(n1)
- International Monetary Fund (IMF) 68, 73, 74, 75t
- international organizations 266
- role 272–3, 284(n8–9)
- International Plant Genetic Resources Institute (IPGRI) 173
- International Social Science Council (ISSC) xvi
- International Technical Conference on Plant Genetic Resources for Food and Agriculture (Leipzig, 1996) 173
- International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA, 2001) xxi, 166, 169, 171, 173, 187–8
- implementation 166
- multilateral system 166
- interviews 137, 138–9, 144, 151, 156, 157(n3), 199
- intestate succession 225
- investment 29, 52, 55, 72, 78, 194, 280
- private 27, 30
- public 228
- iodine deficiency (goitre) 252
- iodized oil 255
- IQ 235
- Ireland: Great Famine (late 1840s), 246, 249, 251, 253
- iron 255, 256, 261(n12)
- iron absorption, hindered 247
- iron deficiency 245, 248, 251, 254, 261(n7, n14)
- malaria 251–2, 261(n7)
- iron tablets 21
- irrigation 6, 8, 18, 52, 53, 55, 68, 88, 292
- canal water 15, 16t, 16, 18, 31(n4)
- Islam 223–4
- ius cogens* norms 267, 284(n1)
- Iyer, K. 325(n35)
- Jackson, R. 191
- Jaffna 225
- Jaipur xiii, xiv, 124n, 299
- Jaipur: First Workshop of ICSSR-UNU-WIDER (2005) 100n, 124n
- Jalan, J. 86
- Jamaica 253–4
- Jammu and Kashmir 323(n7)
- Janawad 303b
- Japan xvi, 121
- Java 247–8
- Jawahar Rozgar Yojana* (JRY) xi, 21, 300
- Jayne, T.S., et al. (2004) 170, 191
- Hemrich, G. 191
- Pingali, P. 191
- Villarreal, M. 191
- Jha, S. 119
- Jharkhand 291, 325(n24)
- Jiao, K.P. 114
- Joint Integrated Safety Net Programme (Malawi) xx, 100
- judges 278
- judicial independence 287, 301
- judicial intervention 288
- judiciary 304, 321, 325(n35)
- class bias 322
- jute 6
- Kabeer, N. 232
- Kakazu, H. 43
- Kaloumaria, A. 56
- Kameri-Mbote, P. 166
- Kanbur, R. i
- Kandy (Sri Lanka) 230
- Kandyan Law (Sri Lanka) 225
- Karimnagar District (Andhra Pradesh) 229
- Karnataka 224, 324(n13)
- Karugia, J.T. xiv
- Katkari tribes 324(n21)
- Kegalle (Sri Lanka) 230
- Kengni, E., et al. (2004) 170, 191
- Mbofung, C.M.F. 191
- Tchouanguiep, M.F. 191
- Tchoundjeu, Z. 191

- Kenya xxi, 65, 169, 185, 221t  
 gender and farm mechanization  
 choices **xxi–xii, 194–218**
- Kenya: Ministry of Agriculture 205, 216  
 Kenya: Ministry of Livestock 205  
 Kenya Agricultural Productivity Project  
 (KAPP) 205, 217(n3)  
 Kenya Agricultural Research Institute  
 (Kakamega) xv
- Kerala 224, 231, 323(n8)  
 knowledge systems 176
- Kohistan District (Afghanistan) 249
- Kosovo 245
- Kozel, V. 119
- Kruskal–Wallis test 142n, 144
- Kumbalgarh block 303b
- Kurosaki, T. 86
- Kydd, J. 222
- labour 29, 166  
 agricultural 6, 23, 25, 29, 131,  
 222, 292  
 casual 228, 229, 300, 311  
 characteristics (South Pacific) 51, 53t  
 farm work **203–4**  
 female 222, 223t  
 loss (caused by HIV/AIDS) 72  
 low-skilled 59  
 migrant 72  
 part-time/temporary, 228  
 rural 300, 302  
 unskilled 22  
 waged 227
- labour costs 170
- labour gaps 143
- labour losses 132, 144  
 HIV/AIDS 131
- labour shortages 40, 143, 154
- labour supply bottlenecks 196
- Laird, S.A. 167
- Lake Victoria 195
- Lake Victoria Crescent 134, 135
- Lakes Depression 136
- Lambrou, Y. xv, 172
- land xxii, 29, 38, 133, 144, 163, 177,  
 196, 199–203, 215, 299  
 agricultural 52, 225  
 agricultural tenancy 223  
 ancestral 203  
 arable 195, 223, 225–6  
 distress sales 151  
 international agreements 166  
 security of tenure 223  
 land degradation 162  
 land leases 40  
 land reform 4, 60, 61, 225  
 land registration 88  
 land rights 226, 237  
 land size 207–10t, 209, 211, 212t, 216  
 land tenure 87, 172, **203–6**, 217(n1–3)  
 access to credit and information  
 204–5, 217(n1–3)  
 availability of labour for farm work  
 203–4  
 mechanization methods 206  
 landlessness 4, 25  
 landlocked countries 75  
 landscape management 167  
 landslides 37  
 language 258  
 Lata, N. 56  
 Latin America xxi, 94, 172, 187, 230  
 Latin America and Caribbean 221t, 236  
 Laub, R. xv
- law 26, 27, 31(n5), 300–1  
 right-to-food 282  
 ‘soft law’ 267
- lawyers 278, 308
- learning 219
- least developed countries (LDCs) 58,  
 62, 66, 74, 78
- legal systems 246
- legal rights training 256
- legislation 168, 278, 281, 282  
 draft 26  
 plant variety protection 168
- legislature 321
- legumes 68, 80(n3)
- Lesotho 58, 60–2, 69f, 71t, 76, 78,  
 97, 221t  
 cereal tariffs (2003) 67t  
 CFF loans and cereal import  
 requirements 75t  
 food consumption (1991–2001)  
 63–4t  
 HIV/AIDS (2001) 72t  
 state of emergency (2002) 71
- lessons  
 gender, local knowledge, and  
 agrobiodiversity **161–93**  
 Indian food policy (since 1947)  
**28–31**

- methodological (gender, HIV/AIDS, and rural livelihoods) 150–3  
 public distribution systems (India versus PRC) 120–4  
 rights-based approach to development (India) 308–27  
 SADC food crisis (2001–3) 70–6, 79, 80(n4)  
 life expectancy xxi, 36t, 37, 134, 135t, 194–5, 220, 221t, 288, 295–6, 304  
 South Asia 290, 290t  
 LinKS, *see* 'Gender, Biodiversity and Local Knowledge for Food Security'  
 literacy xxi, 194, 236, 237, 256  
   adult rates 221t  
   female 235  
   'illiteracy' 220  
 literature  
   environment and sustainable livelihood 166  
   HIV/AIDS xxi, 132  
   HIV/AIDS (impacts on food security) 137  
   social protection strategies 90  
 litigation xxiv, 310, 318, 320, 322, 323, 325(n36), 326(n39)  
 litigation, right to food, and rights-based approach 321–2, 325(n35)  
 Liu, X.A. 127  
 livelihood 220, 272, 292, 308  
   rural xx–xxi  
 livelihood capital groups 151–2  
 livelihood entitlements 29, 302  
 livelihood linkages 155–6  
 livelihood opportunities 237  
 livelihood options/choices 86  
   limited (South Asia) 226–8  
 livelihood paths 87  
 livelihood strategies 134, 137, 148, 151  
 Livelihoods and Social Protection Public Investment Programme (Afghanistan) xx, 100  
 livestock xxii, 5, 9, 45, 136, 139, 145, 177, 187, 195, 201, 202t, 206, 215, 237, 306(n5)  
   distress sales 151  
   genetic resources 168  
   livelihood option 137  
   livestock production xxii  
   'living on edge' 85  
   living standards 82, 83, 90, 100, 114, 267b, 268b, 273  
   local governments 115, 116  
   local knowledge 169–70  
     gender and agrobiodiversity xxi, 161–93  
     gender-specific 177  
     national trust fund (Tanzania) 182, 188  
   local partnership 167–8  
   Lokshin, M. 86  
   longitudinal studies 155, 156  
   Lorenz Curve 52  
   Louwaars, N. 169–70  
   low-income groups 115  
   Luangwa Valley 136  
   Lusaka 77  
  
 macro food security 7–10, 39–45  
   food and agricultural production trends 39–43  
   import dependence and degree of globalization in cereals 43–5  
 macroeconomic factors xxii–xxiii  
 Madagascar 252  
 Madhya Pradesh 291, 320, 324(n21)  
 magnesium 253, 255  
 Maharashtra 224, 299, 324(n21)  
 Maharashtra Employment Guarantee Programme 97–8  
 Maharatna, A. 252  
 Mahila Mandals 319  
 Maier, J. 168  
 maize xxi, 12, 62, 65, 68, 71, 73, 75n, 79, 80(n3, n8), 136, 195, 200, 217(n2), 246–7, 250  
   consumption (SADC, 1991–2001) 63t  
   crop failure 59  
   genetically modified 77–8, 80(n8)  
   tariffs (SADC, 2003) 67t, 67  
 maize markets 60, 76–8, 80(n5–8)  
 maize price, 76–7  
 maize trade 61  
   unrecorded volume 65  
 maize-bean 202t  
 Makgetla, N. 76  
 Malabar inhabitants of Jaffna 225  
 malaria 87, 248, 250–1, 253, 261(n2), 280  
   iron deficiency 251–2, 261(n7)

- Malawi xx, 58, 60–79, 100, 169,  
221t, 250  
cereal tariffs (2003) 67t  
CFF loans and cereal import  
requirements 75t  
food consumption (1991–2001)  
63–4t  
HIV/AIDS (2001) 72t  
state of emergency (2002) 71
- Maldives 219, 221t, 222, 227, 233, 234  
female employment (1991–9) 223t  
'least disparity' in wage structure  
228, 228t
- Malinzanga village 177
- malnutrition xvii, xxiii, 11, 19, 30,  
31, 55, 219, 220, 221t, 222, 237,  
248, 253, 256, 258, 260, 261(n2),  
280, 281, 283–4, 291, 296, 318,  
320, 321  
'both medical and social disorder'  
(WHO) 245  
early childhood 314–15  
gender-specific 232  
household level 18  
maternal 99
- Manyengo, J.U. xv
- Manzini region 178
- Maputo 66, 77
- Marchisio, S. 272
- marital status xxii, 200–6, 208, 209t,  
212t, 213–16, 225
- market access 50, 164, 260
- market failure 97
- market fluctuations 115, 123
- market integration 60, 79
- market liberalization 60
- market prices 111, 114, 118, 120  
stabilization 19
- market structure 25–6
- market yards 9, 25, 26, 27, 28
- marketing xix, 4, 6, 7, 14, 30, 50, 59,  
61, 306(n5)  
direct 28  
grain 110, 118  
*see also* food marketing
- marketing boards, state  
agricultural 28
- marketing channels 25–6
- marketing infrastructure 9, 27–8,  
31(n2), 32(n6)
- marketing practices, regulation 5
- marketing systems, crop and  
input 170
- markets xxiii, 54, 91, 94, 95t, 114, 246,  
247, 260  
deregulation 60  
global/world 55, 59  
local 77  
private 107, 115, 293  
rural 165  
short-term 14  
urban 77
- Marrakech Decision 70
- marriage 96, 133, 224, 225, 257
- Masai 176, 177, 187
- Maseru 66
- maternity benefit 23, 321
- maternal mortality 234, 251
- maternal mortality rates (MMRs)  
221t, 233
- maternal undernourishment 222,  
233, 234
- matrilineal systems 224
- Mauritania 249
- Mauritius 58, 60, 61, 62, 65, 67, 69f  
cereal tariffs (2003) 67t  
CFF loans and cereal import  
requirements 75t  
food consumption (1991–2001)  
63–4t
- Maxwell, S. 83, 89, 103
- Mazdoor Kisan Shakti Sangathan*  
(MKSS) 302
- Mbarali district 177
- Mbofung, C.M.F. 191
- McKenzie, E., et al. (2005) 37, 56  
Kaloumaria, A. 56  
Prasad, B. 56
- McMichael, A.J. 171
- meals per day 146–7t, 149–50, 155
- measles 250–1, 255, 261(n2)
- measurement/definitional issues  
151–2, 155
- meat 9, 10, 38, 50, 61–2, 65, 66, 136,  
232, 247, 248  
consumption (SADC, 1991–2001) 64t  
exports 45  
production (India, 1980–2004) 10t
- mechanization methods 206
- media 303b, 304b, 311, 312
- Meghalaya 224

- men 163, 180, 187, 195, 231, 232  
 chronic energy deficiency 11  
 inheritance rights 223–4  
 ‘males’ 11, 37  
 vitamin A deficiency 261(n4)
- meningocele 253
- mental health 233
- merry-go-round credit groups 204, 205, 217(n1)
- Metz, M. 58
- Mexico xx, 100
- microfinance 219–20
- micronutrient deficiencies xxiii, 243, 255, 261(n3)
- micronutrient deficiencies: meaning in times of crisis 248–54, 261(n2–8)
- folate deficiency (neural tube defects) 253–4
- iodine deficiency (goitre) 252
- iron and malaria 251–2, 261(n7)
- riboflavin deficiency (angular stomatitis) 250
- vitamin A deficiency 250–1, 261(n4–6)
- vitamin B1 deficiency (beriberi) 249–50
- vitamin B3 deficiency (pellagra) 250
- vitamin C deficiency (scurvy) 249
- zinc deficiency 253, 261(n8)
- micronutrients 31, 95t, 96, 178, 246, 247, 248, 253, 254–9, 261(n9–15)
- empowerment with knowledge about 256–9, 261(n13–15)
- targeted transfer 254–6, 261(n11–12)
- midday meals (MDM) programme xxiv, 21, 113, 292, 309b, 310, 311–13, 319 323–4(n7–15), 325(n33)
- Midnapur district 225
- migration 97, 177, 295, 298  
 from Rajasthan 295t  
 rural–urban 37, 51, 53t, 55, 163, 203, 226, 299
- milk 9–10, 38, 62, 66, 86, 98–9, 232, 256, 291  
 consumption (SADC, 1991–2001) 64t  
 production (India, 1980–2004) 10t
- Millennium Development Goals (MDGs, UN) xvii, xviii, xxiv, xxv, 165, 167, 219, 281, 283
- environmental sustainability 162
- hunger and poverty 131  
   special summit (2005) 164
- millet 62, 63t, 135, 136
- milling 53, 60, 67, 78
- mills 74, 256
- minerals *see* vitamins
- minimum support price (MSPs) 14, 19, 119
- minimum wage 22, 98, 230, 302, 300, 320
- mining 45, 136
- ministries 180, 185b, 318
- mirchi chutney* 291
- mobilization, public hearings (*jan sunvai*) 304b
- Mokyr, J. 246
- Mondal, S.K. 232
- Moneragala (Sri Lanka) 230
- moneylenders 299
- monitoring xviii, 71, 92, 282
- monopolies 115
- monsoon 238(n1), 291
- Monterrey consensus (2002) 277
- Monze District (Zambia) 136
- Moore, G. 273
- morbidity 72, 91, 132, 144, 153, 156, 243, 246, 248, 252, 287, 292, 293, 296
- Morocco 257
- mortality 72, 144, 154, 156, 234, 243, 246–9, 253, 256  
 children under five years 290, 290t  
 foetal 252  
 male–female comparisons 235  
 neonatal 235, 252  
 premature 287
- mountainous regions/hilly areas 9, 249
- Mozambique 58, 60–7, 69, 69f, 70, 71t, 74–7, 174, 177, 179, 186, 188
- cereal tariffs (2003) 67t
- CFF loans and cereal import requirements 75t
- civil war 65
- food consumption (1991–2001) 63–4t  
 HIV/AIDS (2001) 72t
- multinomial logit model 198–9, 214t
- multinomial probit model 199
- multivitamins 255
- Mushala, H.M. 72

- Muslim Law (Sri Lanka) 225  
 Muslim Personal Law *Shariat*  
 (Application) Act (India, 1937)  
 223–4  
 mustard, 12, 16, 17t
- Nacala (Mozambique) 75  
 Nairobi: World Agroforestry Centre  
 (ICRAF) xv
- Namibia xxi, 58, 60–2, 68, 69f, 70, 76  
 cereal tariffs (2003) 67t  
 CFF loans and cereal import  
 requirements 75t  
 demographic characteristics 135t  
 food consumption (1991–2001)  
 63–4t  
 gender, HIV/AIDS, and rural  
 livelihoods: micro-level 131–60  
 human capital and natural capital  
 140t  
 physical/financial capital and food  
 security indicators 146t
- Nangendo, G. 191
- National Agricultural Co-operative  
 Marketing Federation (NAFED)  
 12, 28
- National Agricultural and Livestock  
 Extension Programme (NALEP,  
 Kenya) 205
- national agricultural research system  
 (NARS) 5
- National Co-operative Development  
 Corporation 28
- National Disasters Management Office  
 (NDMO, Fiji) 38
- National Employment Guarantee Act  
 xxiv
- national family benefit scheme (India)  
 309–10b
- National Family Health Survey (1992–3)  
 235, 238(n2)
- National Federation of Indian Women  
 (NFIW) 324(n21)
- National Food and Nutrition Committee  
 (Fiji) 55
- National Horticulture Board  
 (India) 27
- National Institute of Urban  
 Affairs 230
- National Maize Corporation  
 (Swaziland) 76
- national maternity benefit scheme  
 (India) 310b
- National Nutritional Monitoring Bureau  
 (NNMB) 11
- national old age pension scheme (India)  
 310b
- national programme of nutritional  
 support to primary education  
 (NPNSPE) 21
- National Rural Employment Guarantee  
 Act (India, 2005) 22, 300
- national rural employment programme  
 (NREP) 21
- National Sample Survey Organization  
 (NSSO, India) 9, 289n
- natural capital 89, 134, 140–2t,  
 144–5, 151
- natural disasters xix, 6, 19, 22, 23, 54,  
 56, 96–7, 245, 268b, 270b, 272,  
 277, 293  
 impact on South Pacific 37–8
- natural resources 163, 170, 171, 172  
 endowments 37  
 management 164, 165, 167, 169,  
 173, 184
- Nazli, H. 231
- Nepal 221t, 233, 234, 227, 249,  
 250, 251  
 cereal production and calorie  
 availability (1970–2000) 288t  
 female employment (1991–9) 223t  
 human development and life  
 expectancy 290t  
 inheritance 225  
 ‘least disparity’ in wage structure  
 228, 228t
- net-food-importing developing countries  
 (NFIDCs) 58
- neural tube defects (NTDs) 253–4
- New Delhi xv
- New Zealand 36, 39, 40n, 50
- newspapers 178
- niacin deficiency (pellagra) 249, 250
- night blindness 251
- Nile River 135
- Niue 37–8
- non-cereal foods 68, 69, 69f, 70, 123
- non-governmental organizations  
 (NGOs) xxii, 19, 20, 22, 38, 74, 79,  
 94, 174–6, 179, 180, 184, 184–5b,

- 226, 256, 258, 272, 274, 276,  
284(n11), 300, 301
- non-profit-making organizations 179
- non-sampling error 153
- non-staple foods 247
- non-tariff barriers (NTBs) 62, 66, 79
- Noragric 181
- North Africa 70
- North Korea 252
- Norton, A. 100(n3)
- Norway: Royal Ministry of Foreign  
Affairs xiii
- nutrients 260, 270b
- nutrition xvi, xxiv, 5–6, 21, 55, 91, 95t,  
97, 113, 131, 165, 170, 219, 220,  
222, 230, 231, 244, 246, 247, 257,  
268b, 273, 277, 293, 309b, 314, 315  
differential access (inter-generational  
consequences) 233–6
- nutritional education 96
- nutritional security 9
- nutritional status 11, 119, 148, 293
- nutritional surveys 259, 261(n15)
- Nuwara Eliya (Sri Lanka) 230
- Nyanza Province (Kenya) 199
- Oceania 40t
- O'Donnell, M. 134
- off-farm employment  
on-farm production linkages 152
- off-farm income 200, 207–12t, 208,  
210–11
- Office of High Commissioner for  
Human Rights (OHCHR) 283
- 'official poverty state' (Hewavitharana)  
297
- Ó'Gráda, C. 246
- Ohangwena Region 134, 135  
'poorest region in Namibia' 137
- oil 50
- oil crops 63t
- oilseeds 5, 12, 30  
*see also* edible oils
- old age pensions 23, 113
- olive oil 98
- Oluoch-Kosura, W. xv
- Omawale, J. 285
- open market 116, 117, 122
- 'Operation *Barga*' (West Bengal) 225
- Organisation for Economic Co-operation  
and Development (OECD) xvi, 94
- orphans 71, 72t, 132–4, 135t, 139,  
141–2t, 143–4, 146–7t, 150–6, 177  
definition 138
- Osmani, S.R. 235
- overcharging 316, 325(n30)
- 'ownership rights' (Sen) 245
- Oxfam 94, 164
- packaging 9, 91
- Pakistan xvii, 86, 87, 221t, 222, 224,  
227, 231, 232, 233, 236  
cereal production and calorie  
availability (1970–2000) 288t  
female employment (1991–9) 223t  
human development and life  
expectancy 290, 290t  
inequity in wage structure  
'particularly marked' 228, 228t  
rural 230  
trends in food poverty incidence  
(1986–99) 288–9, 289t
- Pakistan Institute of Development  
Economics (PIDE) 231
- Pakistan: National Human Development  
Report (PNHDR) 230
- Pan-African Programme on Land and  
Resource Rights 166
- panchayati raj* institutions 22, 28, 319
- panchayats* [village councils] 20, 301,  
303b, 319  
*gram panchayat* 316  
*gram sabha* [ward committee level]  
303b, 319
- panic buying 113–14
- PANOS [Gender Based Violence  
Prevention Network, Ethiopia] 222
- Papua New Guinea xxv(n1), 35–7,  
39, 252  
cereals (import-dependency) 43, 44t  
cereals, roots, tubers (production,  
imports, exports, 1991–2002)  
41–2t  
degree of globalization 44t, 45  
dependence on foreign trade  
45, 46t  
dependency of population on  
agriculture 51, 53t  
food and agricultural production  
indices (1991–2002) 40t  
income per capita 53t

- Papua New Guinea – *continued*  
 population growth 52  
 poverty 53t  
 rice (import-dependency) 44t  
 share of agriculture and food in trade  
 47, 49t  
 trade (food products) 47, 48t  
 wheat and flour (import-dependency)  
 44t
- paralysis (post-famine) 246, 249  
 parents 257  
 Paris xvi  
 Parker, B. 119  
 Parliament (India) 22  
 participation  
 means of **302–4b**  
 participatory action research (PAR) 183  
 participatory project management  
 181–2  
 participatory research 167, **182–4**, 185,  
 185b, 186  
 participatory rural appraisal (PRA)  
 137, 199  
 research phase 216–17  
 paternalism 297  
 pathogens 253  
 Patnaik, U. 30, 289n  
 patriarchy 223  
 patronage 300–1, 304  
 peace 165, 166  
 pellagra 249, **250**, 255  
 Pender, J. 87  
 pensions/pensioners 113, 309b,  
 310b, 321  
 people living with HIV/AIDS (PLWHA)  
 133, 138, 139, 141–2t, 143, 147t,  
 150, 153, 154  
 People's Union for Civil Liberties (PUCL)  
 xxiv, 308  
*Peoples' Union of Civil Liberties v.*  
*Government of India* 305(n2)  
 Perera, N. 127  
 petitions 308–9  
*pewa* property (Nepal) 225  
 Philippines 26, 217(n2)  
 physical capital 89, 134, **145–8**, **152**  
 Piana, G. 172  
 Pingali, P. 191  
 PL480 (USA) 119, 124(n1)  
 plant breeders: rights 168  
 plant genetic resources 171, 173,  
 186, 188  
 plant species  
 three main calorie/protein sources  
 161  
 twelve main food sources 161  
 plant variety protection (PVP) 168  
 plants **xxi**  
 ploughs/ploughing 202t, 206, 229t  
 pneumonia 138, **253**  
 police abuse 302  
 policy instruments **xix–xx**, 4–5, 5–6  
 policy-makers 121, 178, 184, 184b  
 anticipated beneficiaries of LinKS  
 project **185b**  
 policy-making **xxiii**, 90, 325(n35)  
 political economy **xxii**, 245  
 political freedom **294–6**  
 political participation 164  
 political stability (South Asia) **288–96**  
 political will 273, 275  
 Polonnaruwa (Sri Lanka) 230  
 poor people 30, 31, 98, 111, 114, 122,  
 123, 226, 256–7, 279, 289, 293  
 empowerment 280, 281, 304  
 food security **120**  
 income 165  
 urban 118  
 poorest of poor 20, 297, 299,  
 305(n4–5), 319, 324(n20)  
 population  
 rural 53t, 313  
 South Pacific 35–7, 53t  
 working-age 91  
 population density 135  
 population growth 7, 10, 51–2, 55  
 ports 75, 76  
 post-conflict recovery programmes 70  
 potassium 255, 261(n11)  
 poultry 45, 66  
 poverty **xvii**, **xx**, 19, 31, 83, 84, 87, 89,  
 100, 113, 119, 124, 131, 133, 164,  
 165, 167, 220, 226, 227, 287, 295  
 extent (India, 1999–2000) 289t  
 feminization 228  
 headcount indicator 85  
 incidence in India (1977–2007) 11t  
 relative 297  
 rural **xvii**, 10, 11t, 22, 29, 54  
 Sahariya case study **290–2**,  
 305(n2–4)

- South Pacific 51, 53t
- urban 10, 11t, 55
- poverty-alleviation 54, 55, 171, 219
- poverty line xxi, 3, 10, 23, 88, 94, 288, 317
  - one US dollar per day 52, 53t, 221t
- poverty-reduction 58, 74, 82, 91, 154, 166, 188, 195, 280, 281, 298
- Poverty-Reduction Strategy Papers (PRSPs) 68
- poverty traps 86
- power [energy] 18
- power [political] 85f, 169
- power output 212–14t, 213, 216
- Pradhan Mantri Rozgar Yojana*, 300
- Prasad, B. 56
- preferential price agreements 50
- pregnancy 234, 251, 252, 309–10b
  - agricultural work (energy demands) during 234
- price ceilings 114
- price controls xix, 77, 79
- price fluctuations 78
  - agricultural 58
- price stabilization 117, 257, 258
- price surges 120
- price spikes/volatility 83, 88
- prices xxiii, 25, 30, 107, 246, 256–7, 260
  - agricultural products 51
  - foodgrain 4, 107, 110, 116
  - international 70
  - PDSs 108
  - retail 9
  - world market xviii
- primary commodities 45
- primary health care xx, 31
- primary schools 21, 309b
- Pritchett, L.H. 145
- private entrepreneurs 26, 78
- private sector xix, xxiii, 14, 26–8, 30, 73, 74, 78, 79, 117–18
- private trade/traders 13, 13t, 25, 117
- privatization 88
- production 29
  - cereals, roots, tubers (South Pacific) 41–2t
  - domestic 60
- production costs 12, 15
  - production, distribution of food, political stability 288–96
  - availability of food 288–9
  - distress and food 292–4, 295t
  - ethnic unrest, violation of political freedom, and food 294–6
  - human development and life expectancy 290, 290t
  - Sahariya case study 290–2, 305(n2–4)
- Productive Safety Net Programme (Ethiopia) xx, 100
- productivity 3, 60, 68, 73, 89, 163, 170, 188, 194–6, 205
  - agricultural xviii, xxii, 52, 55, 59, 161
  - land 43
- profitability 199–200, 212t, 213, 214t, 215, 216
- profiteering 76
- profits 74, 108, 287
- PROGRESA/Oportunidades (Mexico) xx, 100
- project workshop (March 2005) xiii
- property 85f, 237
- property rights 29, 172
- protectionism 59, 67
- protein deficiency 291
- proteins xxi, 21, 38, 55, 62, 243, 244, 246–7, 255, 270b
  - main sources (three plants) 161
- provinces (PRC) 109
- psychomotor development 251
- public action in emergencies 254–9
  - empowerment with knowledge about micronutrients 256–9, 261(n13–15)
  - targeted transfer of micronutrients 254–6, 261(n11–12)
- public agencies 13, 13t, 25
- public distribution system (PDS) xix, xxiv, 9, 13, 14, 19, 26, 29, 289, 292, 294, 311
  - India 293, 316–17, 320, 325(n24–7)
  - interim application (mid-2005) 325(n25)
  - objectives 19
  - PDS dealers 325(n27)
  - PDS outlet 24
- public distribution systems (PDS) (China versus India) xix, 106–27
  - comparison 115–19
  - impact on food security 119–20

- public distribution systems (PDS) (China versus India) – *continued*  
 inception and evolution 107–15  
 policy implications 120–4  
 pricing 108  
 wheat and rice: costs and issue prices (India, 1991–2003) 112t
- public distribution systems (China and India): comparison 115–19  
 buffer stocks (India, 1997–2005) 117t  
 costs and policy responses 118–19  
 coverage and targeting 118–19  
 impact on poor 119  
 objectives 115  
 operation and performance 116–17  
 quantity of foodgrains distributed (1980–2002) 116f  
 system 115–16  
 use of private sector 117–18
- public distribution systems: inception and evolution 107–15  
 China (until early 1990s) 108–10  
 China (since early 1990s) 113–15  
 India (until early 1990s) 107–8, 109t  
 India (since early 1990s) 111–13
- public distribution systems: policy implications 120–4  
 buffer stock controlled by central government ‘essential’ 123–4  
 food subsidies ‘cost-effective way to help poor’ 120–1, 122t  
 level of economic development and food subsidies 121–2  
 ‘still needed’ (India) 123
- public food stocks 293
- public health 60, 171, 254, 260, 280, 295
- public hearings (*jan sunvai*) 302, 302–4b
- public investment 11–12  
 for research 168  
 ‘Public Law 480’ 4  
 public–private partnerships 165  
 public records 302b  
 public sector 27, 78, 170, 280  
 public sector organizations 28  
 public transfers 90, 100–1(n2–3)  
 public works programmes 68, 91, 92–3, 95, 97–8, 299–300, 319
- pulses 12, 291  
 consumption (SADC, 1991–2001) 63t  
 production (India, 1949–2004) 7t
- Punjab, rural (Pakistan) 230  
 Punjab state (India) 31(n3), 232
- purchasing power xx, xxiii, 28, 52, 54, 92, 98, 99, 223, 244, 246, 247, 257, 260
- Puttalai (Sri Lanka) 230
- qualitative data 186  
 qualitative methods 137, 150–1, 153, 156, 157  
 quantitative methods 137–9, 150–1, 153, 156
- quarantine 50  
 Quarry, W. 167
- questionnaires 136, 138–9, 156, 157(n3), 199, 317  
 design lessons 151
- quotas 114
- race 95  
 Radhakrishna, R. 11  
 Radhakrishna, R., et al. (1997) 119, 120, 126  
 Indrakant, S. 126  
 Ravi, C. 126  
 Subbarao, K. 126
- Rae, I. xv  
 Rahim, K. 191  
 Rahman, A. 232, 233
- railways 27, 325(n24)
- rainfall 8, 136, 195
- Rajasthan 97, 291, 303b, 308, 310, 311, 317, 318, 320, 324(n13)  
 case study 294, 295t  
 freedom 301–2  
*see also* Jaipur
- Ramachandran, N. xv, 228, 231, 232, 234
- Ramaswami, B. 119, 120  
 Ramirez, R. 167
- Rand (currency) 76
- random sampling 153
- random utility models (RUM) 198
- rationing 4, 107, 109–11, 114, 115, 256, 296, 302, 316
- Ravallion, M. 82, 86, 293

- Ravi, C. 11, 126
- Red Cross 38
- refugees 97, 249, 250, 261(n2), 295
- regional bureau of health (RBH) 258
- regulation
- food marketing (India) 26–7, 31(n5)
- religion 281
- remittances 72, 151, 201, 211
- research 29, 156, 167–8, 174
- animal production and genetic diversity 177
  - gender-sensitive 174, 175
  - LinKS project 174, 176–8
  - on-farm 168
  - public sector 169
  - relation between HIV/AIDS and local knowledge systems 177–8
  - traditional seed systems 177
- research code of ethics 167
- research and development 167, 195
- research institutions 180
- researchers 176, 178, 181, 186–9
- anticipated beneficiaries of LinKS project 184–5b
- Reserve Bank of Fiji 54
- resettlement schemes 225
- resource base, narrowness 45
- resource endowment 210
- resource ownership and control 201
- resource rights 166
- respiratory diseases 235, 248, 250, 261(n2, n12)
- retailers 24, 26, 66, 99
- revealed preferences (RP)
- individual households 198
- riboflavin deficiency 249, 250
- rice xxi, 3, 9, 12–16, 19–21, 28, 38–40, 50, 53, 54, 61, 62, 65, 94, 108, 109–10, 217(n2), 230, 247, 248
- consumption (SADC, 1991–2001) 63t
  - crop-wise subsidy (2000–1) 17t, 17
  - government policy (South Pacific) 43
  - imported (South Pacific) 43
  - parboiled 250
  - production (India, 1949–2004) 7t, 8t
  - production, imports, exports (South Pacific) 41t
  - tariffs (SADC, 2003) 67t, 67
- rice imports 293
- rice prices 293
- Richard, S. 262
- right to food xxiii–xxiv, 83, 98, 99, 106
- legal and constitutional recognition 278
  - specific measures 321
- Right to Food Guidelines (2004–), 266, 275–83, 283–4, 284–5(n13–18)
- content 276–7, 284(n14)
  - establishment of IGWG 275, 284(n13)
  - implementation 278–9, 281–2, 283
  - information papers and case studies 277–8, 285(n15)
  - legal framework (Guideline 7) 282
  - monitoring, indicators, benchmarks (Guideline 17) 282
  - panel book 279
  - perspective 279–80, 285(n16–18)
  - projects 278–9
  - strategies (Guideline 3) 281–2
  - structure and sessions of IGWG 276
  - ‘three sections’ 276–7
- Right to Food campaigns xxiii, 19
- right to food as fundamental human right xxiii–xxiv, 266–85
- FAO and 272–5, 282–3, 284(n8–12)
  - food security 270–1
  - future 279–83, 284(n16–18)
  - legal background 266–9, 284(n1–3)
  - normative content 269–70, 281, 284(n4)
  - right to food guidelines and related activities 275–9
  - states’ obligations 271–2, 284(5–7)
- right to food as fundamental human right: future
- areas needing further attention 281–2
  - FAO’s plans 282–3
  - Guidelines in perspective 279–80, 285(n16–18)
- right to food as fundamental human right: legal background 266–9, 284(n1–3)
- ICESCR 267, 284(n2)
  - ICESCR (Article 11) 268b, 273
  - origins 266–7, 284(n1)
  - other international legal instruments 268–9, 284(n3)
  - Universal Declaration of Human Rights (Article 25) 267b

- right to food in South Asia xxiv, 287–307
- lessons for public hearings (*jan sunvai*) 302–4b
  - means of participation, expression, association 302–4b
  - production, distribution of food, political stability 288–96, 305(n2–4)
  - right to food and related rights 298–302
  - subsidies, cash transfers, freedom 296–7, 305–6(n5)
- right to food movement (India)
- rights-based approach, xxiv, 308–27
  - support group 310, 312, 317 323(n5)
- right to food movement (India):
- far-sighted directions 310–20, 323–5(n5–34)
  - beneficiaries 319, 325(n29)
  - ‘core’ versus ‘non-core’ issues 318, 325(n28)
  - destitution 313–14, 324(n16–21)
  - famine codes 319–20
  - final notes on core strategy 318, 325(n28)
  - governance 318–19, 325(n29–33)
  - ICDS 314–15, 325(n22–3)
  - local and other issues 320, 325(n34)
  - midday meals 311–13, 323–4(n7–15)
  - PDS 316–17, 325(n24–7)
  - prolusion of issues 318–20(n29–33)
- right to information xxiv, 302, 305, 321
- Right to Information Act (India, 2005) 301, 302
- right to liberty 302
- right to life 299, 302, 304, 321, 323(n1)
- right to non-discrimination 321
- right to work xxiv, 287, 305, 321
- advocacy 300–1
  - need 298–300
- Rights of Child (UN, 1989) 106
- rights-based approach to development (India) xxiv, 308–27
- far-sighted directions 310–20, 323–5(n5–34)
  - Interim Order (28 November 2001) 309, 309–10b, 311, 315, 318 323(n4, n10)
  - litigation, right to food and rights-based approach 321–2, 325(n35)
  - petition and first big break 308–9, 323(n1–4)
  - ‘three main players’ 322
- Riley, J. 191
- Rio Conventions 172
- risk 86, 97
- risk management 85–9, 90, 100, 100(n1, n3)
- ex ante, ex post 89
  - ‘three broad classes’ 87
  - ‘prevention, mitigation, coping’ 87
- Rivers, J. 261(n1)
- road hauliers 75
- roads 9, 27, 54, 55, 66, 68, 73–4, 76, 88, 325(n24)
- Robinson, E. 132, 133
- Roe, D. 167, 190
- Rome 276
- Rome Declaration on World Food Security (1996) 83, 106, 274 284(n9)
- Rome Statute of International Criminal Court (1998) 269, 284(n3)
- Roosevelt, F.D. 280
- State of Union address (1941) 267
- roots 39, 42t, 50, 73
- Roponen, L. xiii
- Rosegrant, M.W. 192
- roti* 38, 39, 291
- royalties 188
- Rubey, L. 74
- Ruiz, M. 169
- rule of law 276, 278
- rural areas xvi, xvii, 6, 9, 10, 11, 21, 24, 27, 28, 31, 47, 50, 52, 55, 73, 79, 86, 92, 108, 114, 118, 119, 120, 224, 226, 231, 280–1, 288, 289, 289t, 299, 300, 315
- dietary patterns 38–9
  - islands 51
  - power equations 301
- rural communities 185b
- rural development programmes 319
- rural health centres 153

- rural landless employment guarantee programme (RLEGP) 21
- rural livelihood 162, 195  
gender, HIV/AIDS, and xxi, 131–60
- rural people 273  
anticipated beneficiaries of LinKS project 184b
- Russia 86
- Ryan, J. 87
- safety nets xviii, xx, 58, 60, 68, 165, 277, 280, 297  
food scarcity 163
- safety nets: food-based xx, 82–105  
conventional wisdom 82  
food insecurity (exploration) 83–4, 85f  
role 89–99, 100–1(n2–3)  
vulnerability, risk management, food insecurity dynamics 84–9, 100(n1)
- safety nets: food-based instruments 95–9, 101(n4)  
emergency feeding and generalized food distribution 96–7  
food for education 96  
food stamps 99, 101(n4)  
food subsidies 98–9  
food for work 97–8  
supplemental feeding 96
- safety nets: role 89–99, 100–1(n2–4)  
rationale 91–4, 95t  
targeting mechanisms 94–5
- Sahariya case study: chronic poverty and food 290–2, 305(n2–4)
- Sahariyas 324(n21)
- Salama, P., et al. (2004) 254, 264  
Spiegel, P. 264  
Talley, L. 264  
Waldman, R.J. 264
- salt 50, 252
- Samoa xxv(n1), 35–7  
cereals (total dependence on imports) 43, 44t  
cereals, roots, tubers (production, imports, exports, 1991–2002) 41–2t  
degree of globalization 44t  
dependence on foreign trade 45, 46t  
income per capita 51, 53t
- poverty 52, 53t
- rice (import-dependency) 44t
- rural population 51, 53t
- share of agriculture and food in trade 47, 49t
- trade (food products) 47, 48t
- trade deficit (agricultural products) 47, 48t
- wheat and flour (import-dependency) 44t
- sampling 155, 199
- sampling/typology issues 152–3
- Sampoorna Gramin Rozgar Yojana* (SGRY) 22, 113, 298, 325(n26)
- Samurdhi Authority of Sri Lanka 305(n5)
- Samurdhi banks 306(n5)
- Samurdhi programme 297, 305–6(n5)
- Sanchez, P., et al. (2005) 165, 192  
Dobie, P. 192  
Swaminathan, M.S. 192  
Yuksel, N. 192
- Sangathan, A.M. 325(n30)
- sanitary conditions 253
- sanitary and phytosanitary (SPS) measures 66, 67, 73, 76, 79
- sanitation 84, 280
- Sankaran, S.R. 324(n21) 323(n10)
- sarpanch*, 299
- Saulle, M.R. 267
- savings 86, 280
- Saxena, N.C. 311, 323(n10)
- scheduled castes 15, 312
- scheduled tribes 15, 113, 312
- scheme for prevention of starvation deaths (SPSD, India) 20
- school attendance 94, 151, 312
- school dropouts 133, 152, 156, 235
- school feeding programmes 19, 60, 95, 96
- Science Council of Asia (Japan) xvi
- scurvy 249, 255
- seafood 45
- seasonal deficits (maize) 61
- Second World War 3–4, 107
- seed fairs 177
- seed management xxi
- seed systems 176, 183–4
- seeds 5, 6, 15, 68, 78, 80(n3), 132, 168, 169–70, 178, 186, 188

- self-employment 226, 227–8  
 self-employment augmentation programme 22–3  
 self-interest (intra-household) 231  
 self-sufficiency 31, 195, 219  
   cereals (India and Pakistan) 289  
   maize 60  
   national food xix, 78  
 self-targeting 95t, 97–8  
 seminars 178, 185b  
 Sen, A. 83, 222, 244, 247, 257  
   conception of famine 244–6  
   ‘moral rights of the hungry’ 259–60  
   role of freedom in food policy 286  
 Sene, A. 190  
 service sector 223t, 227, 306(n5)  
 sex ratios 233  
 Seychelles 58, 62  
 Shanghai 114  
 ‘shared growth’ strategies 280  
 Sharma, K.L. xv  
 sheep 136, 177  
 sheep and goats 202t  
 Shi, R.J. 114  
 Shifting Focal Area Extension 205  
 Shinji village 177  
 Shivpuri District 324(n21)  
 shocks 86, 87, 89, 90, 94, 101(n3), 133, 247–8, 257, 258  
 shops 50  
 siblings 133  
 Sierra Leone 278  
 Simanjiro 187  
 Sinazongwe District (Zambia) 136  
 skills 72, 133, 189, 257  
 Skogly, S. 273  
 slash and burn (*chitemene*) 136  
 Slater, R. 83  
 slow-onset crises 245  
 slums 21, 120  
 small island economies, problems 37–8  
 smallholders xx, 16, 59, 60, 62, 67–8, 70, 72, 73, 78, 79, 133, 194, 216  
   trade constraints 66  
 Smith, L.C. 306  
 social assistance 23, 96  
 social capital 134, 152, 171  
 social protection xx, 88, 89–90, 98, 100, 100(n2), 101(n4)  
 social security 82, 114, 118, 121  
 social services 82, 131  
 social stability 110, 114  
 social status 201, 233  
 social survey research process 155  
 social welfare concerns (SADC) 71–2  
 socialization 312, 324(n14)  
 socioeconomic and gender analysis (SEAGA) 137  
 socioeconomic issues 177–9, 186, 200, 321, 322, 326(n39)  
 socioeconomicists 196  
 soil 135, 162, 163  
 soil fertility 140–2t, 144, 145, 151, 155  
 Sokoine University of Agriculture 176  
 Solomon Islands xxv(n1), 35–7  
   cereals (import-dependency) 43, 44t  
   cereals, roots, tubers (production, imports, exports, 1991–2002) 41–2t  
   degree of globalization 44t  
   dependence on foreign trade 45, 46t  
   food and agricultural production indices (1991–2002) 40t  
   income per capita 53t  
   poverty 53t  
   rice (import-dependency) 44t  
   rural population 51, 53t  
   rural–urban migration 55  
   share of agriculture in trade 47, 49t  
   trade (food products) 47, 48t  
   trade surplus (agricultural products) 47, 48t  
   wheat and flour (import-dependency) 44t  
 Somalia 253, 261(n2)  
 sons 223, 225  
 sorghum 12, 62, 63t, 67t, 67, 136, 247, 250  
 South Africa 58–68, 69f, 72, 77, 277, 296, 322, 326(n38–9)  
   cereal tariffs (2003) 67t  
   CFF loans and cereal import requirements 75t  
   democratic reforms (1994–) 59, 60  
   food consumption (1991–2001) 63–4t  
   GM crops 80(n8)

- human development and life expectancy 290, 290t
- national food strategy 60
- South African Customs Unions (SACU) 60, 65, 67
- South African Futures Exchange (SAFEX) 72, 74, 75t, 77, 79
  - SAFEX *Information Release* 76
- South African Human Rights Commission (SAHRC) 322
- South America xvii
- South Asia xvii, xxii
  - cereal production and calorie availability (1970–2000) 288t
  - comparisons (inter- and intra-regional) 220–2
  - economic activity rates (women) 227
  - inter-country comparisons 221t
  - right to food xxiv, 287–307
  - women and food security 219–40
- South India 225
- South Pacific island countries xviii, xxv(n1)
  - background 35–9
  - consumption patterns 38–9
  - demographic characteristics 35–7
  - economic performance 51, 53t
  - GDP 46t, 47
  - land area 35, 36t, 36, 37
  - macro food security 39–45
  - main exports and subsistence sector 45–7
  - problems of small island economies and food security 37–8
  - socioeconomic indicators 51, 53t
  - trade deficits (agricultural products) 47
  - trade in food products and export earnings 45–50
- Southern Africa 170, 246, 254
- Southern African Development Community (SADC, 1992–) xix–xx, 174
  - agricultural trade (trend) 65–6
  - cereal tariffs (2003) 67t
  - Council of Ministers for Food (FANR) 78, 80(n1)
  - food consumption (national) 62, 63–4t
  - food supply 61–2
  - food trade (regional) 62, 65–6
  - members 58
  - tariffs 67, 67t
  - trade barriers 66–7, 72, 80(n2)
  - trade protocol (1996) 65
- Southern African Development Community (SADC): food security xix–xx, 58–81
  - domestic support 67–70, 80(n3)
  - food position 61–7, 80(n2)
  - food systems: overview 59–60, 80(n1)
  - lessons from food crisis (2001–3) 70–6, 79, 80(n4)
  - maize markets 76–8, 80(n5–8)
  - policy framework 59–60, 80(n1)
- Southern African Development Community: lessons of 2001–3 food crisis 70–6, 79, 80(n4)
  - barriers to trade 72, 79
  - procurement and finance barriers 71t, 72–5, 79, 80(n4)
  - regional food requirements 71, 71t
  - social welfare concerns 71–2
  - transport and border barriers 75–6
- soya/soyabean 12, 80(n8), 247
- Spangenberg, J.H. 166
- Special Rapporteur of Commission on Human Rights 293
- Special Rapporteur on Right to Food 274, 284(n11), 301
- spices 5, 9, 10t, 28
- Spiegel, P. 264
- spinal bifida cystica 253
- Sri Lanka 221t, 222, 233, 234, 236, 237
  - cereal production and calorie availability (1970–2000) 288t
  - colonial era 225
  - ethnic unrest, violation of political freedom, and food 294–6
  - experience with food subsidy 296–7
  - female employment (1991–9) 223t
  - female workforce 227
  - human development and life expectancy 290, 290t
  - inheritance 225
  - post-independence governments 225
  - wage differentials (2001) 228t
  - wages (gender bias) 229–30
- Srinivasan, C.S. 168

- Srinivasan, P.V. 119  
 Srinivasan, T.N. 37  
 standard enumeration areas (SEAs,  
 Zambia) 138, 153  
 staple foods 38, 132, 247, 256–7,  
 260, 296  
 starchy roots 61, 63t  
 starvation 71, 247, 253, 291, 292, 320  
 as method of warfare 269  
*State of Food Insecurity in the World* (FAO,  
 2004) 165  
 state governments (India) 18, 20, 21,  
 22, 26, 27, 31(n4), 107, 108, 115,  
 225–6, 309, 310b, 314, 320 323(n4)  
 usage 323(n3)  
 state marketing boards 66, 67  
 state obligations  
 facilitate 271, 272, 305(n1)  
 fulfil 271, 272, 305(n1)  
 protect 271, 272, 305(n1)  
 provide 271, 272, 305(n1)  
 respect 271, 272, 305(n1)  
 State Trading Corporation 28  
 states xxiii, 78, 276, 304  
 obligations (right to food) 271–2,  
 284(n5–7)  
 ‘responsibility to assure employment’  
 300  
 ‘statistical orphanhood effect’ 156  
 Statistical Package for Social Scientists  
 (SPSS) 199  
 statistics xxi, 157, 222, 296  
 labour force 227  
 Stein, A. 191  
 stigma 150, 156  
 still births 252  
 Stokes, C.S. 132, 151  
 Stokes, S. xv  
 storage 9, 14–15, 26–8, 54, 60, 66, 72,  
 73, 77, 108, 115, 258  
 Strategic Grain Reserve (SGR, Malawi)  
 73  
 Streeten, P. 37  
 structural adjustment programmes  
 (SAPs) 67, 68, 83, 220, 228, 293,  
 296–7  
 stunting 234, 235  
 Sub-Saharan Africa (SSA) xviii, xxi,  
 131, 153, 169, 171, 188, 194–7, 219,  
 220, 236  
 economic activity rates (women) 227  
 inter-country comparisons 221t  
 inter-regional comparisons 221t  
 labour force participation (women)  
 227  
 Subbarao, K. 126  
 subsidies xx, xxiii, 5, 6, 11, 29, 30, 40,  
 67, 79, 108–11, 113–18, 120, 260,  
 287, 289, 310b,  
 317, 321  
 agricultural 93  
 cost 21  
 food distribution 19  
 foodgrain 109t, 110t, 121, 122t  
 indirect 15  
 Indonesia 248  
 inputs 59  
 level of economic development and  
 121–2  
 Sri Lanka 296–7  
 subsistence xviii, 38, 45–7, 50, 135,  
 186–7, 222, 226, 230, 314  
 Sudan 251, 252, 261(n2)  
 sugar xviii, 9–10, 38, 46t, 50, 54–5, 60,  
 62, 65, 108, 109n, 248  
 consumption (SADC, 1991–2001) 63t  
 exports 45  
 production (India, 1980–2004) 10t  
 sugar cane 16, 17t, 17, 43  
 sunflower 12, 61, 136  
 supplemental feeding 96  
 supplementary nutrition programmes  
 (SNPs) 20–1  
 supply and demand 3, 4, 5, 11, 12, 28,  
 51, 77, 243, 244  
 agricultural labour 292  
 employment 298, 300  
 support prices 14, 24  
 Supreme Court of India xxiv, 308,  
 310–23 323(n1, n9–12), 325(n24,  
 n26, n31, n35)  
 ‘Apex Court’ 18  
 commissioners 311, 312, 314, 315  
 323(n10)  
 implementation of directions  
 311–12, 314–18, 320, 323(n10,  
 n12)  
 interim orders (2002, 2004) 311,  
 319, 320, 323(n11), 325(n30,  
 n32–3)

- Supreme Court of India: Interim Order  
(28 November 2001) 309,  
309–10b, 315, 318 323(n4)  
implementation 311, 323(n10)  
survey design 150–1, 155  
surveys 157  
sustainable development 167  
cornerstone 161  
gender and 163–6  
sustainable livelihoods (SL) framework  
133–4, 151, 154, 166, 179  
Swallow, A. xiii  
Swaminathan, M.S. 192  
*Swamjayanti Gram Swarogjar Yojana*  
(SGSY) 23  
Swaziland 58, 60–2, 66, 69f, 70, 71,  
71t, 74–8, 174, 175, 178, 179,  
186, 188  
cereal tariffs (2003) 67t  
CFF loans and cereal import  
requirements 75t  
food consumption (1991–2001)  
63–4t  
HIV/AIDS (2001) 72t, 72  
Swedish International Development  
Cooperation Agency (Sida)  
xiii, 205  
sweet potatoes 63t, 136, 217(n2)  
system of national accounts  
(SNA) 222
- Taliban regime 249  
Talley, L. 264  
Tamil Nadu 21, 224, 323(n8)  
Tamil Tigers 295  
Tamils 294–5  
tannins 247  
Tanzania 58, 60, 61, 65, 67, 69, 69f, 70,  
72, 75, 76, 174–8, 182–8, 250  
CFF loans and cereal import  
requirements 75t  
food consumption (1991–2001)  
63–4t  
target inputs mechanism xx  
targeted inputs programme (TIP), 68,  
79  
targeted programmes 165  
targeted public distribution system  
(TPDS, India, 1997–) 19–20, 21,  
111, 112–13, 119, 120, 310b  
targeting 7, 30, 96  
targeting errors 95t  
targeting mechanisms 94–5  
tariffs xx, 5, 30, 66, 67, 67t, 79  
'import duties' 6  
reductions 78  
taro 45, 50  
tax incentives 68  
taxes 15, 76, 79  
Tchouanguép, M.F. 191  
Tchoundjeu, Z. 191  
tea 28, 50, 65, 230, 247, 250, 320  
tea plucking/cotton picking 229t,  
229  
technical assistance 22  
*Technical Proposal* (ESRF, Tanzania, 2002)  
65, 80  
technical support 183  
technology 8, 11–12  
technology attributes  
influencing choice of mechanization  
method 213–15  
preferred by households 211–13  
technology transfer 29, 31  
telecommunications 27  
television and radio 178, 310b,  
319  
Telfer-Taivainen, L. xiii  
tenants 225  
terms of trade  
agricultural sector 12  
Thailand xvii, 51, 249, 261(n2), 293  
theatre 300  
theft 75, 93  
Thesawalamai system of personal law  
(Sri Lanka) 225  
thiamine deficiency (beriberi) 249–50,  
255–6  
Thomas, J. xv  
Thompson, R.L. 54  
Thomson, A. 58  
Thorne-Lyman, A. xv  
Thrupp, L.A. 162  
Tian, W.M. 123  
tillage 195, 196, 200, 201, 206–13,  
215, 216  
timber 45, 46t  
time 185–6, 199–200, 233, 248, 279,  
318, 325(n24)  
Timmer, C.P. 54  
tobacco 62, 65, 75, 231

- Tonga xxv(n1), 35–7, 39  
 cereals (total dependence on imports)  
 43, 44t  
 cereals, roots, tubers (production,  
 imports, exports, 1991–2002)  
 41–2t  
 degree of globalization 44t  
 dependence on foreign trade 45, 46t  
 financing of food imports 49t, 50  
 food and agricultural production  
 indices (1991–2002) 40t  
 income per capita 51, 53t  
 poverty 52, 53t  
 rice (import-dependency) 44t  
 share of agriculture and food in trade  
 47, 49t  
 trade (food products) 47, 48t  
 trade deficit (agricultural products)  
 47, 48t  
 wheat and flour (import-dependency)  
 44t
- Toole, M.J. 261(n2)
- toxic products 246
- trace minerals 248
- tractors 216
- trade 30, 37, 45, 46t, 60  
 food products (South Pacific) 47,  
 48t, 49t  
 illegal 79  
 informal 73  
 international agreement (1994) 6  
 role in assuring food availability 70  
 trade barriers 59, 66–7, 72, 80(n2)  
 trade expansion 164  
 trade in food products and export  
 earnings (South Pacific) 45–50  
 food products (self-reliance) 47, 50  
 main exports and subsistence sector  
 45–7  
 merchandise trade in food products  
 47, 48t, 49t
- trade liberalization xix, 59, 78  
 food products xix  
 obstacles (SADC) 66  
 SADC 61, 62
- trade-GDP ratio 45
- traditional knowledge 168, 169, 171,  
 173, 174
- traditional seed systems 177
- training xxii, 23, 28, 172, 175, 176,  
 181, 184b, 185, 186, 198, 200, 202t,  
 205–11, 207–12t, 215, 216, 217(n2),  
 256, 283  
 iterative approaches 183  
 training materials 217(n3)  
 training of rural youth for  
 self-employment (TRYSEM) 23
- transaction costs 25
- transparency 217(n3), 270, 301, 304,  
 316, 319  
 grain management 123–4  
 transport 9, 26, 54, 77, 91, 325(n24)  
 transport barriers 75–6  
 transport costs 65, 66, 67, 70, 73–4,  
 75n, 79  
 transport subsidy 313
- tribal areas (India) 9, 20, 234, 314,  
 324(n21)
- trickle down, 'insufficient' 280
- Tripp, R. 169
- tryptophan 250
- tsetse infestation 136
- tsunami (2004) 255, 261(n10)
- tuberculosis 138
- tubers 39, 42t, 50, 73
- Tunisia 98
- Tuvalu 37–8
- typhoid 248
- typhus 248
- Uganda xxi, 65, 185, 221t, 277  
 demographic characteristics 135t  
 gender, HIV/AIDS, and rural  
 livelihoods: micro-level 131–60  
 human capital and natural capital  
 140t  
 physical/financial capital and food  
 security indicators 146t
- UN (United Nations) xxiii, 106, 266–7  
 definition of 'system of national  
 accounts' boundary 222
- UN agencies 295
- UN Charter 272  
 'Article 1.3' 284(n8)  
 Article "2.7" 267
- UN Committee on Economic, Social and  
 Cultural Rights (CESCR) 272, 283  
 General Comment 12 (1999)  
 269–70, 271, 274–5, 277,  
 284(n6–7), 305(n1)
- UN country teams 283

- UN Development Group 283
- UN FAO *see* FAO
- UN General Assembly 284(n11)
- UN High Commission for Human Rights (UNHCHR) 274, 284(n11)
- UN High Commissioner for Refugees 295
- UN Millennium Declaration (2000) xvii  
*see also* Millennium Development Goals
- UN Secretary-General 282
- UN Sub-Commission on Prevention of Discrimination and Protection of Minorities 269, 284(n4)
- UN system 172, 187, 284(n11)
- UN WFP *see* World Food Programme
- UNAIDS xx–xxi, 131
- undernutrition 222, 233, 234–5, 287, 290
- UNDP 159, 164
- unemployment 89, 97, 98, 298, 298t, 300
- UNESCO 169
- UNICEF xv, 255, 258
- 'unified grain procurement and sale system' (PRC) 109
- union territories (India) 311, 313, 320, 323(n3–4)
- United Kingdom 26
- United Kingdom: Department for International Development (DfID) xiii, 134
- United Nations University: World Institute for Development Economics Research (UNU-WIDER) i, xiii–xvii
- gender and food security (research project) xxv(n2)
- United Progressive Alliance (UPA) 312–13, 323(n6)
- United States 4, 50, 67, 79, 94, 99, 121
- US dollar 76
- USAID 73, 77
- USAID/MOST 256
- Universal Declaration of Human Rights (UDHR, UN, 1948) 106, 267, 284(n9), 305(n1)
- Article 25 267b
- Article 25.1 305(n1)
- Article 28 271
- Article 29.1 271
- universities xiv–xvi, 176, 180, 184–5b, 283
- University of South Pacific 56
- University of Witwatersrand (WITS) xiv
- urban areas 9, 10, 21, 36t, 50, 52, 70, 73, 92, 108, 113–16, 118, 119–20, 288, 289t, 298, 299, 315
- dietary patterns 38–9
- food-insecure 54
- urbanization 37, 55, 72
- user charges 18
- user rights 203, 203t
- Uttar Pradesh 31(n3), 314
- Valid International 258
- Vanni area (Sri Lanka) 295
- Vanuatu xxv(n1), 35–9
- cereals (import-dependency) 43, 44t
- cereals, roots, tubers (production, imports, exports, 1991–2002) 41–2t
- degree of globalization 43–5
- dependence on foreign trade 45, 46t
- financing of food imports 49t, 50
- food and agricultural production indices (1991–2002) 40t
- income per capita 53t
- population growth 52
- poverty 53t
- rice (import-dependency) 44t
- rural–urban migration 55
- share of agriculture and food in trade 47, 49t
- trade (food products) 47, 48t
- wheat and flour (import-dependency) 44t
- vegetable oils 61, 63t, 65, 66
- vegetables 5, 9, 38, 46t, 50, 54, 61, 65, 66, 136, 170, 217(n2), 247, 248, 254
- exports 45
- production (India, 1980–2004) 10t
- Venezuela 274
- Venn diagrams 137
- Vernooy, R. 167–8
- Vidar, M. xv, 273
- Vienna Declaration on Human Rights (1993) 284(n9), 285(n18)
- Vietnam xvii

- villages 24, 26, 27, 54, 177, 224, 228, 298–9, 302, 319  
 grain banks 20  
 power brokers 298
- Villarreal, M. 191
- violence against women 164
- Vira, B. 190
- vitamin A 21, 255, 256, 257–8  
 deficiency 245, 248, 250–1, 259, 261(n4–6)
- vitamin B supplements 255
- vitamin B3 deficiency (pellagra) 250
- vitamin C deficiency (scurvy) 249
- vitamins 62
- vitamins and minerals in humanitarian crises: entitlement failure from food quality perspective **xxiii**, 243–65  
 entitlement to freedom from ‘hidden hunger’ 244–6  
 entitlement: quality 246–8, 261(n1)  
 micronutrient deficiencies (in times of crisis) 248–54  
 public action in emergencies 254–9, 261(n9–15)
- Vivek, S. xv
- Von Braun, J., et al. (2004) 165, 192  
 Rosegrant, M.W. 192  
 Swaminathan, M.S. 192
- vulnerability  
 dimensions 85f  
 entitlement problem 85f  
 through exploitation 85f  
 food-based safety nets **xx**, 82–105  
 as powerlessness 85f
- vulnerability: composite index (Briguglio) 37
- vulnerability to hunger: causes and remedies **xviii–xx**, 1–127  
 food security in SADC region **xix–xx**, 58–81  
 food security in South Pacific 35–57  
 national food policy impacting on food security (India) **xix**, 3–34  
 public distribution systems (India versus PRC) **xix**, 106–27  
 role of food-based safety nets **xx**, 82–105
- vulnerability, risk management, food insecurity dynamics **84–9**, 100(n1)
- ‘vulnerable group feeding’ 293
- wage differentials (South Asia) 228–30
- wage employment programmes 21–2, 23
- wages 11, 93, 95, 97, 98, 136, 164, 226, 237, 298  
 agricultural and non-agricultural operations (India, 1999–2000) 229t  
 gender-specific (India, 1999–2000) 229t  
 maximum rates 228, 229t  
 rural 6  
 rural (gender bias) 229
- Waldman, R.J. 261(n2), 264
- Walker, T. 87
- Wan, G. xv
- Wanjiku, J. xv
- war 108
- war crimes 269
- warehouses/godowns 9, 28, 108, 116, 325(n24)
- water 29, 84, 162, 163, 172, 177, 253, 280
- Watkinson, E. 76
- Watts, H. 85n
- weather 54, 77, 89, 177
- Webb, P. xv, 104
- websites  
 Asian Development Bank 238  
 cici.org 264  
 COHRE 326  
 CRED 262  
 exchange rates 109n, 110n  
 FAO 42n, 56, 158, 189(n2–3), 238, 284(n10), 307  
 geocities 219  
 IDRC 239  
 International Commission of Jurists 326  
*Little Magazine* 239  
 malaria 263  
 miscellaneous others 238  
 right to food (India) 326  
 SAFEX 80(n4)  
 Sen, A. 264  
 Third World Network Africa 80  
 UNDP 159
- weeds 200, 211, 212t, 213, 213t, 214t, 215, 229t
- Wei, L.Y. 114

- weight gain 255–6  
 Wernicke's encephalopathy 255–6  
 West Bengal 225, 229, 232, 237, 320  
 wheat xxi, 4, 6, 9–16, 19–21, 23, 25,  
 28, 39, 41t, 50, 61, 62, 76, 108,  
 109–10, 113, 296  
 consumption (SADC, 1991–2001) 63t  
 crop-wise subsidy (2000–1) 17t, 17  
 imports (Bangladesh, 2002) 301  
 production (India, 1949–2004) 7t,  
 8t, 8  
 tariffs (SADC, 2003) 67t, 67  
 world price 31  
 wheat flour 43, 54, 65, 66, 67t, 67, 256  
 wheat prices 93f  
 White, J. 132, 133  
 wholesaling 25, 26, 27, 66  
 widowers 150, 200, 202–6, 211, 212t,  
 213, 214t  
 widowhood 224  
 widows 150, 200, 203, 211, 223,  
 324(n21)  
 Wieggers, E. xv  
 wild foods 170  
 Wilson, E.J. 28  
 winter crop production 73, 79  
 Wolmer, W. 190  
 women xxi, 72, 84, 88, 92, 95t,  
 97, 133, 173, 176, 180, 187,  
 195, 205, 217(n1), 220, 256,  
 258, 268, 298  
 casualization of workers 228  
 chronic energy deficiency 11  
 contribution to household income  
 230–1  
 crop knowledge (lost) 186  
 economic contribution 237  
 employment (South Pacific) 51, 53t  
 empowerment 163, 164, 167, 219,  
 237, 257  
 entitlement to productive resources  
 237  
 equal rights 276  
 'females' 11, 37  
 folate deficiency 254  
 food security/energy security index  
 233  
 impact on household food security  
 230–1  
 inheritance rights 223–5  
 knowledge 187, 189  
 labour force participation 226–7  
 land rights (South Asia) 222–6  
 malnutrition 20–1  
 more trustworthy than men  
 (household expenditure) 231  
 'mothers' xxiv, 20–1, 31, 68, 224,  
 257, 258  
 nutritional and health status xxii  
 pregnant 154, 232, 254, 276, 292,  
 321  
 pregnant/lactating 19, 21, 31, 96,  
 261(n4), 268, 309–10b, 314, 315  
 role in food production 223  
 rural 226–7, 268  
 Sahariya tribe 291  
 self-denial 232  
 self-perception xxii  
 'should be targeted' 231  
 social status 235, 236  
 'statistical invisibility' 222  
 status xx  
 'unquestioning acceptance of status'  
 237  
 vitamin A deficiency 261(n4)  
 workload 234  
 women and food security in South Asia:  
 current issues and emerging  
 concerns xxii, 219–40  
 differential access to nutrition and its  
 inter-generational consequences  
 233–6, 238(n2)  
 gender disparities (intra-household)  
 231–3, 237  
 individual access to food 231–3  
 land rights and women farmers  
 222–6  
 livelihood options 226–8  
 South Asian region: inter- and  
 intra-regional comparisons  
 220–2  
 wage differentials 228–30, 237  
 women: contribution to household  
 income 230–1  
 women: impact on food security and  
 nutrition 230–1  
 women's groups 216, 236  
 women's rights xxii, 237  
 work opportunities 291  
 workfare 287, 297, 298  
 workhouses 251

- workshops 178, 181, 183, 185, 185b
- World Bank xiv, 68, 90, 100n, 235
- World Bank: Risk and Vulnerability Analysis, 90
- World Bank Indigenous Knowledge (IK) Programme 178, 185
- World Food Programme (WFP, UN)  
xiv, xv, 19, 69, 73, 77, 93, 94, 100n, 276, 283
- data source 93n
- joint programming (with UNICEF) 258
- WFP's Vulnerability Analysis and Mapping 90
- WFP-CDC 261(n15)
- World Food Programme Report* (1979) 288
- World Food Summit (WFS, 1996) xvii, xxiv, 84, 106, 165, 269, 270, 273–4, 274, 281, 283
- documents 277
- follow-up 274–5, 284(n11–12)
- World Food Summit: *five years later* (WFS: *fyf*, 2002) 83, 106, 275
- World Food Summit (WFS) Plan of Action (1996) 83, 284(n9)
- World Health Organization (WHO) 245, 255, 265, 292
- world prices  
rice 43  
sugar cane 43
- World Summit for Social Development (1995) 83
- World Summit on Sustainable Development (WSSD, 2002) 166
- World Trade Organization (WTO) 70, 277
- agreement on agriculture (1995) 30
- ministerial conference (2005) 164
- xerophthalmia 250–1, 255
- Yan, Z.X. 114
- yields 30, 201  
*mahangu* 135
- youth xxi, 134
- Yu, Z.L. 114
- Yuksel, N. 192
- Zambia xx, xxi, 58, 60–79, 97, 169
- CFF loans and cereal import requirements 75t
- declined US aid (2002) 78
- demographic characteristics 135t
- food consumption (1991–2001) 63–4t
- gender, HIV/AIDS, and rural livelihoods: micro-level 131–60
- GM crops 80(n8)
- HIV/AIDS (2001) 72t
- state of emergency (2002) 71
- Zambia: Northern Province 135–45, 148–9, 151, 153–5, 157(n1)
- human capital and natural capital 141–2t
- physical/financial capital and food security indicators 147t
- Zambia: Southern Province 135–9, 141t, 143–51, 153, 155, 157(n1)
- human capital and natural capital 141
- physical/financial capital and food security indicators 146–7t
- Zambian government 77
- Zanghi, C. 272
- zebu 201, 202t
- Zhou, Z.Y. xvi, 123, 127
- Zhou, Z.Y., et al. (2001) 119, 120, 127
- Liu, X.A. 127
- Perera, N. 127
- Ziegler, J. 301
- Zimbabwe 58, 60–71, 71t, 74–8, 169, 174, 188
- cereal tariffs (2003) 67t
- CFF loans and cereal import requirements 75t
- food consumption (1991–2001) 63–4t
- GM crops 80(n8)
- HIV/AIDS (2001) 72t, 72
- state of emergency (2002) 71
- Zimbabwe dollar 74
- zinc 255, 261(n12)
- zinc deficiency 245, 251, 253, 261(n8)
- Zurbrigg, S. 252