Food Insecurity in India’s Agricultural Heartland
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The Economics of Hunger in Punjab

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India has a long way to go before it is anywhere near the mammoth task of achieving the United Nations goal of ending hunger in 2030. It is ironical that this book raises the issue of ‘Hunger’ in a state where it is least expected; a state with mountains of food grains and overflowing godowns; a state that boasts of highest yields and largest area under irrigation; a state that played the most prominent role in helping India achieve its goal of food self-sufficiency.

The paradoxical situation in Punjab/India, will be clear from the following news captions:

‘As on July 1, 2019, food grain stocks in public godowns reached a new peak of 74.25 million tonnes, almost 81% above the buffer stock and strategic norms.’
(Source: Food Corporation of India)

‘India was ranked 102 in the 2019 Global Hunger Index much below its neighbours Pakistan (94) Bangladesh (88) Sri Lanka (73) China (25) . . .
India suffers from a level of hunger that is serious.’
(Source: Concern Worldwide and Welthungerlife)

By investigating the hydra-headed concept of food security in Indian Punjab, this book brings to fore the different dimensions of deprivation of human capabilities and the intricate relationship of food security with economy, ecology, and state policy.

Moreover, it is a wake-up call for India; for if, this is the state of affairs in one of the more prosperous states, what would be the situation like, in the poorer ones? With a strong commitment to achieving the goal of human resource development India’s biggest burden could well become India’s greatest asset in the path of inclusive development.
This book is dedicated to all the farmers of the world who are struggling to grow our food and give us the gift of nourishment.
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It is commonly said and widely believed that reading about Economics cannot be a joyful experience. Though this is a matter of taste and preference, I would not deny that this dim view of Economics is justified in some cases. However, I can unhesitatingly state that this piece of excellent work of Economics scholarship by Harpreet Kaur Narang was an absolute joy to read.

I have a special reason to be pleased with this work. In 2009, while I held a visiting position at Jawaharlal Nehru University, Delhi, I came to know Sumail Singh Sidhu, who was doing fascinating work on Punjab history for his doctoral degree. One day, he brought a friend to meet me and introduced her as an Economics lecturer at Delhi University who was interested in pursuing research on the Punjab economy. This friend was Harpreet. During our very enjoyable conversation on areas of mutual interest, I suggested to her that she might like to explore further what I had proposed in my 2008 book *Federalism, Nationalism and Development: India and the Punjab Economy*, namely, that Punjab is a paradoxical case of a ‘rich but not developed’ regional economy. What Harpreet has achieved in this book is a brilliant innovation in creatively reworking that dialectic as hunger amidst plenty by concretizing it through an interrogation of food insecurity in Punjab, a state widely believed to be the ‘food bowl’ or agricultural heartland of India.

The contradiction inherent in ‘rich but not developed’ or, in this context, in ‘plenty but hungry’ is at the core of the agrarian ‘development’ strategy into which Punjab was incorporated in the 1960s to attain the Indian state’s goal of national food self-sufficiency. The increase in food output was obtained by chemicalizing and mechanizing Punjab agriculture. Chemicalization has led to land degradation, water exhaustion, and air pollution; and mechanization has led to increased unemployment. Harpreet’s enlightening discussion of the low elasticity of employment in Punjab as a result of mechanisation and its link with the food vulnerability of the unemployed was particularly refreshing.

This work demonstrates very convincingly that food security does not encompass merely the physical quantity of food available but also
the content of the food consumed, namely its nutritional quality, and the conditions under which that food is consumed, namely the external hygienic and environmental standards surrounding the act of consumption. The obsession with increasing food output alone led to narrowing the crop mix mainly to the cereal crops—wheat and rice—and to a drastic decrease in the crop and food diversity that existed before the launch of the so-called Green Revolution. The Green Revolution has now turned out to be horribly ungreen. If the loss of crop diversity made the land more prone to crop diseases, the loss of food diversity led to a decline in the quality of nutrition and an increase in human illnesses. Capturing this complexity is an outstanding achievement of this work.

This achievement has been accomplished by theoretical engagement with the conceptual category of ‘food security’ as well as by marshalling an enormous amount of empirical material from a range of authentic sources—regional, national, and international. She has further contributed to scholarship on food security by highlighting the plight of those who are disadvantaged by their social status, which is linked to gender, caste, and class.

By contextualizing her study on Punjab through tracking changes in the Indian and global food economies, Harpreet has made a significant contribution to Indian food studies and global agrarian research. This study—coming at a time when India is host to an unprecedented farmers’ movement that has attracted international attention—is of interest not only to scholars in Punjab studies, agrarian studies, and development studies, but also to activists and policymakers in India. The threat of global warming, or rather accelerating heating, and the severe loss of biodiversity have heightened fears about global food insecurity. This adds urgency to the findings of this marvellous study.

Harpreet’s skill in combining scholarly rigour (which appeals to specialists) with accessibility (which opens the work to a wider readership) is truly remarkable. I am sure that her students already know this, and I hope that the readers of this book beyond her classroom would agree with me that some works of Economics can be not only enlightening but enjoyable reading, even when they discuss such concerning subjects as food insecurity.

Pritam Singh
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Preface

The population of the world is expected to increase from 7 billion in 2010 to 9 billion in 2050, with India emerging as the most populous country in the world. At the global level, the South Asian region bears the highest burden of undernourished people in the world with India contributing the maximum number of people in the region. India is a signatory to all the international Declarations on eradication of hunger and poverty. Yet, the nutrition profile of India shows that India is home to the world’s largest food insecure population of more than 200 million hungry people, one-third of the population below the international poverty line of $1.25 per day and the worst malnutrition statistics in the world (FAO, 2015b).

For a country like India, the achievement of food security is a continuing challenge. Furthermore, the severe food and nutrition insecurity not only suggests the presence of under nutrition and malnutrition in the country but also sheds light on the crisis of the rural economy that India faces. It has now been acknowledged that no broad-based development can take place unless the human resource base is adequately nourished with the capacity to function at the peak level, both mentally and physically.

India made a commitment to the goals of the World Food Summit, to move towards a ‘Hunger Free India’ by 2007. Not only does hunger conclusively exclude a large number of people from availing of their fair share of the benefits of economic growth, but it also results in substantial losses to the economy in terms of lowered productivity and higher health and welfare costs (Swaminathan, 2004).

India’s food policy has emerged from a concern to ensure adequate supplies of food grain (mostly cereals) at reasonable prices. Thereafter it has evolved gradually from a focus on national aggregate availability of food grain to concentrating on household and individual level nutrition security.

The beginnings of food policy in India can be traced to the aftermath of the Bengal Famine in 1943. Several contemporary features of India’s
food policy find their origins in this period. In January 1965, the Food Corporation of India (FCI) was set up in order to secure a strategic and commanding position for the public sector in the food grain trade. An Agricultural Prices Commission (subsequently renamed Commission on Agricultural Costs and Prices, CACP for short) was also set up to recommend procurement prices based on an analysis of costs of cultivation.

India's food grain position turned precarious in 1965–66 following two successive monsoon failures. Statutory rationing was introduced in towns with more than one lakh population from 1965–66 to 1966–67, following a severe drought. Public distribution, crucially based on food imports, played a major role in mitigating the disastrous consequences of the drought. India resorted to wheat imports from the USA under Public Law 480, leading to a situation described by an eminent agricultural scientist as ‘a ship-to-mouth’ existence. This had repercussions on India's pursuit of an independent foreign policy. This development brought the issue of national self-reliance in food grains, prominently on the political agenda.

The response of the State to the food grain crisis of 1965–66 eventually took the shape of a new agricultural strategy, which has come to be known as the Green Revolution (GR). High yielding seed varieties, combined with chemical fertilisers, pesticides and agricultural extension efforts, marked the new basket of inputs under the GR. This was also backed up by significant public investment in input subsidies, research, and improvement in infrastructure such as irrigation.

The GR, confined largely to rice and wheat (in spite of the sustainability issues), was the key to sustaining the growth rate of food grain output of the 1950s and early 1960s, but without the benefit of substantial increases in the area cultivated. The focus was on raising yields per acre and there was a regional imbalance. Nevertheless, it helped critically in increasing the country's food grain output substantially, at a rate higher than the rate of growth of population through the decades up to 1990. It has given rise to the notion that the country has achieved ‘self-sufficiency’ in food grain. The idea that India is self-sufficient in food grain is, however, not entirely unproblematic.

The objectives of self-sufficiency in food grain production, price stability, and ensuring provision of food grain at reasonable prices to enable universal access continue to be highly relevant to India. However there
have been significant changes in the environment in which Indian agriculture operates. Following the adoption of reform policies since 1991, Indian farmers have become exposed to deflationary macroeconomic policies, volatile international prices, decreasing access to as well as more expensive institutional credit, reduction in public investment, environmental degradation resulting in the stagnation of agricultural growth and productivity and a near collapse of extension services. These developments pose new challenges for policies concerning food security.

The prime question in the mind of the readers is surely why Punjab has been chosen as a case study. Is it not strange that we wish to do that in a state which feeds the entire country and is responsible for making India self-sufficient in food grains? How come we wish to investigate the issue of food security in a state where the problem of food insecurity is least expected? It is a well-known fact that agriculture is the prime mover of the Punjab economy. With 82% of the total geographical area of the state under cultivation, 191% cropping intensity (compared to all India average of 135%) and with 99% of the area under irrigation (Economic Survey of Punjab, 2015–16); is there any reason to suspect any food insecurity in the present times? The answers to all these questions lie in understanding the multidimensional nature of the concept of food security and the importance of addressing the issue, even in a food abundant state. Since a single volume is inadequate to address the entirety of the problem, this book makes a humble attempt to bring to light, certain basic points, in order to generate interest in the issue and create awareness about the urgency of tackling it.

More often than not, ensuring food security in a region has been interpreted as an issue of availability and distribution of food. This generally involves the public distribution system and at the most a system of ensuring affordable prices for the poorer sections of the society. However, as we have seen, food security is a multi-dimensional concept and ensuring food security means a plethora of challenges. This brings to fore a multiplicity of issues that affect food security directly or indirectly; including education, health, employment, gender and caste-based discrimination, and environmental conditions such as health care, availability of safe drinking water and sanitation as well as nutrition practices and knowledge that promote absorption and improve health status. No wonder then, hunger is much more widespread than poverty.
India is a signatory to all the international Declarations on eradication of hunger and poverty. Yet, the nutrition profile of India shows that she is home to the world’s largest food insecure population, constituting more than 200 million hungry people, one-third of the population below the international poverty line of $1.25 per day and the worst mal-nutrition statistics in the world (FAO, 2015). The Global Hunger Index, 2016 that ranked 118 countries in the developing world, shows that India is still rated as a country with ‘serious’ hunger levels. India does not have even a single state in the ‘low hunger’ or ‘moderate hunger’ categories. Punjab, Kerala, Haryana, and Assam are in the ‘serious’ category, while the others are in ‘alarming’ or ‘extremely alarming’ category (IFPRI, 2008, 2016).

It is ironical to investigate the issue of food security in a state which is the granary of India and is largely responsible for making the country self-sufficient in food. However, the readers will soon realize why a food abundant state like Punjab makes an ideal case study for exploring the paradoxical issue of ‘Hunger amidst Plenty’.

Firstly, being primarily rural, largely agrarian and food-abundant, Punjab, ideally represents India. Agriculture is not only the backbone of the Punjab/Indian economy, but also a way of life, a tradition, and the anchor of overall livelihood opportunity.

Secondly, as Punjab helped the Indian government to achieve its national goal of food self-sufficiency, its own growth became exclusive, unsustainable and failed to trickle down and generate livelihood and nutritional security to its masses. In this food abundant state, the paradox of poverty amidst plenty is becoming more and more apparent as the agrarian crisis manifests in the form of increasing farmer debts and suicides, deteriorating farm viabilities, and an overall livelihood crisis.

Thirdly, in the 2012 Planning Commission data on rural urban poverty, as measured by the percentage of population below monthly expenditure averages, 65.9% of Punjab’s rural population lies below the poverty line. Surprisingly there are only four other states which are worse off (Rajasthan 67%, Kerala 67.3%, Sikkim 68.7%, Uttarakhand 83%) (Times of India Report, 29 April 2012).

Fourthly, we have seen that food security no longer means a simple problem of availability and distribution, but a much wider concept involving access, absorption, nutritional security, and sustainability.
So far absence of hunger has been taken for granted in this ‘food bowl’ of the country. It is no doubt an ironical situation that, in a state with mountains of food grains and overflowing godowns one would like to investigate the issue of food security. But in the light of the aforementioned issues that seriously jeopardize food security even in the high per capita income states, the issue becomes an urgent one that requires serious investigation. The agrarian crisis in Punjab is a reflection of a deeper economic crisis that affect ecological and livelihood security of the masses in Punjab. Against this backdrop, the issue of food security holds critical relevance and would make an ideal case study for exploring the issue of Food Security in India.

The fundamental aim of the book is to explore the idea of ‘hunger amidst plenty’, for Punjab in the light of Sen’s E&D thesis and the contemporary understanding of the concept of food security during 1990–2015, the MDG era. The year 2015 is an appropriate year for an inter-country comparison of the 15-year progress in tackling the Millennium Development Goals. This year also marks the beginning of the new post-2015 Sustainable Development Agenda (FAO, 2015b).

The following are the broad issues that have been addressed in the subsequent chapters:

i. The level of food security at the all-India level that involves assessing India’s position at the global level and her progress in tackling the problem of hunger in the light of the United Nation’s Landmark Commitments to tackle hunger especially during the period 1990–2015, the Millennium Development Goals Era.

ii. The position of Punjab’s economy within India from the point of view of ‘Present Food Security’ as defined by the conventional requirements of ‘Availability’ and ‘Economic and Physical Access’.

iii. The ‘nutritional security’ of the people of the state with a special emphasis on the anthropometric indices of the more vulnerable groups like women, children, adolescent girls, pregnant and lactating mothers, backward classes, etc.

iv. The state provisioning of the social determinants like health infrastructure, drinking water, sanitation, etc; that are critical for ‘absorption’ of food and have important implications for nutritional security and health of the people of Punjab.
v. The future sustenance or the ‘potential’ food security in Punjab involving an investigation into the ecological health of the critical natural resources—water and soil in the state.

vi. The Indian government’s policy regarding the issue of the ‘Right to Food’ with a special focus on the National Food Security Act (NFSA), 2013 that marks a paradigm shift in the approach to food security. This also entails a need to focus on the various central and state policies and schemes being run in Punjab that impact the various dimensions of food security—availability, physical and economic access, absorption or nutritional security, and sustainability.

In order to analyse the various manifestations of chronic and hidden hunger in Punjab, we begin by looking at India’s position at the global level with regards to the various indicators and then gradually come down to inter-state comparisons followed by the aggregate state-level data and the inter-district variations in the state. Wherever required the variations arising out of place of residence (urban/rural), gender, space, and age are specified. A sincere attempt has been made to focus on food security at micro levels like the household/individual level, wherever possible.

This book is divided into four sections. The first section is general and deals with national aggregates while the rest of the three sections are purely devoted to Punjab, with a focus on the underlying factors that affect food ‘availability’, ‘access’ and ‘absorption’ and ‘sustainability’.

The first chapter introduces the concept of food security and the historical evolution of the understanding and the importance of the issue at the global level. Further it describes the definitions based on past and contemporary ideas of the concept along with the dimensions of food security. It also introduces the composition of the people who constitute the group of the food insecure, followed by why investing in human resources is the most important investment.

The second chapter is a general one. It investigates food security in India by assessing India’s position at the global level and her progress in tackling the problem of hunger and malnutrition with reference to the targets set by the two major UN commitments to tackle hunger—the Rome Declaration at the World Food Summit, 1996 and the Millennium Development Goals (MDGs), 2000. It also provides the international ranking of the countries in terms of the Global Hunger Index, a tool
designed by the International Food Policy Research Institute to measure and track global hunger. In the end a brief summary of India’s nutrition profile is presented along with an assessment of India’s progress with regards to the MDGs and their intricate relationship with deprivations of all kinds.

From the third chapter onwards, the focus is mainly on Punjab. Food security in Punjab is investigated in this and the subsequent chapters, by investigating the various dimensions of present and potential food security based on the historical evolution of the concept. Consequently, after briefly introducing the administrative structure and the resource endowments of Punjab, we take a brief look at the macroeconomic indicators that affect the present food security measured in terms of ‘availability’.

The fourth chapter addresses the issue of ‘livelihood security’ or ‘access’ as measured by indicators like depth of hunger, employment, poverty, etc. The first part of the chapter is devoted to measuring the two basic aspects of access at the household level—physical and economic. The second part of the chapter investigates the issue of discriminatory access in Punjab at the individual level, which involves issues like caste, gender, etc. They are reflected in indicators like literacy differentials, wage differentials, sex ratio, land rights to women, etc.

The issue of ‘absorption of food’ or nutritional security is investigated in detail by dividing it over two chapters, fifth and sixth. In Chapter 5, the aim is to analyse the various manifestations of chronic and hidden hunger in Punjab and the underlying factors that affect food absorption or nutritional security, especially amongst the vulnerable sections of the people of Punjab. In this, maternal health care and child health care are of utmost importance for the nutritional well-being and productivities of the future generations. Hence a presentation of the key demographic indicators of health is followed by a focus on the extent of under nutrition among children and women in Punjab. Food absorption problems manifest in the form of an unhealthy population consisting of malnourished adults with low body mass index and suffering from diseases. The chapter ends with an investigation of the nutritional status of adults in Punjab in terms of Body Mass Index to measure the chronic energy deficiency, followed by a look at the micronutrient deficiencies at the state and district level.
The sixth chapter takes a look at the role of environmental factors in determining nutritional security in general. The aim is to bring about the impact of a lack of these basic facilities in a developing and a primarily rural economy. The next part of the chapter provides data on the social determinants of health. Hence it makes an attempt to investigate the extent of access of the people to these environmental parameters. The focus is on the infrastructure in the state, that is related to education, health, drinking water supply, and sanitation and hygiene practices.

The seventh chapter is devoted to ‘potential’ food security or the issue of ‘Sustainability’. A state producing sufficient food at present may not be able to produce the same amount in the future. This can be investigated in terms of indicators that reflect the quality of the natural resource base at the state level and the population pressure on it. After providing a basic understanding about the issue of sustainability in the modern times the chapter presents the global idea of ‘Future Sustenance’ and the initiatives required for achieving it. This is followed by a discussion on the unsustainable growth process brought in by the Green Revolution technology and investigating the ecological foundations of agriculture in Punjab, in order to get an idea about the potential availability and access.

The eighth chapter addresses the public policy in India to tackle the problem of hunger and malnutrition. The problem of food insecurity needs a multipronged approach covering all the dimensions—availability, access, absorption, and sustainability—with a focus on inclusive growth; employment generation; women’s empowerment; provision of education, health, sanitation, drinking, water and hygiene; direct nutritional interventions for the more vulnerable sections of the population. After presenting an understanding of the importance, features, new developments, and shortcomings of the PDS and the National Food Security Act (NFSA), 2013, the chapter looks at wide-ranging government programmes that directly or indirectly affect food security in the state.

The last chapter provides the current statistics related to the post-2015 period. All the indicators of the SDGs that reflect and impact the hunger dimensions of India/Punjab have been explored up to the year 2019. The data for the year 2020 has been purposely not been used, it being a pandemic year. In the end the chapter briefly summarizes the results to provide a verdict on the level of present and potential food security in Punjab in terms of all its major dimensions—availability, access, absorption, and
sustainability. Thereafter an attempt has been made to provide recommendations for the future development of human resource in the state of Punjab.

Sources: For international comparisons and assessment of India’s global position and progress the analysis is based on the statistics provided by the United Nations Organisations, mainly the Food and Agricultural Organisation. Besides this the international comparisons are also based on the most recent joint data base provided by the UNICEF, WHO, and World Bank. The data provided by the UN organizations is basically focused on tracking hunger globally in relation to the UN targets and commitments particularly in the form of the Millennium Development Goals.

In addition to this there is an attempt to utilise the latest IFPRI’s reports on Global Hunger Index. These reports have been published jointly by the International Food Policy Research Institute (IFPRI), Welthungerlife and Concern Worldwide. They are used for getting an idea about India’s progress in handling the problem of undernourishment measured in terms of an index. It also helps to assess India’s position at the international level.


Limitations and Scope: The focus is on agriculture-related problems and on availability, access absorption, and sustenance problems in rural Punjab. This is understandable as almost more than two-thirds of the population in the state is rural and agriculture is still the prime-mover in the economy. In any case the urban hunger and poverty is a spill over of rural poverty and the agrarian crisis. Wherever possible the rural-urban and gender-based disparities have been highlighted.
Traditionally, at the country level, food security has been measured in terms of per capita net availability of food grains per annum for which data has been provided at the national level. In a state, however, the physical availability also depends on storage and transport infrastructure, and market integration within the country which is difficult to estimate. Hence for the state, net production is used to estimate availability (Ministry of Agriculture and Farmer’s Welfare, 2017). Generally net production of food grains is taken as a proxy for net availability. Food production is the base for food security since it is the key determinant of availability. Using food grains as a proxy for food is reasonable enough in the context of developing countries like India, where food grains account for a large share of food intake.

There are limitations with the data used. The most recent NFHS-4 survey, RSOC, 2014, and DLHS-4 survey results have been extensively used. However due to differences in samples and their sizes they may not be strictly comparable. Even the most recent government reports rely on this data. An attempt has been made to use the values of variables provided by the latest rounds of the surveys. For the data on workforce, livelihoods, and demographic characteristics, the most recent available data is that of the census 2011 which is also quoted in the recent Economic Survey and Statistical Abstracts of Punjab.

‘Climate change’ and ‘globalization’ are two extremely important developments of modern times that have affected food security directly or indirectly. While investigating the various dimensions of food security, these two very important factors have not been addressed. Each of these issues requires an in-depth elaborate study, and can form the subject matter of another book.

Harpreet Kaur Narang
Acknowledgements

As a small child, I have some very nostalgic memories of travelling to Punjab during the 1970s. My parents would often take me to visit The Golden Temple in Amritsar by train. The lush green fields and the prosperity made it a much-awaited holiday. More than a decade later, my visit to Punjab, as an adult, came as a rude shock to me as I saw so many people begging in the city. There was an inevitable increase in poverty around us. The shattered image of a prosperous Punjab came as a big disappointment and a source of confusion.

Nearly two decades later, Dr Baldev Singh Shergill, Assistant Professor, Guru Kashi University in Talwandi Sabo, invited me along with a group of students and teachers from Delhi University to investigate the issue of rural distress in the villages of Kamallu and Bhagwinder, in the district of Bhatinda. The visit to a farmer household where the farmer had committed suicide had a deep impact on me. This field survey was a real eye-opener as it introduced me to the ground realities of a village economy of Punjab. My students were in tears by the end of the second day of the survey. It inspired me to work on the issues facing the marginalized sections of Punjab.

Ever since then, I started exploring the literature on Punjab economy. Most of it was journalistic in nature. A lot seems to have been written about the declining state gross domestic product, agrarian crisis, unsustainable soils and lowering water tables, reverse tenancy, poor investment opportunities, increasing unemployment, and the like. However, nothing was available from the point of view of food security, except some work on the ‘aspects of availability and distribution’ of food grains. On mentioning the idea of working on ‘food insecurity in Punjab’, the first reaction that I got from everybody was: ‘What! Food Insecurity in Punjab? Are you sure? Punjab feeds the rest of the nation!’ Hunger and Malnutrition in Punjab seemed unthinkable. Piles of food stocks rotting in and outside the FCI godowns on the one hand, and glaring poverty and hunger on the
other seemed to co-exist with so much ease. It was precisely this paradox that motivated me to start investigating the issue.

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