

# Horticulture and Livelihood Security

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# Horticulture and Livelihood Security

*Editors*

**Prem Nath  
P.B. Gaddagimath**

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*Dedicated to  
One Billion People  
Suffering From  
Hunger And Malnutrition  
Across The Globe*



## FOREWORD

I find myself fortunate to have the opportunity to live and experience the working life of the farmers and the farming in Kansas (USA), Nigeria (Africa), Saudi Arabia and Yemen (Middle East), Italy (Europe) and India, Myanmar, and Thailand (Asia). It was further strengthened by visits to farmers in another about 100 countries. Day after day and month after month and even years, it made me to realize that community culture, language and farming in each state, country and continent are different from each other but some things are common and that they are all doing farming, they are growing food and they all doing for the livelihood of their families, neighbors and communities near and far.

Further, my assignment with the global FAO's Special Programme on Food Security for Low-Income Food Deficit Countries launched during 1994 gave deeper insight into the important dimension of livelihood i.e. food security. It was not only the question of making adequate food available but make it available all the time. But at that time more than 800 million people were suffering from hunger and malnutrition, evidently they had no access to food and now the number of those hungry people has increased to one billion, in spite of efforts to mitigate it. The question is how to access the food to those who have no capacity to have it.

The farmers have worked to their capacity within the resources available to produce food, and now it is the turn of the governance of countries to enhance the capacity of the people to access the food for their livelihood. The answer is, increased employment and income generation.

Thus, livelihood has different dimensions and facets, but agriculture and food buying capacity are major components because food is the basic. In the present time with modern life and living, food has emerged with important components like adequacy, nutrition and health requirements which have been designated as food security, nutrition security and health security. Hence, horticulture is a serious stake holder as described in the present publication.

With its mandate on food and nutrition security, the Dr. Prem Nath Agricultural Science Foundation (PNASF), Bangalore has endeavored to invite the national and international well-known authors to contribute to this book on this subject. Grateful thanks are due to authors of each paper presented in this book for their voluntary contribution. It is expected that the present publication will enlighten the readers and disseminate the message keeping in line with the title and theme of the book and subject.

The editors of this book have done tremendous job in preparing the blueprint of this book, in organizing the papers and in editing them, Ms.

Vanita N. Shetty of the PNASF, Bangalore spent long hours to prepare the whole manuscript in an excellent manner.

Acknowledgement is due to the Scientific Publishers (India), Jodhpur for their best efforts in quality printing of this book in a timely manner.

Lastly, many thanks to those who have contributed in some form or other in the preparation of this book, but their name does not appear in this publication.

September 25, 2010



**Prem Nath**

Chairman, PNASF  
Former Asst. Director General, FAO  
Chairperson, Executive Council, VEGINET



## ABOUT THE EDITORS



**Dr. Prem Nath** is the founder of the PNAS Foundation established in 2000. Dr. Nath obtained his Ph.D. degree in Horticulture from the Kansas State University in U.S.A. during 1962. The same year, he returned to India and served at the Indian Agricultural Research Institute (New Delhi), University of Udaipur (Rajasthan), Indian Institute of Horticultural Research (Bangalore) for about 15 years before joining the Food and Agriculture Organization of the United Nations (FAO) during 1976 and served in different capacities in a number of countries, like Indonesia, Nigeria, Saudi Arabia, Yemen Arab Republic, Italy, Myanmar, and Thailand for about 25 years, with the last posting as FAO Assistant Director-General and Regional Representative for Asia and the Pacific and headed FAO Regional Office in Bangkok, Thailand from where he retired in 2000. Even after his retirement with the FAO, Dr. Nath continues his activities on issues of food and agriculture/horticulture through the Dr. Prem Nath Agricultural Science Foundation (PNASF) to which he has donated his life-savings.

The vegetable varieties developed by him and his colleagues are still popular in India and abroad. Dr. Nath made significant achievements in developing a number of vegetable varieties viz Arka Suryamakhi in pumpkin, Arka Sheel and Arka Kusumkar in brinjal, Arka Manik and Arka Jyoti in watermelon, Arka Harit in bitter gourd, Arka Rajhans and Arka Jeet in musk melon, and Arka Tinda in roundmelon in India. He guided researches on cucurbits for a number of M.Sc and PhD students.

In 1965, Dr. Nath authored the book entitled ‘Cucurbitaceous Crops in Northern India’ published by the University of Udaipur. Among several publications, the book on ‘Vegetable Crops for the Tropical Region’ published by the Indian Council for Agricultural Research (ICAR), New Delhi, in 1976 and 1987 and reprinted in 1994 and 2004 are still popular among the Agricultural Universities in India. The book entitled “Food Security and Vegetables – A Global Perspective” co-edited by him and published by the PNASF in 2004 and written by the well-known national and international author’s acclaimed high recognition nationally and world-wide. He is also a co-author of the book –“State of the Indian Farmer: A Millennium Study” published in 2004 by the Ministry of Agriculture and Cooperation, Government of India. He is the senior author of the book entitled “Vegetable Crops-Improvement and Production” published by PNASF, Bangalore during 2008; co-author of the book entitled “Foods and Nutrition” published by PNASF, Bangalore and Studium Press, New Delhi during 2009. Dr. Nath has hundreds of publications and technical reports published in India and abroad.

Dr. Prem Nath has the credit of establishing horticultural/agricultural research institutes in India, Nigeria, Saudi Arabia and Yemen and of guiding

horticulture research programmes in Africa, near East, Asia and East European countries. In 1994, he was responsible for launching successfully the FAO's Special Programme on Food Security for Low-Income Food Deficit Countries (LIFDC's) across the globe.

Presently, Dr. Prem Nath is the Chairman of the Dr. Prem Nath Agricultural Science Foundation (PNASF), Bangalore – 560 094. Also, he is the Chairperson of the Vegetable Science International Network (VEGINET), Bangalore. As a Chairman of the Organizing Council of the International Conference on Vegetables (ICV-2002), he successfully organized the Conference held during November 2002 at Bangalore. He organized FAO/PNASF International Workshop on Urban and Peri-Urban Agriculture for Asian Countries during June 29 to July 2, 2005 in Bangalore, India; and International Conference on Horticulture (ICH-2009) held during November 9-12, 2009, Bangalore, India; where about 750 delegates from about 40 countries participated. He served as the Chairman of the WTO Cell, Government of Karnataka and as the member of the various committees in food and agriculture at the state, national and international levels. He is the Fellow of a number of national and international professional societies/ academy in Horticulture and Agriculture.



**Pulakeshi Basayya Gaddagimath** is a post graduate in Organic Chemistry from Karnataka University, Dharwad in 1978 and served as a lecturer in Kittle Science College, Dharwad till 1982. His interest in Mass Communication made him to leave the teaching job and join post graduate course in Mass Communication and Journalism in 1982 as a regular student and graduated from Karnataka University Dharwad in 1984. He had been a scholarly student through out his career.

During his post graduation in Mass communication and Journalism, he served many national news papers until he joined as Jr. Scientific Officer, at Directorate of Oilseed Research, Hyderabad in 1985. He joined the Indian Institute of Horticultural Research, Bengaluru in 1989 and is continuing his services till to date as Information and Publication Officer.

A man who has extensively traveled and well read in various fields, is bestowed with excellent, both written and spoken communication skills. As a media person he has anchored /conducted more than 40 T.V. programmes and live programmes on Doordarshan on various aspects of agriculture. He was also a consultant to Dept. of Horticulture, and Water Resources Dept., Govt. of Karnataka for developing scripts for documentaries and interactive CDs and has scripted more than 10 documentaries on rural water supply and sanitation. Apart from a good number of official publications at IIHR, Bengaluru and DOR, Hyderabad, he has authored two books, edited four books (two international), published three books and written many technical and popular papers.

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**I**  
**IMPACT OF HORTICULTURE ON**  
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