



Chairman, PNASF Speaks

Since both human being and food are going to stay on earth for all the time, it is important to understand about each of them and the vital relationship between them. It is true that each human being is working directly or indirectly to produce food, obtain food and consume food. Of course, farmers are producing food; intermediaries are processing and marketing it, whereas all consumers from every walk of life are trying to procure it.

As soon as a child is born, he or she inherits the right to food but both the government and the public have to work together to fulfill the essentials of the right to food and to attain food and nutrition security for all. In spite of this realization, more than a billion people are suffering from hunger and malnutrition worldwide (FAO, 2009), so much so that every fourth child will be malnourished in 2020 in the developing world (IFPRI, 1999). In India alone about 42 percent of the children are malnourished. What would be the future of the country? Who is to be blamed, government or public? I think both are responsible. The food security is difficult to be attained when poverty prevails in the households. Among other factors, access to food remains a dominating force in the frame of food security, where economic accessibility plays an important role (Nath, 2002). People are hungry because they have no earnings which can be mitigated by providing employment to them. The thumb rule is create employment opportunities for those who don't have; in other words, each one has to earn job and earn food which is not free.

In this process, we need to learn whether we have enough food for all, whether it is available all the time, whether food is available to every household, and whether the food available is nutritious and safe.

There is lot to learn about food itself which is not easy at all. The first thing to learn, whether the nation has enough food for all - locally produced or imported. Secondly, whether we have all kinds of food to make healthy diet e.g. carbohydrates, proteins, fats, fibers, vitamins, minerals etc.? We have varieties of food available; but we forget that we have to eat healthy food for maintenance and growth of the body. We must know what to eat, how much to eat or when to eat towards better human health? Thirdly, do we have the knowledge on the sources of food? Fourthly, what essential elements they contain to constitute healthy food. Fifthly, we need to learn the composition which will make healthy diet.

All these constitute towards a right approach towards securing food and nutritional security.

Prem Nath
 Chairman, PNASF

Events

RELEASE CEREMONY OF PNASF PUBLICATION SERIES, THE BASICS OF HUMAN CIVILIZATION-FOOD, AGRICULTURE AND HUMANITY; VOLUME-II: FOOD AND VOLUME-III: AGRICULTURE



Dr. Prem Nath receiving His Excellency Dr. Hans Raj Bhardwaj in the convention hall

The Ceremony for the release of **Volume-II: Food** and **Volume-III: Agriculture** of the publication series, **The Basics of Human Civilization - Food, Agriculture and Humanity** prepared by PNASF and published by New India Publishing Agency (NIPA) and Scientific Publishers (India) was organized successfully on April 19, 2014 at Raj Bhawan, Bangalore. His Excellency the Governor of Karnataka, **Dr. Hans Raj Bhardwaj**, Chief Guest of the ceremony released the books and **Hon. Shri T.B. Jayachandra**, Minister for Law, Justice and Human Rights; Parliamentary Affairs and Legislation; and Animal Husbandry, Government of Karnataka and **Hon. Shri M.V. Rajasekharan**, former Minister of State for Planning, Government of India, New Delhi graced the function as Guests of Honour.

The lead scientists of agriculture/horticulture universities and research institutes and senior Government officials of Karnataka were the invitees. The special invitees were Dr. P. V. Shenoj, former Special Secretary, Government of India; Dr. G. K. Veeresh,



Book Release Ceremony hosted by PNASF Board of Trustee, Ms. Shyamla Nath

Events

former Vice Chancellor, UAS, Bangalore; Dr. P.G. Chengappa, former Vice Chancellor, UAS, Bangalore; Dr. R. Dwarakinath, Chairman, AME Foundation, Bangalore; Dr. S. Bisalaiah, former Vice Chancellor UAS, Bangalore; Dr. M. Mahadevappa, former Chairman, ASRB and former Vice Chancellor UAS, Dharwad; Prof. R.S. Deshpande, former Director, ISEC, Bangalore; Mr. N.S. Megharik (IPS), Karnataka; Dr. K.P. Vasanth Shetty, Director, Indo-American Hybrid Seeds(India), Bangalore; Mr. V. K. Abraham, Director, Institute of Plantation & Horticulture Management, Bangalore; Dr. C.P.A. Iyer, former Director, Central Institute Horticulture, Lucknow; Dr. P. Parvatha Reddy, former Director, IIHR, Bangalore; Dr. N. B. Gaddagimath, M/s Sarpan

Agri Horticultural Research Centre, Dharwad; Dr. R.B. Gaddagimath, Gulbarga University, Gulbarga; Dr. M. Seenappa, Former UNICEF Official, and other dignitaries.

On behalf of the PNASF, Dr. K.R.M. Swamy welcomed the Chief Guest, Guests of Honor and all invitees.



Welcoming Guests by PNASF, Dr. K.R.M. Swamy



Keynote Address by Chairman, PNASF, Dr. Prem Nath

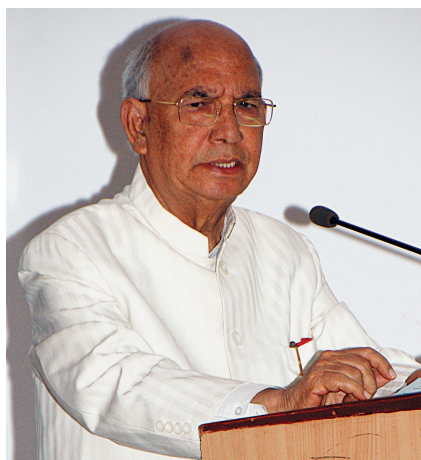
In his Keynote address, Dr. Prem Nath welcomed the Chief Guest and Guests of Honour on the dais, the dignitaries and all invitees in the audience, explained the mission, objectives and contents of the two Volumes of the book. Further, he duly acknowledged the contribution of authors, editors and reviewers in fulfilling the mission of these publications. The details of his statement appear at the end of this message.

Addressing the distinguished audience after releasing books "The Basics of Human Civilization - Food, Agriculture and Humanity" series Volume-II: Food and Volume-III: Agriculture, His Excellency Dr. Hans Raj Bhardwaj highlighted that, "India should keenly monitor both agricultural production and population growth so that food security is fully protected. Speaking after releasing books on "The Basics of Human Civilization: Food, Agriculture and Humanity" series here on April 19, 2014, the Governor stressed the need to use innovative technology to increase food production and



Audience during the Book Release Ceremony Function

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His Excellency the Governor of Karnataka, Dr. Hans Raj Bhardwaj delivering Chief Guest Speech

treat it as “top priority.” India could make progress in the early years of Independence because of the innovations of dedicated agricultural scientists, he said. He warned that no other country would come to the rescue of India in case of food scarcity and hence we should be extremely alert with regard to food production. He said

more youngsters should take to agriculture since it is now rewarding and has marketing potential, unlike earlier.

The Chief Guest highlighted the contribution of PNASF in the area of food and agriculture particularly on food and nutrition security and expressed appreciation to authors and editors for their valuable efforts in bringing out these publications.

Shri M.V. Rajasekharan said that, “It is estimated that we need to produce 60% more food globally and 77% more in developing nations in particular, by 2050AD to meet the growing demand for food. But, dwindling land and water resources, threats posed by



Hon. Shri M.V. Rajasekharan delivering speech

climate change and natural disasters, declining investment in agriculture, stagnation of productivity, high post-harvest losses, and wastage of food during transit, storage and consumption are limiting the efforts to produce and supply adequate food for ever growing population. “I am proud to inform here that Govt. of Karnataka is the first state in the country to have separate budget for agriculture. Apart from this the govt. has also implemented many food security schemes like mid-day meals in schools etc. The Department of Horticulture is working out models for Urban and peri-urban horticultural production in the light of ever increasing urbanization and shrinking arable land resources to ensure the urban population with adequate quantity of various produces.”

Appreciating the efforts of PNASF, he said that these publications will be of immense use to professionals, policy makers, teachers and students and the public in general and

congratulate Dr. P. N. Agricultural Science Foundation, Bangalore and particularly Dr. Prem Nath for his leadership and service to society. Concluding his address he thanked the organizers for inviting him to participate in this book release ceremony.

Shri T.B. Jayachandra quoting the words of Pandit Jawaharlal Nehru, the then Prime Minister of India said that “Of all the things before us, agriculture comes first” Agriculture was and is one of the largest employment sectors in the world, especially in India. More number of workers is employed in agriculture as compared to other sectors. In India, 70 per cent earn their livelihood through agriculture.



Hon. Shri T.B. Jayachandra delivering speech

To feed the large population we require millions of tonnes of food grain. It is estimated that India would require 343.0 million tons of food grains by 2020 to feed the entire population. There are only two ways to increase the productivity- by increasing the land under agriculture and by using scientific methods of agriculture. As we cannot increase land under agriculture as it is saturated, so we should head toward scientific method to boost the productivity.

Shri Jayachandra expressed that these volumes will be of immense use to the policy makers, researchers, teachers, farmers and other stakeholders. He acknowledged the useful contribution of Dr. P.N. Agricultural Science Foundation particularly Dr. Prem Nath for his leadership. He congratulated the authors, editors and publishers for their best efforts in preparing these Volumes of the book.



Release of book Volume-II: Food by the Chief Guest and Dignitaries

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Release of book Volume-III: Agriculture by the Chief Guest & Dignitaries



Memento presented to H. E. Governor of Karnataka by Dr. Prem Nath



Memento presented to Shri T.B. Jayachandra by Dr. Prem Nath



Memento presented to Shri M.V. Rajasekharan by Dr. Prem Nath

The Book-Release Ceremony was covered by the television and the newspaper media.

The support extended by the Board of Trustees is praiseworthy. The trustee Ms. Shyamla Nath participated actively and pioneered the minute-to-minute programme of the function in the dedicated manner.



Some Authors of the books along with Dignitaries



PNASF Team along with Dignitaries

The moral strength received from PNASF/TAC members abroad and dedicated efforts on the ground by the Bangalore-based TAC members have demonstrated the contribution of PNASF in the form of valuable book and established the recognition of PNASF as one of the premier agricultural institution.

A warm vote of thanks was extended by the PNASF to dignitaries on and off the dais, all invitees, press media, television and radio and the Raj Bhawan officials who extended all support to the event.



Vote of Thanks by PNASF, Mr. P.B. Gaddagimath

Key Note Address - About the Book by Dr. Prem Nath

His Excellency the Governor of Karnataka, Dr. Hans Raj Bhardwaj Ji,

Honourable Shri T.B. Jayachandra Ji, Minister for Law, Justice and Human Rights; Parliamentary Affairs and Legislation; and Animal Husbandry, Government of Karnataka

Honourable Shri M. V. Rajasekharan Ji, Former Minister of State for Planning, Government of India,

Dignitaries in the audience

- Dr. P. V. Shenoi, Former Special Secretary, Government of India, Bangalore
- Dr. G.K. Veeresh, Former Vice Chancellor, UAS, Bangalore
- Dr. R. Dwarakinath, Chairman, AME Foundation, Bangalore
- Dr. S. Bisalaiah, Former Vice Chancellor UAS, Bangalore
- Prof. R.S. Deshpande, former Director, ISEC, Bangalore
- Dr. M. Mahadevappa, Former Chairman, ASRB, former Vice Chancellor UAS, Dharwad
- Mr. N.S. Megharik (IPS), Karnataka
- Dr. K.P. Vasanth Shetty, Indo American Hybrid Seeds (India) Bangalore

And other dignitaries whose names are not mentioned.

Ladies and Gentlemen!

On behalf of the Dr. Prem Nath Agricultural Science Foundation, Bangalore, I consider it an honour and privilege to welcome you heartily to this event hosted at the Raj Bhawan with the blessings of His Excellency, the Governor of Karnataka.

Food is basic to human being and agriculture is the catalyst between the two which is basically supported by natural resources. The human being is entirely dependent on food and food is fully dependent on agriculture and humanity. Even though food, agriculture and humanity have their own entity; they are inseparable for the survival and existence of each other. Hence, the three pillars of food, agriculture and humanity forming a triangle symbolize the roots of human civilization.

The PNASF series of publications focuses on the strong bondage among and between food, agriculture and humanity in five volumes. Volume-I: Present Scenario was published last year; Vol. II on Food and Vol. III on Agriculture are due for release this evening, and Vol. IV on Humanity and Vol. V on Expectations are under preparation.

These volumes attempt on highlighting issues on food, agriculture and humanity emerging in the present and future context in the area of agriculture education, research and technology, extension, development and policy which have direct or indirect impact on food production and availability.

The challenges and opportunities in food and agriculture illustrated in the present two volumes flag out the relevant issues and suggest measures at educational, research, development and policy levels to be undertaken to improve productivity and availability of food.

At the present, more than a billion people are suffering from hunger and malnutrition, indicating every sixth person in the world is suffering from this ailment. Again, it is a coincidence that every sixth person on this earth is an Indian. Have we made satisfactory

efforts to mitigate man-made calamity i.e. food and nutrition insecurity? It can be done, provided we all put in our sincere efforts.

I am pleased to mention that these books to be released today are written by well-known national and international authors. **Volume-II: Food** has 28 articles written by 23 well-known authors whereas **Volume-III: Agriculture** has 28 articles written by 26 well-known authors.

I welcome and congratulate those authors who are present here for **Volume-II: Food**: Dr. S. Bisalaiah, Dr. K. R. M. Swamy, Dr. C.P.A. Iyer, Dr. B. S. V. Reddy, Mrs. Sana Thousia, Dr. Mohammed Ilyas S.P., Prof. R. S. Deshpande, Dr. Marashetty Seenappa, Dr. B.S Prabhakar. For **Volume-III: Agriculture**: Dr. R. Dwarakinath, Dr. P. Parvatha Reddy, Prof. P.G. Chengappa, Mr. V. K. Abraham, Dr. Elumalai Kannan, Prof. K V Peter (Sons) and Dr. K.R.M. Swamy.

Of course, I had an opportunity to contribute ten articles to Volume-II: Food and eight articles to Volume-III: Agriculture. Other authors, from different parts of India and abroad have extended their best wishes on this occasion.

We have received valuable messages from our leaders for **Vol. : II- Food**-H.E. Governor, Dr. Hans Raj Bhardwaj, Government of Karnataka; Mr. Hiroyuki Konuma, Assistant Director General FAO; Prof. Jules Janick, James Troop Distinguished Professor in Horticulture, USA; Dr. N.K. Krishna Kumar, Deputy Director General (Horticulture), ICAR, New Delhi; and for **Vol.: III-Agriculture**-Hon Shri T.B. Jayachandra, Hon. Minister for Law, Justice and Human Rights; Parliamentary Affairs and Legislation; and Animal Husbandry, Government of Karnataka; Hon Shri. M.V. Rajasekharan, former Union Minister of State for Planning, Government of India, Bangalore; Dr. Jacqueline d'A Hughes, Deputy Director General-Research, AVRDC-The World Vegetable Center, Taiwan; Dr. R. Dwarakinath, Chairman, AME Foundation, Bangalore; Prof. K.V. Peter, former Vice-Chancellor, Kerala Agricultural University, Kerala; Prof. P.G. Chengappa, National Professor, ICAR and Former Vice Chancellor, UAS, Bangalore; for their encouragement and message of wisdom, which appear in the book.

In preparing the blueprint and in reviewing and in editing, the Senior Scientific Councilors and Technical Advisory Council members, Dr. S. Bisalaiah, Dr. R. Dwarakinath, Dr. G. K. Veeresh, Dr. M. Mahadevappa, Dr. P.G. Chengappa, Prof. R.S. Deshpande, Dr. Anupam Varma, and Dr. C.P.A. Iyer, Dr. Prem Nath, Dr. O.P. Dutta, Dr. K.R.M. Swamy, Dr. B.S. Prabhakar and Mr. P.B. Gaddagimath have made valuable contribution and assisted me greatly with their expertise and experience, for which PNASF is thankful. Mrs. Vanita Vinay and Mrs. Divya Shree C. of the PNASF spent long hours to process the whole manuscript in an excellent manner.

Acknowledgement is due to the New India Publishing Agency (NIPA), New Delhi and Scientific Publishers (SP), Jodhpur for their best efforts in quality printing of this book in a timely manner.

It is expected that the present publication will enlighten the readers and disseminate the message in line with the title and theme of the book and subject.

Our Chief Guest, respected dignitaries on the dais, distinguished guests, Ladies and Gentlemen and Press Media, and most of all the Staff of Raj Bhavan, on behalf of the Dr. Prem Nath Agricultural Science Foundation and its collaborators, I thank you immensely for your kind support and active participation.

Jai Hind! Jai Karnataka!

Events/Research and Development support

Award to PNASF - "BHARAT RATNA MOTHER TERESA GOLD MEDAL AWARD -2014"

Dr. Prem Nath was awarded with "Bharat Ratna Mother Teresa Gold Medal Award -2014" in the form of mementos and certificate of merit by the Institution-Global Economic Progress and Research Association based in Chennai for his outstanding contribution in research, development and publications on food and agriculture on the occasion of "17th International Unity Conference on National Economic Growth Through Individual Contribution" held in Bangalore on March 08, 2014 at Hotel CITADEL, Bangalore. The guests of honour were Hon. Shri M. V. Rajasekharan, *former* Union Minister of State for Planning, Government of India; Dr. K. Narayana Gowda, Vice Chancellor, University of Agricultural Sciences (UAS), GKVK, Bangalore and Padma Shri Dr. Y.S. Rajan, ISRO. More than 100 participants were present.

COURTESY VISIT OF THE DIRECTOR GENERAL, AVRDC-THE WORLD VEGETABLE CENTER, TAIWAN



Dr. J.D.H. Keatinge, Dr. Warwick Easdown and Dr. Hemant Nitturkar

Dr. J.D.H. Keatinge, Director General, AVRDC and his team Dr. Warwick Easdown, Regional Director of South Asia and Dr. Hemant Nitturkar, Project Development Officer visited ailing Dr. Prem Nath at his residence on February 11, 2014.

Dr. Keatinge recollected his first visit to Bangalore when he delivered a memorial lecture on behalf of Dr. William Dar,

Director General, ICRISAT, Hyderabad during the first International Conference on Vegetables (ICV-2002) organized by PNASF in November 2002.

During the discussion both covered the scenario of vegetable development in Asia with particular reference to India. A detailed discussion was held on the upcoming "SEAVEG 2014: Families, Farms, Food - Sustaining Small-Scale Vegetable Production and Marketing Systems for Food and Nutrition Security" scheduled February 25-27, 2014 at Hotel Centara Grand at Central Plaza Ladprao, Bangkok, Thailand. Dr. Prem Nath served as the chairman of the SEAVEG-2014 Coordination Committee. It was informed that Dr. Keatinge was nominated for the PNASF International Award for 2013 for Leadership in Promotion of Vegetables in Asia to be presented on this occasion. Dr. Prem Nath congratulated him in advance for this outstanding achievement.

Dr. Nath thanked Dr. Keatinge Dr. Easdown and Dr. Nitturkar for their courtesy discussion and visit.

COURTESY CALL UPON HON. MINISTER SHRI T.B. JAYACHANDRA



*Honorable
Shri. T.B. Jayachandra*

Dr. Prem Nath made a courtesy call upon Hon. Shri. T.B. Jayachandra, Minister for Law, Justice and Human Rights; Parliamentary Affairs and Legislation; and Animal Husbandry, Government of Karnataka on June 07, 2014. He took the opportunity to present the Hon. Minister with the photo and news paper documents of the earlier PNASF-Book Release Ceremony where he was the Guest of Honor organized at Raj Bhawan, Bangalore. The Minister was pleased with the contribution and function organized by the PNASF.

The Honorable Minister appreciated the activities of the PNASF on food and nutrition security and extended his support.

RESEARCH AND DEVELOPMENT SUPPORT

PNASF/SUN/WD-SHG/2005: PROMOTION OF RURAL WOMEN SELF HELP GROUP THROUGH DAIRY DEVELOPMENT PROJECT

Since the project had completed more than five years, the PNASF Board of Management on the recommendation of the PNASF TAC decided to handover the project to beneficiaries. The event will take place shortly with transfer of cows and on completion of paper documentation.

PNASF/2005/BIOLOGICAL SCIENCE AND NUTRITION PROJECT

The booklets on nutrition of school children are being prepared by the lead scientists for free distribution among the students of selected schools.

International Cooperation

INTERNATIONAL COOPERATION

SEAVEG 2014: FAMILIES, FARMS, FOOD - SUSTAINING SMALL-SCALE VEGETABLE PRODUCTION AND MARKETING SYSTEMS FOR FOOD AND NUTRITION SECURITY



Dignitaries at the dais during SEAVEG-2014

The Regional Symposium on “**Sustaining Small Scale Vegetables and Marketing Systems for Food and Nutrition**” was held from 25th -27th February 2014 at Hotel Centara Grand at Central Plaza Ladprao, Bangkok, Thailand. The symposium was organized by Department of Agriculture in collaboration with AVRDC – The World Vegetable Center, the Food and Agriculture Organization of the United Nations (FAO), Kasetsart University (KU), the Horticultural Science Society of Thailand (HSST), the Vegetable Science International Network (VEGINET) and ASEAN-AVRDC Regional Network on Vegetable Research and Development (AARNET). A total of 203 participants from 23 countries attended SEAVEG-2014 and 63 papers were presented in the symposium. Dr. Dumrong Jirasutast, Director General, Department of Agriculture, Thailand, chaired the Inaugural Session. Dr. Dumron Jirasutast while presenting the symposium report, emphasized the role of family and small holder farmers and their contribution in achieving food and nutrition security. Dr. Hiroyuki Konuma, Assistant Director-

General and Regional Representative for Asia and the Pacific FAO, Bangkok, Thailand in his Inaugural address emphasized the need to scale up technologies for small vegetable farming system in South East Asia to boost productivity of small holder farmer for increased production and consumption of diversity of vegetables. Dr. Jacqueline Hughes, Deputy Director General- Research AVRDC- The World Vegetable Center, in her Keynote Speech projected her vision for the next 40 years to bring prosperity to the poor and health for all.



Prof. P.G. Chengappa presenting Key Note Address on behalf of VEGINET, Bangalore

Scientific presentations covered wide areas pertaining to the improvements in small scale farming systems, integrated crop safety, health and nutrition, crop improvement, effect of climate change on crop production, urban and peri urban horticulture, household production, vegetable production in schools, nutrition sensitive agriculture, protected cultivation, hydroponics, vertical farming use of tomato yellow leaf Carl and bacterial wilt resistant breeding lines developed by AVRDC by the private and public sector. On behalf of Dr. Prem Nath, Dr. P.G. Chengappa presented the paper on farmer’s market in developing and developed countries and Dr. O.P. Dutta presented the paper on “Identifying objectives for breeding improved vegetable varieties-hard by vital choice”.



SEAVEG-2014 Co-ordination Committee Members



Participants of the SEAVEG-2014

International Cooperation



Field Trip to Kasetsart University Kampanngsaen Campus and East West Seed International Limited

On the last day of the symposium i.e. February 27, 2014, the field trip to Kasetsart University Kampanngsaen Campus and East West Seed International Limited (Hortigenetics Research, S.E. Asia, Limited), Nongbo, Songpenong, Suphanburi was very useful to the participants.

The abstract of papers presented by PNASF during the symposium are listed below:

Identifying objectives for breeding improved vegetable varieties-hard but vital choice

Nath, P.

ABSTRACT

The vegetable breeding experience confirms that identifying meaningful objectives for breeding is prelude and key to successful results of a breeding programme in developing improved varieties. In order to identify the objectives, the views of the choice makers must be considered which will ensure the acceptance and popularity among the farmers and consumers. Practical examples have been illustrated.

Farmer's market in developing and developed countries

Nath, P. & Velayundhan, S.

ABSTRACT

In developing countries, the farmers' markets have successfully established a link between producers and consumers of nearby communities and synchronized supply of food available with the available buyers. This idea and approach took its birth probably centuries ago in villages and rural communities to fulfill their requirement of food, before towns and cities came into existence. In developed countries, during the course of time, the farmers' market increased in number, size, nature and scope. It has become popular among common people who have preference for fresh and traditional fruits, vegetables, flowers, fast food and drinks and other daily needs of particular ethnic interest. The presentation will discuss and illustrate on characters and developments of farmers' market, observational visits, genetic resources availability and prospects of farmers' market in both developed and developing countries.

Linking vegetable growers to organized retail markets: the experience in India

Chengappa, P.G.

ABSTRACT

Indian agriculture is diversifying towards high value commodities comprising of vegetables, fruits, livestock and fisheries due to changing consumption patterns, fast urbanization and increase in income levels. The vegetable production has recorded a growth rate of 4.5 percent per annum during 1991- 2010 period as compared to the average growth of 2.5 percent per annum of the agricultural sector as a whole. Vegetable production represents an important area for income growth, especially for small and marginal famers. Vegetables being perishable, bulky with low shelf life, the supply chain management issues get complicated. Most often, the supply chain for vegetables is highly unorganized, fragmented and exploitative resulting in low share of producers in consumers' rupee. In this study, the contract farming model and backward integration approach adopted by the food retail chains in improving the supply chain for vegetables have been analyzed.

The experiences in India of contracting firms both of foreign and domestic origin indicate strong evidence of backward and forward linkages benefitting farmers. These firms provided quality inputs such as seeds, fertilizers, and plant protection chemicals to the farmers at their gate coupled with the technical advice on production aspects. This enabled the farmers to reduce their working capital needs. The linkage substantially reduced their transaction cost per unit of output as the marketing was taken care by the firm. In general, contract farming helped farmers to improve their income levels by adopting intensified agriculture and reduction in transaction costs. However, due to the poor resource base, most small and marginal farmers appear to be not part of such an institutional arrangement.

The Food Retail Chains (FRC) are evolving and growing at a fast pace in India. The FRCs were found to depend mostly on the existing channels of marketing to source vegetables and not practicing backward integration because of the restrictions they face as per the existing market laws besides operational difficulties. In the recent years, amendments in market regulation Act in some states of India have enabled

few of the FRCs to establish backward linkages with farmers for procuring fresh vegetables following a Farmer - Vendor model wherein FRC directly purchased vegetables from selected farmers without entering into a contract. This arrangement reduced the market risks and transaction costs to the farmers. Enabling direct supply by farmers enabled FRCs to increase their control over quality, supply reliability and price stability. Farmer's who had opportunities to tie up with FRCs have increased their income through improved agricultural practices, growing of high value exotic vegetables throughout the year and

Managing soil borne and virus diseases in cucurbits through Eco-friendly approaches

Dutta, O.P.

ABSTRACT

The risk associated with complex soil borne and virus diseases in cucurbits is quite alarming. Since effective chemical control measures are not available, farmers incur the highest production losses. Among the diseases, Fusarium wilts of melon, watermelon and cucumber are the most damaging in India with the Zucchini yellow mosaic virus, Cucumber mosaic virus, Papaya ring spot virus and Water melon mosaic virus as the principal pathogens affecting these three vegetables. These viruses are transmitted by aphids in a non-persistent manner. In addition, the bud necrosis of watermelon (Tospo group of virus) transmitted by thrips is another serious disease of watermelon in southern India. Developing varieties with multiple resistance to soil borne fungi and virus diseases is time consuming and capital intensive. One immediate short-term and successful approach is the use of grafting techniques using bottle gourd and squash (*C. moschata* X *C. maxima*) as rootstocks, followed by covering the grafted seedlings with acryl net after transplanting in field. Reflective plastic mulch keep the vectors away. At flowering, the acryl net is gradually removed to ensure pollination and fruit setting. Once the fruit setting commences, it acts as a strong sink for the photosynthate restricting the rate of growth of vine as well as virus multiplication. Since virus usually multiplies in the growing young tissues of the plant and not in older leaves and appear on the young shoots after the incubation of two weeks, early varieties with basal fruit bearing habit thus escape the damage caused by virus leading to a successful harvest. Steps in making the successful graft and its nursery management along with the use of acryl net in the open field will be projected.

reduction in transaction cost. The concept of Ready to Retail adopted by the FRC is to the benefit of the farmer – vendors as they realized higher returns by performing additional marketing functions such as cleaning, grading and packing at the farm level. However, the farmer - vendor model has participation of few small and marginal farmers because of their limitation to invest in creating irrigation facilities which is crucial for growing quality vegetables. Further, the fact that the FRC purchased only good quality vegetables have resulted in farmers not finding the market for rejects.

SOCIAL COMMITMENT

AWARDS



PNASF and VEGINET International Awardees and Prof. P.G. Chengappa

PNASF INTERNATIONAL AWARD FOR 2013

In the series of **PNASF International Awards**, the awards for 2013 were given to Mr. Hiroyuki Konuma, Assistant Director-General and Regional Representative, FAO Regional Office for Asia and the Pacific, Bangkok, Thailand for promotion of food and nutrition security in Asia and Dr. J.D.H. Keatinge, Director General, AVRDC-The World Vegetable Center, Tainan, Taiwan for leadership in promotion of vegetables in Asia. In the absence of Dr. Prem Nath, the PNASF International Awards were presented by Prof. P.G. Chengappa.



Mr. Hiroyuki Konuma receiving the PNASF Award



Dr. Yin-fu Chang, AVRDC Deputy Director General - Administration and Services receiving the PNASF Award on behalf of Dr. J.D.H. Keatinge, Director General, AVRDC-The World Vegetable Center, Taiwan

Social Commitment

During the last international event, International Conference on Horticulture (ICH-2009) held in November 2009 in Bangalore, this award was presented to Prof. Jules Janick, Distinguished Professor of Horticulture, Purdue University, USA for Promotion of Horticultural Science; Dr. Mahmoud Solh, Director General, ICARDA, Syria, for Promotion of Dryland Horticulture; Mr. Wilfried O. Baudoin, former Head of Horticulture Group, FAO, Rome for Promotion of Vegetable Science.

The dignitaries on the dais present were Prof. P.G. Chengappa, National Professor of Indian Council of Agricultural Research (ICAR), who represented Dr. Prem Nath, Chairperson of VEGINET; Dr. Virach Chantrasm, HSST Officer; Dr. Poonpipope Kasemsap, Kasetsart University, Vice President, International Relations; Dr. Jackie Hughes, AVRDC Deputy Director General –Research; and Dr. Suwit Chaikiattiyos, Director, Horticulture Research Institute, DOA; Dr. Dumrong Jirasutas, Director General of DOA and Mr. Hiroyuki Konuma, Assistant Director-General and Regional Representative of the FAO Regional Office for Asia and the Pacific who officially opened the symposium.

VEGINET INTERNATIONAL AWARD FOR 2013

In the series of **VEGINET International Awards**, the award for 2013 was given to Dr. Om Prakash Dutta, India for his *outstanding contribution in Vegetable Research and Development*. The last award was presented to Prof. Joao da Silva Dias, Technical University of Lisbon, Instituto Superior de Agronomia, Portugal, for his outstanding contribution in Vegetable Research and Development during *Regional Symposium-High Value Vegetables in Southeast Asia: Production, Supply and Demand (SEAVEG 2012) held on January 24-26, 2012 in Lotus Hotel Pang Suan Keaw, Chiang Mai, Thailand*.



Dr. O.P. Dutta receiving the VEGINET International Award

The award to Dr. Om Prakash Dutta was presented by Prof. P.G. Chengappa on behalf of the Vegetable Science International Network (VEGINET), Bangalore during the inaugural session of the Regional Symposium SEAVEG 2014: Families, Farms, Food-Sustaining Small-Scale Vegetable Production and Marketing Systems for Food and Nutrition Security held from 25-27 February 2014 in Bangkok, Thailand.

Dr. Akhilesh Sharma, Department of Vegetable Science and Floriculture, Agriculture University, Palampur, India won the **VEGINET Best Oral Paper Award** during SEAVEG-2014 for his presented paper entitled, "Induction of Powdery Mildew Resistance in Garden Pea (*Pisum sativum*) using mutagenesis".

PNASF CERTIFICATE AWARD TO EDITORS/PUBLISHERS

Dr. C.P.A. Iyer receiving certificate



Dr. K.R.M. Swamy receiving certificate



Dr. B.S. Prabhakar receiving certificate



Mr. P.B. Gaddagimath receiving certificate

During the release of **Volume-II: Food** and **Volume-III: Agriculture** of the publication series, "**The Basics of Human Civilization – Food, Agriculture and Humanity**", at Raj Bhawan on April 19, 2014, the editors of the books Dr. C.P.A. Iyer, Dr. O.P. Dutta, Dr. K.R.M. Swamy, Dr. B.S. Prabhakar and Mr. P.B. Gaddagimath received Certificates for their outstanding work by Guests of Honour, Hon. Shri T.B. Jayachandra, Minister for Law, Justice and Human Rights; Parliamentary Affairs and Legislation; and Animal Husbandry, Government of Karnataka.

On this occasion M/s New India Publishing Agency (NIPA), New Delhi received the PNASF certificate of merit for publishing the book Volume: II-Food and M/s Scientific Publishers (India), Jodhpur



Mr. M. Sahabudeen receiving certificate

represented by Mr. Mohamed Sahabudeen received the PNASF certificate of merit from Hon. Shri M.V. Rajasekharan, former Minister of State for Planning, Government of India, New Delhi for publishing the book Volume: III- Agriculture.

VEGINET MEMBER DR. BRAHM SINGH HONOURED WITH PADMA SHRI

Dr. Brahma Singh an eminent Horticulture Scientist and member of VEGINET was conferred with Padm Shri on 26th April, 2014 from His Excellency President of India, Shri Pranab

Social Commitment/Information Dissemination



Dr. Brahma Singh receiving the Padma Shri

Mukherjee. The award was mainly for (1) Greening of Leh Valley by developing appropriate agro- technologies. (2) Pioneering Promotion and Development of Protected Cultivation Technologies in the country. (3) Discouraging, Nutrition, pharmacological and Environment protection potential of Sea buckthorn in Cold deserts of the Country and (4) Promoting R&D on medicinal plants and establishment of herbal gardens at Rashtrapati Bhawan and in high altitudes of the country.

The PNASF and VEGINET family congratulate Dr. Brahma Singh for this honor and wish for his continued contribution to improve agro- technologies.

FELLOWSHIP/SCHOLARSHIP

GOLD MEDAL PNASF/UAS/2001

The PNASF Gold Medal 2014 was awarded to the Ph.D. (Sericulture) with ID No. PAL0074 student Ms. Jyoti Biradar for highest grade point average at the University of Agricultural Sciences (UAS), Bangalore. The award was presented during the University's 48th Convocation at University of Agricultural Sciences (UAS), GKVK, Bangalore held on April 20, 2014.

PNASF/DHARMSHEELA NATH SCHOLARSHIP /2005 AT THE UNIVERSITY OF AGRICULTURAL SCIENCES (UAS), BANGALORE

This fellowship for agriculture post graduate students was transferred from UAS, Bangalore to UHS, Bangalore awarded to Ms. Nayana P., ID No. PALB 2216, Jr. M.Sc. (Agri.), Department of Food Science and Nutrition, University of Agricultural Sciences (UAS), GKVK, Bangalore has been awarded PNASF Dharmasheela Nath Scholarship for the academic year 2013-14.

PNASF/DEVKI DEVI AHUJA FELLOWSHIP/2013 AT THE UNIVERSITY OF AGRICULTURAL SCIENCES (UAS), BANGALORE

The new fellowship for nutrition for post graduate students was awarded to Ms. Megha M. Katte, ID No. PALB 3202, Jr. M.Sc. (Agri.), Department of Food Science and

Nutrition, University of Agricultural Sciences (UAS), GKVK, Bangalore has been awarded PNASF Devki Devi Ahuja Fellowship for the academic year 2013-14.

PNASF/SPONSORSHIP-2013

PNASF sponsored and jointly with Institute for Social and Economic Change (ISEC), organized the Seminar on "Development Trends in Urban and Peri-Urban Agriculture (UPA)" held at the ISEC, Bangalore on August 08, 2013.

VEGINET INTERNATIONAL TRAVEL GRANT TO DR. O.P. DUTTA, TAC MEMBER OF PNASF, BANGALORE

Within the mandate of PNASF to assist and encourage scientists to participate in International Conferences, the airfare charges were granted to Dr. O.P. Dutta, Director-Research, Namdhari Seeds Pvt. Ltd., Bangalore and Technical Advisory Council Member of PNASF. He participated in the Regional Symposium-SEAVEG 2014: Families, Farms, Food-Sustaining Small-Scale Vegetable Production and Marketing Systems for Food and Nutrition Security from 25-27 February 2014 in Bangkok, Thailand and he presented paper entitled, "Managing soil-borne and virus diseases in cucurbits through eco-friendly approaches".

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OTHER PUBLICATIONS

- ❖ Chengappa, P.G. 2014. Linking vegetable growers to organized retail markets: the experience in India, Book of Abstract- SEAVEG 2014: Families, Farms, Food: Regional Symposium on Sustaining Small- Scale Vegetable Production and Marketing Systems for Food and Nutrition Security, February 25-27, 2014 in Bangkok, Thailand. P.78
- ❖ Dutta, O.P. 2014. Managing soil borne and virus diseases in cucurbits through eco-friendly approaches, Book of Abstract-SEAVEG 2014: Families, Farms, Food: Regional Symposium on Sustaining Small- Scale Vegetable Production and Marketing Systems for Food and Nutrition Security, February 25-27, 2014 in Bangkok, Thailand. P.117
- ❖ Nath, Prem 2014. Identifying objectives for breeding improved vegetable varieties-hard but vital choice, Book of Abstract-SEAVEG 2014: Families, Farms, Food: Regional Symposium on Sustaining Small- Scale Vegetable Production and Marketing Systems for Food and Nutrition Security, February 25-27, 2014 in Bangkok, Thailand. P.53
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PRESENTATIONS

- ❖ The Session Opening Speech - Inaugural Address "Identifying objectives for breeding improved vegetable varieties-hard but vital choice" was presented by Dr. O.P. Dutta on behalf of Dr. Prem Nath during SEAVEG 2014: Families, Farms, Food: Regional Symposium on Sustaining Small- Scale Vegetable Production and Marketing Systems for Food and Nutrition Security held on February 25-27, 2014 in Bangkok, Thailand.
- ❖ The presentation authored by Nath P & Velayundhan S. "Farmer's market in developing and developed countries" was presented by Prof. P.G. Chengappa on behalf of Dr. Prem Nath during SEAVEG 2014: Families, Farms, Food held on February 25-27, 2014 in Bangkok, Thailand.
- ❖ The presentation "Managing soil borne and virus diseases in cucurbits through eco-friendly approaches" was presented by Dr. O.P. Dutta during SEAVEG 2014: Families, Farms, Food held on February 25-27, 2014 in Bangkok, Thailand.
- ❖ The presentation "Linking vegetable growers to organized retail markets: the experience in India" was presented by Prof. P.G. Chengappa during SEAVEG 2014: Families, Farms, Food held on February 25-27, 2014 in Bangkok, Thailand.

Information Dissemination

UPCOMING BOOKS

I “The Basics of Human Civilization- Food, Agriculture and Humanity; Volume-IV: Humanity”

The publication will focus on the contribution of humanity to food and agriculture.

II “The Basics of Human Civilization- Food, Agriculture and Humanity; Volume-V: Expectations”

The publication will highlight the expectations of the people in fulfilling food and nutrition security.

III Joint- Publication

“Development Trends in Urban & Peri-Urban Agriculture” the joint publication of Institute for Social and Economic Change (ISEC) and Dr. P.N. Agricultural Science Foundation (PNASF), Bangalore and Westville Publishing House, New Delhi focuses on ingredients and development of urban and peri-urban agriculture.

PUBLICATIONS OF PNASF

Publications on shelves

1. *Book– Vegetable Crops: Improvement and Production (Pages :398) 2007
2. *Book – Food Security and Vegetables- A Global Perspective (Pages:437) 2004
3. ICV-2002 Proceedings – CD (Pages:931) 2003
4. VEGINET Booklet (Pages: 22) 2003
5. ICV-2002 Abstract Book-(Pages:445)2002
6. ICH Abstract Book (Pages: 487) 2009
7. ICH Souvenir (Pages:142) 2009
8. ICH-2009-Proceeding-CD (Pages: 2553) 2010
9. Book – Foods and Nutrition (Pages: 485) 2009
10. Book-Horticulture and Livelihood Security (Pages:550) 2010
11. Book-The Basics of Human Civilization- Food, Agriculture and Humanity;
 - Volume-I: Present Scenario (Pages-676) 2013
 - Volume-II: Food (Pages-561) 2014
 - Volume-III: Agriculture (Pages-412) 2014

*** 50% discount given to PNASF and VEGINET members, Professors, Students and Libraries.**

How to order?

Making online order to drpremnath@vsnl.net and by sending Bank Demand Draft or Cheque in favor of Dr. Prem Nath Agricultural Science Foundation, A/C No.: 0417101037688 in Indian rupees and A/C No: 0417101039815 in US Dollars, payable at Canara Bank, Vyalikaval, Bangalore – 560 003, India (Contact directly PNASF at E-mail: drpremanth@vsnl.net for more details about the publication).

PLANS ON HAND

While the ongoing activities will continue, the PNASF proposes to undertake new programmes and activities;

- Preparation of the book “The Basics of Human Civilization- Food, Agriculture and Humanity-Volume-IV: Humanity”.
- Preparation of the book “The Basics of Human Civilization- Food, Agriculture and Humanity- Volume-V: Expectations”.
- Publication of the Proc. ISEC/PNASF Seminar on Development Trends in Urban and Peri-urban Agriculture on 8th August, 2013, at ISEC, Bangalore.
- Organizing Book-Release Ceremony.
- Preparation for SEAVEG-2016
- Proceedings of Regional Symposium Sustaining on Small-Scale Vegetable Production, Food and Nutrition and Marketing Systems SEAVEG 2014: Families, Farms, Food scheduled February 25-27, 2014 in Bangkok, Thailand.
- Participation in Conferences/Symposium/Workshop/Congress.
- Awards/grants to university students and researchers to continue.
- Collaboration with the national and international institutions/associations in the area of food and nutrition security etc.
- Publication of the PNASF News Letters and E-VEGINET News.

OPPORTUNITIES

Awards/Scholarships

PNASF encourages universities/institutions to institute PNASF Medal Awards for outstanding post-graduate students/ young scientists working on research problems augmenting food and nutrition security and invites them to support these activities through funds provided.

Publications

The PNASF publications are available on price with the Central Secretariat, PNASF and publishers.

Contribution/Membership

Registration/membership/contribution either to PNASF or to VEGINET available at Website: www.pnasf.org and by E-mail to drpremnath@vsnl.net or pnasfoundation@gmail.com.

News Papers cuttings of book relasing ceremony



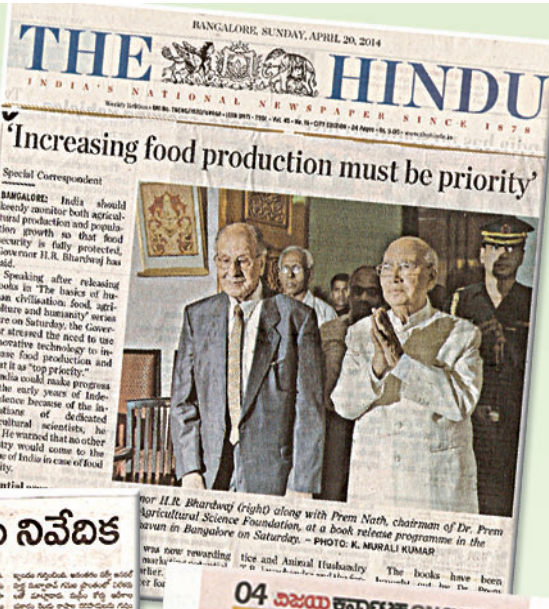
THE NEW SUNDAY EXPRESS
BANGALORE 20 APRIL 2014

Two Books on Agriculture Released

Express News Service

Bangalore: Governor Ians Raj Bhardwaj released two books on food and agriculture at Raj Bhavan on tuesday.

The books have been compiled by Dr Prem Nath, irman of Prem Nath Agricultural Science Foundation in the city. Dr Premnath at the book launch, d, agriculture and hu- ty form the basis of ation." Bhardwaj said



Increasing food production must be priority

Special Correspondent

BANGALORE: India should leedly consider both agricul- tural production and popula- tion growth so that food security is fully protected, Governor I.R. Bhardwaj has said.

Speaking after releasing books in "The basics of hu- man civilisation, food, cul- ture and humanity" series here on Saturday, the Govern- or stressed the need to in- crease food production and treat it as "top priority".

India needs make progress in the next few years of Inde- pendence because of the in- creasing population, he said. He warned that no other country would come to the rescue of India in case of food security.



ತೃರಲಿ ಸುಪ್ರಿಂಕು ನಿವೇದಿಕ

ಅಧ್ಯಕ್ಷರಾದ ಡಾ. ಪ್ರಮೋದ್ ಕುಮಾರ್ ಅವರು ಕೃತರಲ್ಲಿ ಆಧುನಿಕ ತಂತ್ರಜ್ಞಾನ ಬಳಕೆಯ ಅರಿವು ಮೂಡಿಸಿ ಕೃತರಲ್ಲಿ ಆಧುನಿಕ ತಂತ್ರಜ್ಞಾನ ಬಳಕೆಯ ಅರಿವು ಮೂಡಿಸಿ ಕೃತರಲ್ಲಿ ಆಧುನಿಕ ತಂತ್ರಜ್ಞಾನ ಬಳಕೆಯ ಅರಿವು ಮೂಡಿಸಿ



ಕೃತರಲ್ಲಿ ಆಧುನಿಕ ತಂತ್ರಜ್ಞಾನ ಬಳಕೆಯ ಅರಿವು ಮೂಡಿಸಿ

ವಿಜಯ ನಗರದಲ್ಲಿ ಡಾ. ಪ್ರಮೋದ್ ಕುಮಾರ್ ಅವರು ಕೃತರಲ್ಲಿ ಆಧುನಿಕ ತಂತ್ರಜ್ಞಾನ ಬಳಕೆಯ ಅರಿವು ಮೂಡಿಸಿ ಕೃತರಲ್ಲಿ ಆಧುನಿಕ ತಂತ್ರಜ್ಞಾನ ಬಳಕೆಯ ಅರಿವು ಮೂಡಿಸಿ



ಆಹಾರ ಸುರಕ್ಷತೆ ಬಗ್ಗೆ ಸದಾ ನಿಗಾ ಅಗತ್ಯ

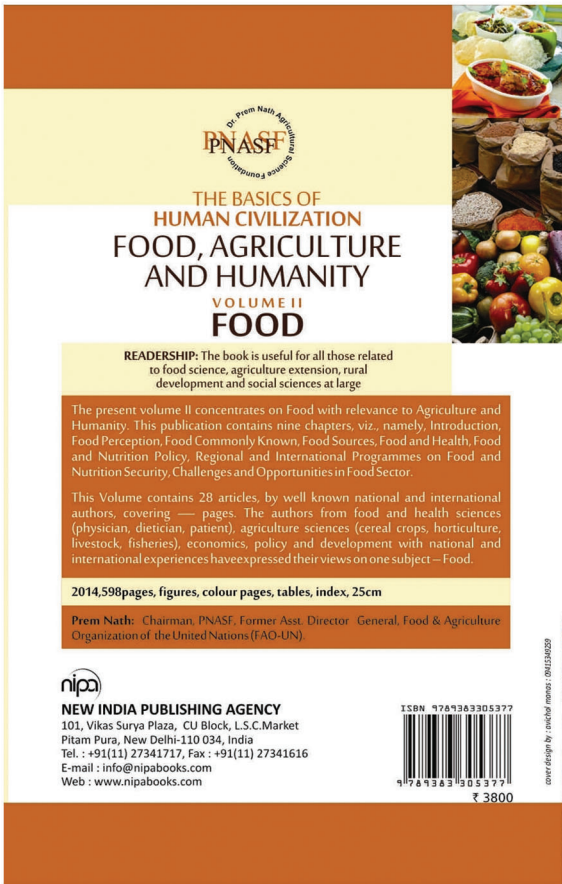
ಬೆಂಗಳೂರು: ಡಾ. ಪ್ರಮೋದ್ ಕುಮಾರ್ ಅವರು ಆಹಾರ ಸುರಕ್ಷತೆ ಬಗ್ಗೆ ಸದಾ ನಿಗಾ ಅಗತ್ಯ ಎಂದು ಹೇಳಿದರು. ಆಹಾರ ಸುರಕ್ಷತೆ ಬಗ್ಗೆ ಸದಾ ನಿಗಾ ಅಗತ್ಯ ಎಂದು ಹೇಳಿದರು. ಆಹಾರ ಸುರಕ್ಷತೆ ಬಗ್ಗೆ ಸದಾ ನಿಗಾ ಅಗತ್ಯ ಎಂದು ಹೇಳಿದರು.



ಆಹಾರ ಭದ್ರತೆ, ಉತ್ಪಾದನೆಯಲ್ಲಿ ಸ್ವಾಯತ್ತ ಅಗತ್ಯ

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THE BASICS OF HUMAN CIVILIZATION FOOD, AGRICULTURE AND HUMANITY VOLUME II FOOD

READERSHIP: The book is useful for all those related to food science, agriculture extension, rural development and social sciences at large

The present volume II concentrates on Food with relevance to Agriculture and Humanity. This publication contains nine chapters, viz. namely, Introduction, Food Perception, Food Commonly Known, Food Sources, Food and Health, Food and Nutrition Policy, Regional and International Programmes on Food and Nutrition Security, Challenges and Opportunities in Food Sector.


This Volume contains 28 articles, by well known national and international authors, covering — pages. The authors from food and health sciences (physician, dietician, patient), agriculture sciences (cereal crops, horticulture, livestock, fisheries), economics, policy and development with national and international experiences have expressed their views on one subject — Food.

2014, 598 pages, figures, colour pages, tables, index, 25cm

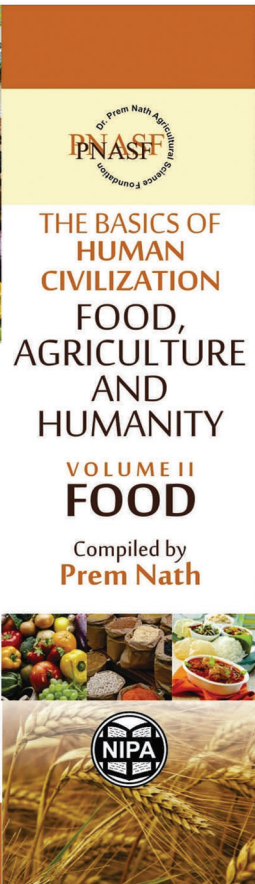
Prem Nath: Chairman, PNASF, Former Asst. Director General, Food & Agriculture Organization of the United Nations (FAO-UN)

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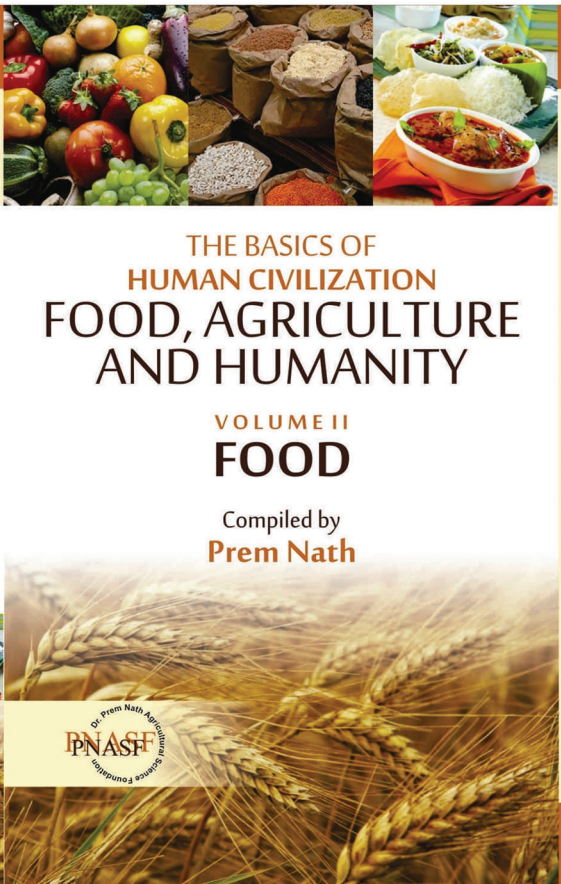
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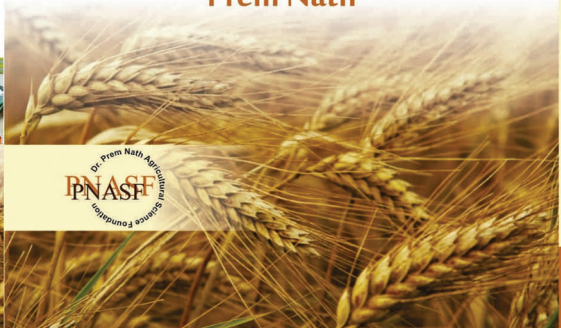
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THE BASICS OF HUMAN CIVILIZATION FOOD, AGRICULTURE AND HUMANITY VOLUME - III : AGRICULTURE

Dr. Prem Nath Agricultural Science Foundation (PNASF), Bangalore, India

The relationship between and among food, agriculture and humanity, has been explained as essential and bondage permanent for the survival of humankind and its civilization. It is also understood that agriculture serves as a catalyst between food and human being because of the simple fact that agriculture produces food necessarily required by human beings for their survival.


In this context of agriculture we cannot forget the contribution of natural resources which are essential ingredients as well as partners in the manufacture of food. These natural resources are plants, animals, and human beings on one side and earth, water, sun and air on other side which provide both base and medium for the production, reproduction and survival of the former group of resources. Further, the human beings need plants and animals as sources of food and agriculture facilitates the production of food products.

At present we are discussing of efficient and smart technology developed through advanced agricultural sciences for the benefit of farmers who can produce quality food in abundance. In order to harness the potentials and refinement of agricultural sciences and to develop useful technology certain essential ingredients are must which embrace the area of education, research and technology development, application of technology, developmental steps in production and consumption.

The present publication volume-III attempts to illustrate the above views within the arena of agriculture keeping in view both bright and dark side in terms of understanding knowledge, application, development, and positive results. The product, i.e., food is already discussed exhaustively in volume-II of this series of publications.

On the whole, the attempts will be made to give adequate treatment to the three Basics of Human Civilization, namely, Food, Agriculture and Humanity, in 5 volumes, namely I) Present Scenario, II) Food, III) Agriculture, IV) Humanity and V) Expectations.

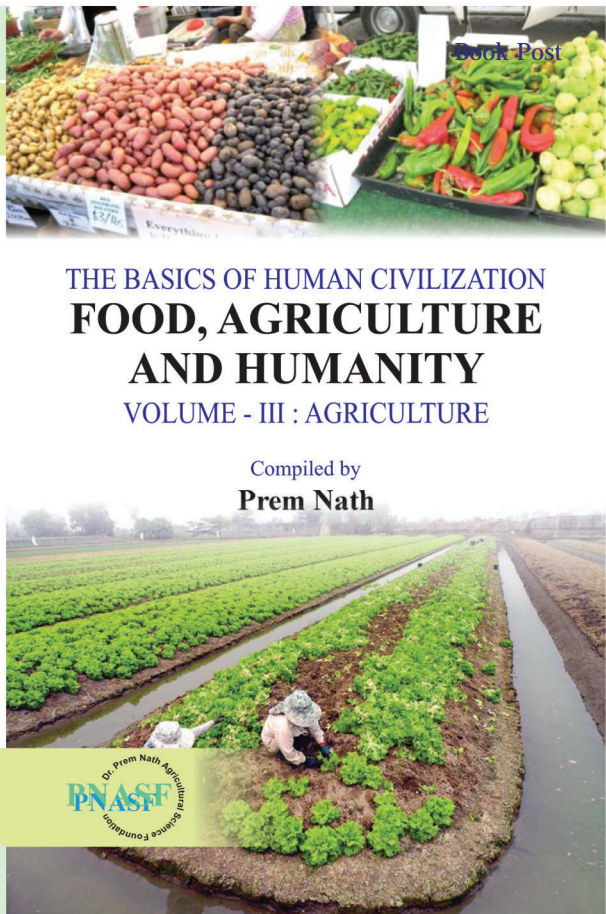
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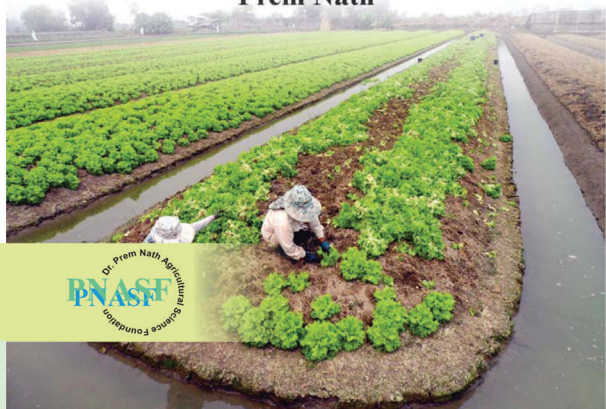
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