

Improving Income and Nutrition by Incorporating Mungbean in Cereal Fallows in the Indo–Gangetic Plains of South Asia

Proceedings of the Final Workshop and Planning Meeting

S. Shanmugasundaram (Sundar)
Technical Editor



AVRDC
The World Vegetable Center



DFID Department for
International
Development

South Asia Vegetable Research Network

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Foreword

Mungbean is the third most important legume (pulse crop) in the Indian sub-continent. It is also one of the most important legume crops for other South Asian countries. The Department for International Development (DFID) of UK had the vision and foresight to provide financial support for a project for AVRDC and six South Asian countries on mungbean to diversify the wheat-rice cropping system, improve nutrition, and increase income of rural community in 1997. The project was quite successful in identifying and releasing improved short growth duration mungbeans with high yield potential, resistant/tolerant to mungbean yellow mosaic virus (MYMV), bold seeds, and synchronous maturity so that they can be harvested on a single occasion. Bangladesh and India were able to release new varieties within 3 years! Bhutan and Sri Lanka followed in the fourth year.

The official release of a variety does not ensure that it reaches the farmer and is used by them. Neither does it guarantee the increase of the planting area, rise in production, and improvement of nutrition and income of the rural poor. AVRDC undertook a two-year follow-up project to extend the new improved mungbean varieties to the farmers in the Indo-Gangetic Plains in India, Bangladesh, and Nepal with support from DFID. With strong logistical support from Punjab Agricultural University (PAU) in India, the Bangladesh Agricultural Research Institute (BARI), and Bangabhandhu Sheikh Mujibur Rahman Agricultural University (BSMRAU) in Bangladesh, including the CIMMYT project and two NGOs – FORWARD and LIBIRD in Nepal - AVRDC took the challenge of seed multiplication and distribution for the summer and *Kharif* seasons. The "seed village" program was highly successful in Punjab, India. Bangladesh transferred the PAU's "seed village" model to Bangladeshi farmers. At the end of two years, India and Bangladesh were able to produce a total of 45,000 tons of seeds sufficient to cover nearly 1.5 million hectares. In addition, participants from Bangladesh, India, and Nepal clearly demonstrated from their presentations the importance of sound crop management practices to obtain the genetic potential of the new varieties and to conserve the natural resources. The quality of their efforts was demonstrated in their excellent presentations and in the constructive discussions that followed.

I am extremely pleased to note the active participation of Punjab farmers in the workshop. They did not hesitate to give their frank opinions about the new variety and new technology. Their major concern is for a fair and stable market price. As such, the success of this project is primarily due to the excellent collaboration of researchers and the farmers which we deeply appreciate.

The Government of India and other governments in South Asia may want to seriously consider the recommendations of this workshop to boost crop diversification with mungbeans. We strongly solicit their support for mungbean research and development activities and their help in the development of policies to ensure appropriate market price for mungbean and other legumes.

I congratulate the organizing committee for the excellent workshop arrangements. AVRDC and its staff are extremely pleased to be part of this crop diversification of rice-wheat system through the introduction of short-duration mungbeans to improve income and nutrition of the rural and urban poor in the Indo-Gangetic Plains of South Asia. We are also very grateful for DFID's financial support that allowed the realization of this project. Efforts are currently underway to extend the benefits of this project to some of the poorest areas of South Asia.



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Introduction

The Indo-Gangetic Plains of South Asia is the birth place of 'green revolution'. Rice and wheat production dramatically increased with the introduction of improved varieties and cultivation technologies. The "begging bowls" have become "bread baskets", defying the Malthusian prediction. However, today, due to continuous cultivation of rice and wheat, soils have deteriorated, water tables have declined, salinization has set in, insect pests and plant diseases have increased, and environmental problems have been growing in the region. The answer to the said problems is 'crop diversification' through the introduction of soil-enriching legumes that can revive the soils, decrease moisture consumption, disrupt the insect and disease cycles, and sustain the soil productivity.

It is for this reason that the AVRDC-World Vegetable Center, with support from DFID of UK [DFID's Holdback Project R6719(H), April 1997-March 2001], developed the project "Promotion of mungbean research outputs for farmer adoption in South Asia" for six South Asian countries, namely Bangladesh, Bhutan, India, Nepal, Pakistan, and Sri Lanka. The project entailed the conduct of multi-locational and multi-seasonal trials for three years in all six countries. Bangladesh and India were able to release improved cultivars with high yield (1.5 t ha⁻¹), short maturity duration (60-65 days), bold seed (5 to 6 gm for 100 grains), resistant/tolerant to MYMV, and can be harvested in one single occasion.

The second phase of the project focused on on-farm trials and extension of new varieties during the fallow period after wheat or potato and before rice in the Indo-Gangetic Plains of Bangladesh, India, and Nepal. This phase commenced in March 2002 and climaxed with the successful holding of this workshop in May 2004. This proceeding presents the outcome of two-year collaborative efforts initiated on the first phase which lasted for three years.

On behalf of AVRDC, I would like to acknowledge the continuous enthusiasm and support provided by the participating institutions, such as Punjab Agricultural University, Bangabandhu Sheikh Mujibur Rahman Agricultural University, Bangladesh Agricultural Research Institute, CIMMYT, National Agricultural Research Center/Nepal, LIBIRD, and FORWARD/ Nepal.

AVRDC acknowledges the excellent arrangements made by the organizing committee at PAU, especially to Vice-Chancellor Dr. K. Aulakh, Research Director Dr. K.S. Nanda, Coordinators Drs. H.S. Sekhon, Gurdip Singh, T.S. Bains and D.K. Grover, and all their team members.

I would like to express special thanks to all the farmers of Punjab who were enthusiastic in accepting and trying the new variety. Due to their continued interest, the area and production of mungbean in Punjab will grow and the spill-over efforts can be seen in the neighboring states in India.

I would like to acknowledge the special efforts and support provided by Ms. Dolores Ledesma in reviewing the manuscripts for experimental details and statistical accuracies. Special thanks are also due to Ms. Teresa S.C. Liang who spent long hours during the implementation of the project, especially for her efforts in preparing and revising the manuscripts for final publication.

This proceeding, we hope, will be helpful as a resource material in the development of new proposals which will use the improved mungbean variety, and in enabling the technologies to reach farmers and other concerned people who need to improve their income and nutrition level.

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