

The Asian Hive Bee, *Apis cerana*, as a Pollinator in Vegetable Seed Production

(An Awareness Handbook)



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**International Centre for Integrated Mountain Development
(ICIMOD)**

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Foreword

The Asian hive bee, *Apis cerana* F, is widely distributed throughout the Hindu Kush-Himalayan range. Beekeeping with this native bee species has been an important part of natural and cultural heritage amongst the mountain communities as a traditional household activity. Hive products, such as honey, beeswax, and pollen, provide both nutritious food and cash income. Yet another significant, but not widely recognised, role is that honeybees help to increase productivity levels and the quality of agricultural, horticultural, and fodder crops through cross-pollination activities. However, this aspect has not yet been developed on the modern scientific lines that are followed in the developed countries of the West where the European hive bee, *Apis mellifera*, is extensively used for the pollination of agricultural crops. For example, the value of bee pollination in crop production in the USA has been estimated at more than 20 billion U.S. dollars per annum and one third of the food consumed in the world is produced by insect-pollinated plants.

Keeping in mind the above, ICIMOD has identified the beekeeping and pollination research and development programme as one of the essential components of mountain farming systems. Within this context, ICIMOD earlier published two books, "Beekeeping in Integrated Mountain Development" and "Honeybees in Mountain Agriculture". These books focussed on government strategies and interventions, research and development efforts, farmers' strategies and responses, and replicable experiences for the development of beekeeping in the Hindu Kush-Himalayan Region. The present handbook follows on

directly from the success of these earlier publications which identified the urgent need for practical information on bee-pollination methods, especially through the native *Apis cerana*, for increasing the yield and quality of vegetable seed production in the Kathmandu Valley of Nepal. The present awareness handbook is in response to the need to provide a much needed guide for those involved in the scientific and practical aspects of bee pollination, including extension workers, beekeepers, growers, pesticide applicators, consultants, environmentalists, and others.

This handbook describes the general scientific principles involved in using the native hive bee, *Apis cerana*, for pollination purposes and documents the results of scientific research carried out at ICIMOD and elsewhere on this important aspect. It also discusses the comparative role of the native hive bee, *Apis cerana*, and the exotic hive bee, *Apis mellifera*, as pollinators of vegetable crops under the ecological conditions of the Kathmandu Valley and offers a positive set of solutions to the problems of protecting honeybees from pesticides.

The excellence of this report is due to the painstaking efforts of Professor L.R. Verma, the Apicultural Expert at ICIMOD, who was ably assisted by his project staff, especially by Dr. Uma Partap, the co-author.

E.F. Tacke
Director General
ICIMOD

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