

An Overview of Pollinators Research and Development in the HKH Region

Uma Partap

**ICIMOD, PO Box 3226, Kathmandu Nepal
upartap@icimod.org.np**

Workshop on Solitary Bees: Conservation, Rearing and Management
for Pollination

Beberibe, Ceará April 26-30, 2004

The International Centre for Integrated Mountain Development (ICIMOD)

Vision

*“Prosperous and secure mountain communities
committed to peace, equity and environmental
sustainability”*

Mandate

*“Development of an economically and environmentally
sound mountain ecosystem and improvement in the
living standards of mountain populations of the HKH
region”*

Mission

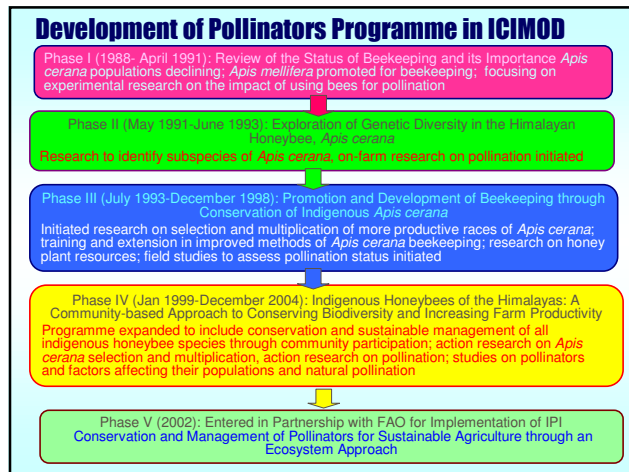
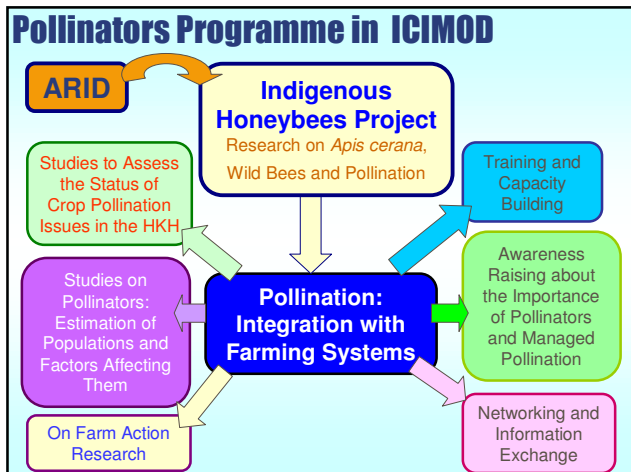
*“To develop and provide integrated and innovative
solutions, in cooperation with partners, which foster
action and change for overcoming mountain people’s
economic, social and physical vulnerability”*

Programme Implementation Approach

- ICIMOD works in eight countries of the HKH region – Afghanistan, Bangladesh, Bhutan, China, India, Myanmar, Nepal, and Pakistan through NCIIs including both GOs and NGOs
- Has about 300 partner institutions in the region and outside for programme implementation
- Has about 150 staff recruited from the region as well as from outside

ICIMOD’s Programme Areas

- Natural Resources Management (NRM) Programme
- Agricultural and Rural Income Diversification (ARID) Programme
- Water, Hazards and Environmental Management (WHEM) Programme
- Culture, Equity, Gender and Governance (CEGG) Programme
- Policy and Partnership (PP) Programme
- Information and Knowledge (IKM) Programme



Efforts and Achievements

I. Assessment of Crop Pollination Problems

- Studies to assess crop pollination problems in selected sites in India, China, Pakistan, Bhutan and Nepal
- **Findings:** crop productivity declining due to inadequate pollination
- **Reasons for inadequate pollination:** lack of pollinators, lack of pollinisers, bad weather during flowering
- Farmers aware of the problem in Himachal Pradesh, India and Maoxian county, China and making efforts to manage pollination
- No specific management practices reported in Pakistan, Bhutan and Nepal: **this could be because farmers are less aware of the pollination management practices or the problem is less serious in these countries**

Pollination Management in Himachal Pradesh

Farmers increase polliniser proportion by...
 planting polliniser trees and grafting pollinisers on the main varieties since grafts produce flowers earlier than the newly planted trees

As a short-term solution to increase polliniser, farmers in Himachal Pradesh...
 cut flowering branches from the polliniser trees, put them in plastic bags full of water and hang them on to the trees of the main varieties

Farmers increase number of pollinators by using...
 colonies of honeybees. A well organized system for renting honeybee colonies for apple pollination is in place in Himachal Pradesh, India

Hand Pollination of Apples in Maoxian County, China

Farmers extract pollen from flowers of polliniser variety at balloon stage by rubbing two flowers against each other

They dry pollen by...

1. spreading it out in the sun
2. placing it in card board boxes fitted with 20 W electric bulb
3. using electric blankets

Farmers apply dried pollen to flowers of the main variety (within 2-3 days after extraction) with the help of brushes; reach distant flowers by climbing up on the trees and using brushes with long sticks

Beekeeping common but not used for pollination because it was not promoted; there is no system of paying for pollination services; farmers use lots of pesticides even during flowering that kill the bees; hand pollination promoted by the local government and farmers trained in hand pollination

II. Pollinator Populations Studies

To generate hard data that can be used as baseline information to monitor the status and trends of pollinators in future

- Methodology for estimating the number of nests of *Apis dorsata* in Nepal developed
- It combines field surveys, farmers interviews, use of systems tools such as GIS and GPS and statistics
- Data on altitude, land use, temperature, nesting sites preferred by *Apis dorsata* fed to the computer to generate maps of the potential nesting areas
- About 16 per cent of the total areas is randomly selected and surveyed to count the number and map the geographical position of bee nests (longitude, latitude and altitude) through GPS

III. Farmer-participatory Action Research into:

- selection and multiplication of indigenous *Apis cerana*
- the impact of honeybee pollination on apple yield and quality and
- the factors affecting pollinator activities and pollination

IV. Capacity Building and Training through.....

- setting up pollination demo and research sites and involving farmers as partners in action research in different villages;
- training materials such as manuals, posters, hand outs in English and regional languages;
- training farmers and extension workers on the role of honeybees in enhancing farm productivity through their pollination services; and
- supervising Ph.D. research, enhancing capacities of staff and partners by facilitating exchange visits and providing platform to share knowledge and information

V. Awareness Raising and Networking through.....

- producing awareness materials such as briefing papers, issue papers, discussions papers and newspaper articles and video films;
- setting up demo farms and organising pollination awareness camps in different villages for farmers
- Producing/ translating relevant literature into regional languages;
- informal networking of individual researchers and institutions working on pollination in the region;
- providing platform for sharing knowledge and information; and
- created “APINET – Nepal” - a formal Network of Beekeepers and Beekeeping Institutions in Nepal