

# Country Report - Nepal

Prepared for the meeting of the Programme Advisory Committee (PAC), Ayutthaya, Thailand, November 2001

## 1. Introduction

Nepal is a landlocked, mostly mountainous country situated between the Tibetan Plateau in the north and Indian plains in the south. With altitudes ranging from less than 100 m in the Terai to 8,848 m in the Himalayas, there exist different climates and different types of farming systems within Nepal (see box 1). As a result of these diversities, a wide variety of crops, vegetables and fruits are produced.

Agriculture, the backbone of Nepalese economy engages over 80% of the total population thereby contributing for 42% of the National GDP (Ministry of Finance - MOF, 1994). Apart from rice being the main staple production crop in the country, vegetables are grown at homesteads for local consumption throughout the country and with concentrations of market production around the major cities, in the mid hills and in the Terai in the South.

Rice, maize and wheat are the main staple crops, whereby rice is the most important: accounting for about 50% of the total agricultural land area and production of the country.

### Agro-ecological zones in Nepal

The **mountain** region has a low population density and agricultural production is limited due to the cold climate and limited rainfall. Farmers grow one crop of potato, buckwheat or barley each year or every two years on sloping fields.

The **mid hills** range between 800 m to 2,400 m and occupy about 41 percent of the total cultivated land. The climate is warm temperate and subtropical in lower river valleys, and cool temperate on high ridges. Most of the hill slopes are terraced to support crops.

The dominant crop of the mid hills is maize. Rice is a prestigious crop and is grown in *Khet* (lowland) in summer either as an irrigated or a rainfed crop depending upon the availability of water.

The **Terai** is an extension of the Gangetic plain along the border with India and called the granary of Nepal. Rice occupies more than a million ha of land in summer, mostly under rainfed conditions. Wheat is grown in winter with partial irrigation.

**(Source:** Rainfed Agriculture in Asia, Report of an APO Study Meeting 23-30 July 1996, Kathmandu, Nepal, Asian Productivity Organization, 1997 )



During the 1980s, Nepal was a net exporter of food grains. Currently, the country is suffering from a food deficiency. Efforts to increase the rice production has led to the introduction of a large number of modern varieties with mixed results. In recent years, Nepalese agriculture has increasingly suffered from various handicaps, such as inability to expand the cropped area, limited irrigation facilities, declining soil fertility, insufficient use of chemical fertiliser, etc., all of which have led to stagnation in yields of major crops. The situation is worsened by: high population growth rate, unbalanced distribution of available arable land, lack of agricultural knowledge among farmers, limited extension service etc.

Introduced in 1997, but effectively active since 1998, the FAO Community IPM Programme has proven to bring a positive change to the agricultural sector in Nepal. IPM, with its people-centred approach does not only involve pest management and minimising the use of pesticides, it also includes a wide range of other practices aimed at growing a healthy crop. The National IPM Programme has been able to address several of the problems mentioned above:



- Farmers and agricultural officers have gained knowledge to improve their rice production
- Farmers Fieldschool (FFS) are effective structures for agricultural extension
- Yields have increased
- Attention is paid to soil fertility
- Farmers become experts in their fields.

## 2. Organisation and Funding Arrangements

In Nepal the main partner in the IPM Programme is the Plant Protection Directorate (PPD), of the Department of Agriculture of His Majesty's Government of Nepal (HMG/N). However, the NGO sector is increasingly playing an important role in the implementation



of the IPM activities. International NGO partners are: Care Nepal and World Education. Via World Education 9 local NGOs are involved that carry out fieldschools in 12 districts.

Funding has mainly been received from the Norwegian Government, but CARE Nepal has independent funding sources. World Education has received funding via FAO, but managed to get a grant from the Australian Embassy for a training of trainers in early rice in 2001.

The Nepalese Government is increasingly allocating local budget through the District Agricultural Development Offices (DADO) or Village Development Committees (VDCs) for farmers fieldschools. In 2001 30% of the FFS were locally funded. In the nearby future the plan is to pay for farmers fieldschools with government resources and to allocate donor funding for training of trainers, workshops and other Community IPM activities. NGOs at the other hand, will be encouraged to search for alternative funding sources.

Nepal's other cooperative efforts include:

- Nepal is trying to become a member of the International Plant Protection Convention (IPPC) and is already a member the Asia-Pacific Plant Protection Convention (APPPC) and similar international/regional agencies.
- Efforts are made to follow the WHO Guidelines on Safe use of Pesticides.
- HGM/N has established a National Steering Committee with members from different disciplines for the effective launching of the IPM Programme.
- In the 9<sup>th</sup> Agriculture Perspective Plan (1997-2002) IPM was endorsed as the national policy for plant protection.
- HMG/N, with assistance from Greenpeace, has launched an initiative to remove the obsolete pesticide stocks in Nepal. (see Annex 1).

NGOs have the potential to expand the scale of FFS in Nepal, to effectively reach disadvantaged groups, and to reach out into remoter parts of the country. In our past experience, cooperation between the government and NGOs is not challenging but strengthens the efforts of the National IPM Programme. There is a need to expand and improve this collaboration in the time to come.





### 3. Training Achievements

Since the start of IPM in 1998 the activities were carried out with the goals of the National IPM Programme in mind.

#### Goals of the National IPM Programme in Nepal

1. Country wide IPM farmer training
2. Institutional development for IPM at all levels: village development committees, in the districts and regions
3. Teams of district trainers who can plan, organise, implement, manage, administer, monitor and evaluate IPM farmer training
4. Community IPM organisations
5. Links between farmer groups, research, rural development and educational organisations

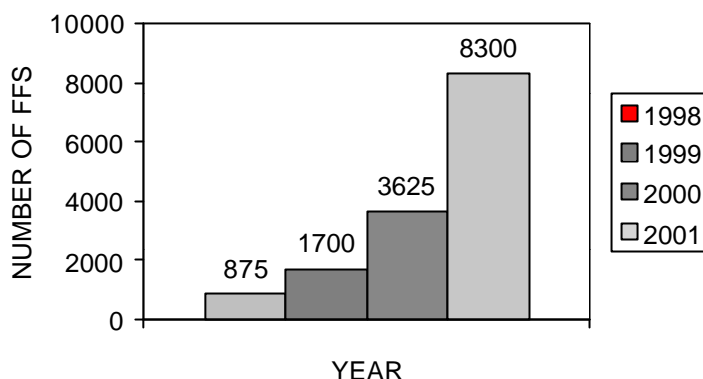
Since July 1999 the following training activities have been conducted:

	<b>Activity</b>	<b>No.</b>	<b>Dates</b>	<b>Participants</b>
1.	Rice IPM Training of Trainers	1	July-Oct 99	30 APPOs, 1 NARC, 4 NGO staff
2.	Participatory planning	2	March 2000, 2001	39 IPM trainers
3.	Science by Farmers	2	May 200, May 2001	36 IPM trainers
4.	Rice FFS	384	March-Nov 1999, 2000, 2001	farmers
5.	Farmers-to farmers FFS	176	July-Nov 2000; March – Nov 2001	farmers
6.	Farmers training of trainers	5	2000	156 FFS graduates
7.	Rice IPM Training of trainers	1	March- June 2001	17 Junior technicians GO, 17 JTs NGO
8.	Vegetable curriculum workshop	1	March 2001	13 IPM trainers, 1 officer from NARC, 1 Horticulture and 1 Potato Division
9.	Vegetable IPM ToT	1	July-Oct 2001	30 Government officers (Plant protection, horticulture), 4 NGO staff
10.	Policy workshop	1	Nov 2001	40 Policymakers, donor agencies etc.



Presently there are IPM activities in 40 (out of 75) districts, covering most of the rice growing areas in the terai and the mid hills. These districts have strong IPM trainers committed to developing an IPM programme in their rural areas. By November 2001 in total about 14000 farmers have graduated from an IPM fieldschool in Rice (see graph on right).

# OF FARMERS INVOLVED IN FARMER FIELD SCHOOL



In total 120 government officers (assistant plant protection officers, some horticulture officers) and 30 NGO staff have graduated from a season-long training of trainers.

### 3. Policy Developments.

The IPM Programme has been well received in Nepal. It has provided a welcome alternative to the established and disputed Training and Visit approach. The Nepalese government is HMG/N is looking for ways to sustain the IPM Programme in Nepal, such as:

- Policy changes in support of IPM implementation, including new restrictions on the use of pesticides, will be discussed during a forthcoming policy workshop in Nepal.
- The Director General of the Department of Agriculture and the Director of the Plant Protection Directorate have taken part in a policy study tour and exchange visit with other policymakers from member countries in August 2001.
- IPM and Farmers Fieldschools as a plant protection - as well as extension - approach might get included in the new (10th) Agricultural Perspective Plan (2002 – 2006).
- There are talks about establishing a separate national unit focusing on IPM in the Department of Agriculture, probably under the Plant Protection Directorate.
- Widespread adoption and funding of IPM by local Government.

### 4. Developments in Community IPM

IPM being relatively new in Nepal has started with a training of trainers in 1998, followed by farmers fieldschools and then in 2000 made a big jump to Community IPM activities.

#### 4.1 Farmer-to-farmer training and farmers associations:



The need to expand farmers fieldschools in the rural communities has resulted in the development of farmer trainers. Since the year 2000 farmers that are FFS graduates have been trained to conduct FFS themselves in their own communities. This has received a very positive response from the farming community and in 2001 140 FFS have been organised by farmer trainers, thus training almost 3500 farmers.

Additionally farmers started to organise themselves and have formed farmers or farmer trainers organisation. Several farmers have formed such associations in their district or in clusters of districts. In total five such organisations have been developed. It is likely that this trend will continue in the year to come.

#### **Case 2:**

In Bhaktapur in the season long rice IPM Farmers Fieldschool (Unaati) only women have participated. The dominant ethnic group is Newari, traditionally present in the Kathmandu valley. The farm size in this area is small, about 0.4 ha per household. Farmers grow rice and wheat and some cultivate vegetables. For both crops, manuring, planting, weeding, harvesting and threshing is mainly done by women. Whereas land preparation, digging the terrace corners, preparing the terrace bunds and application of chemical fertiliser and pesticides are mainly performed by men. For the total activities in agricultural production men spend about 3 person days, while women spend 22 person-days per family plot.

Land, the most important asset in the household, is owned and controlled by men. Many of the men in this area are involved in non-farming activities to generate an income (trade, business) and therefore there was for the women not much competition from men to take part in the IPM FFS, which paved the way for full women participation. Although the selection procedure was democratic and no emphasis was given to female participation it was clear in this case that the IPM Programme was aimed to fulfill a need for women in Bhaktapur. And because women in this FFS are involved in decision-making at the agricultural production level, their newly acquired skills and knowledge could be implemented successfully.

## **4.2 Science by farmers**

During the Farmers Fieldschool, farmers experience in several ways with "science", through trials and Agro-Ecosystem Analysis observations. After graduating from the fieldschool many farmers were interested to continue discovery-learning activities. One of the opportunities to study more is through field studies. This is a further step to science by farmers (versus the traditional science by extension workers, IPM trainers, researchers). In this follow-up activity farmers decide the topic of their study, they design the hypothesis, the trial, decide the parameters and – with assistance of the IPM trainer- they measure and analyse the results at the end of the season.



Although it is not easy to break the conventional method of research with farmers, the participatory approach to set up studies by farmers themselves has been implemented successfully. In 2000 twenty-four such studies were conducted, and in 2001 twenty-one in several districts.

Next year the plan is to train farmer trainers in these tools. If farmer trainers learn how to conduct exercises to facilitate farmers studies there is even more guarantee that it will be based on farmers' real needs.

### 4.3 Participatory planning

Most farmers take part in a Farmers Fieldschool with the idea to gain more agricultural knowledge. However, often they discover: IPM goes far beyond bugs and rice. The process of learning about the ecology leads to transformation in the way people think about their world. During the course of the Farmers Fieldschool participants often develop a coherent group that feels able to tackle several other problems in their community. As a result of this empowerment, many FFS graduates express a wish to continue with follow-up activities after the FFS. One possibility is to focus more on community development via the process of participatory planning.

In 2000 and 2001 in total in twenty-seven farmers' group have conducted participatory planning and implemented several agricultural related activities, such as: rice-fish farming, bee keeping, maintenance of irrigation canals etc. Some farmer communities just wanted to have another Farmers Fieldschool, to facilitate participation of their neighbours or fellow farmers.

## 5. Other Developments

### 5.1 Vegetable IPM

In recent years, vegetable cultivation for income generation for poor farmers has appeared as a sustainable enterprise. The climate of the mid hills is favorable to both summer and winter vegetables. Because pesticide use is higher in vegetables than in rice, the government as well as farmers have a high demand for IPM in vegetables. In 2000 a start was made a series of field studies in different crops (crucifers, solanacea, cucurbits). In 2001 the results were compiled and evaluated in a vegetable IPM curriculum workshop.





During this workshop participants (IPM trainers) learned to design discovery-learning exercises and developed a tentative curriculum for a season-long Training of trainers.

From mid July till Mid October, a full season TOT was conducted for 34 officers, 30 government (assistant plant protection officers, horticulture officers) and 4 NGO staff. These new graduates will organise vegetable IPM FFS in their respective working district the coming season.

## **5.2 Post-harvest activities**

Studies showed that high losses of rice arise during post-harvest, particularly in the early rice crop. Under guidance from World Education, local NGOs have conducted exercises to reduce the losses occurring after the harvest of crops and during storage. These exercises have led to a considerable reduction of the losses. The post-harvest activities have been much appreciated by farmers and call for expansion in the nearby future. In the coming season government officers and/or farmer trainers will be given the opportunity to share the experience of these new activities.

## **5.3 Gender issues**

The National IPM Programme in Nepal is committed to provide women and men equal access to their training. The Programme wants to implement its activities on a gender equal basis. That this is not easy and straightforward is the experience during the three-year implementation of the programme. Female participation in farmers' fieldschools (FFS) varies from 100% in some areas (e.g. Bhaktapur district) to 0% in Terai communities. Among the IPM trainers only 7% is female.

The important role of women in agriculture in Nepal requires to be reflected in the IPM programme. Despite the fact that most IPM trainers are male and while given little training on gender issues, the participation of women has increased in the farmer fieldschool. Gender remains an area however that needs attention in the nearby future (see box below).

# **6. Future Plans and Priorities**

Based on the review of the present status of IPM in the country, efforts are to be made to sustain IPM in Nepal through governments and NGOs.

## **6.1 The next 12 months**

In the near future the following activities are planned:

- a) Improved monitoring of field activities
- b) Expand the number of farmer trainers



- c) Strengthening of farmers trainers associations
- d) Improve and broaden skills of farmer trainers (training, facilitation skills, farmer studies, participatory planning)
- e) Develop a vegetable IPM Programme in the districts
- f) Strengthen NGO/GO collaboration
- g) Improve publicity of project activities, raise farmer and consumer awareness
- h) Increase gender sensitivity among IPM trainers and farmers
- i) Expand the IPM curriculum with post-harvest exercises
- j) Strengthening linkages with national scientists and other the institutions involved in research and development of sustainable agriculture
- k) Search for ways to secure further funding for the National IPM Programme.

## 6.2 2002 and beyond

Although the IPM Programme in Nepal has made tremendous progress since its launch in 1997, it is still vulnerable and needs further support in order to sustain the activities. HMG/N will increasingly take over the responsibilities to organise and fund district IPM activities. Nevertheless, external financial and technical support will be needed for another 4-5 years to come in order to achieve the following:

- Improve the monitoring system
- Strengthen collaboration with NGOs
- Develop farmer trainers skills
- Build up farmers IPM organisations
- Strengthen links with research institutions
- Broaden and sustain the IPM approach (different crops, related sectors, institutional development).

## ANNEX 1:

# The Kathmandu Post

Kathmandu, Kartik 02, 2058. (17 Oct 2001)

## Toxic substances

The seventy four tons of outdated and unwanted pesticides laying in various warehouses across the country have been posing a serious threat to humans as the government has not been able to dispose of them. After realizing the seriousness of the situation, the international environmental lobby group Greenpeace has taken on the task of cleaning up six tons of pesticides stored at Khumaltar in Lalitpur district. This is the first phase of the clean up campaign undertaken by Greenpeace to prevent a human catastrophe in our midst. Hazardous substances which are now banned worldwide have been laying unused and undisposed of in Nepalgunj and Amlekhgunj, besides Khumaltar. The multinationals, which exported the substances to this country as experiment products, have not come forward with any technical or financial assistance to take care of the toxic substances. However, Greenpeace activists have now begun the task of repackaging the pesticides for their immediate disposal. It may take years to complete the task, if Nepal does not get any financial and technical assistance. The gravity of the problem is due to the fact that such toxic materials are not only a health hazard but also highly dangerous to the environment.

The banned chemical pesticides — deildrin, organo chlorinated mercury and DDT — have been laying around in neglect ever since the country received them in the form of assistance from western countries. Though banned worldwide, such hazardous substances are still smuggled into third world countries. Degenerated pesticides like this stored in third world countries alone are estimated to be around half a million tons. Until 1990 Nepal had not even realized that such substances have been banned. Had this country been aware of the ban we would not have been duped into accepting them in the first place and we would not now be saddled with the unpleasant and arduous task of disposing of tons of them. The pesticides have been poorly stored in leaky containers and torn packaging for the last twenty five years. If an accident occurs at any of these warehouses, it can pose a serious threat to human life, leave aside the environmental damage the country will witness.

The government cannot simply continue to largely ignore the presence of such deadly substances in our country and the risks they pose. It has to dispose of them sooner or later to prevent any untoward accident. These toxic substances can cause disorders of the nervous system, cripple the brain and spine, and result in birth defects and kidney problems. The companies, which shipped them to this country, should be made to pay for the clean-up.