

# Status of plant protection activities in Nepal

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## **Plant Protection Directorate**

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Nepal

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Capacity building in use of the International Phytosanitary Portal (IPP) and  
APPPC website for information exchange

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Kuala Lumpur, Malaysia

## Country at a glance

- Nepal: Sovereign, landlocked, mountainous South Asian country
- Sandwiched between two giant countries in the world, the greater China-in the North and the India in 3 parts
- Rich in biodiversity and water resources
- Land area of 147,181 Km
- Population : Nearly 30 million; Population growth rate: 2.25%
- 80 percent of economically active labor force
- 65.6 percent of the total population depends on agriculture
- Contribution of agriculture to GDP: 42 %

# Map of Nepal

F A R W E S T E R N

M I D - W E S T E R N

China

W E S T E R N

C E N T R A L

E A S T E R N

HDI

- Less than 0.420
- 0.420-0.451
- 0.452-0.499
- 0.500-0.547

India





Mount Everest





## Fish Tail Himal





## Annapurna Himal





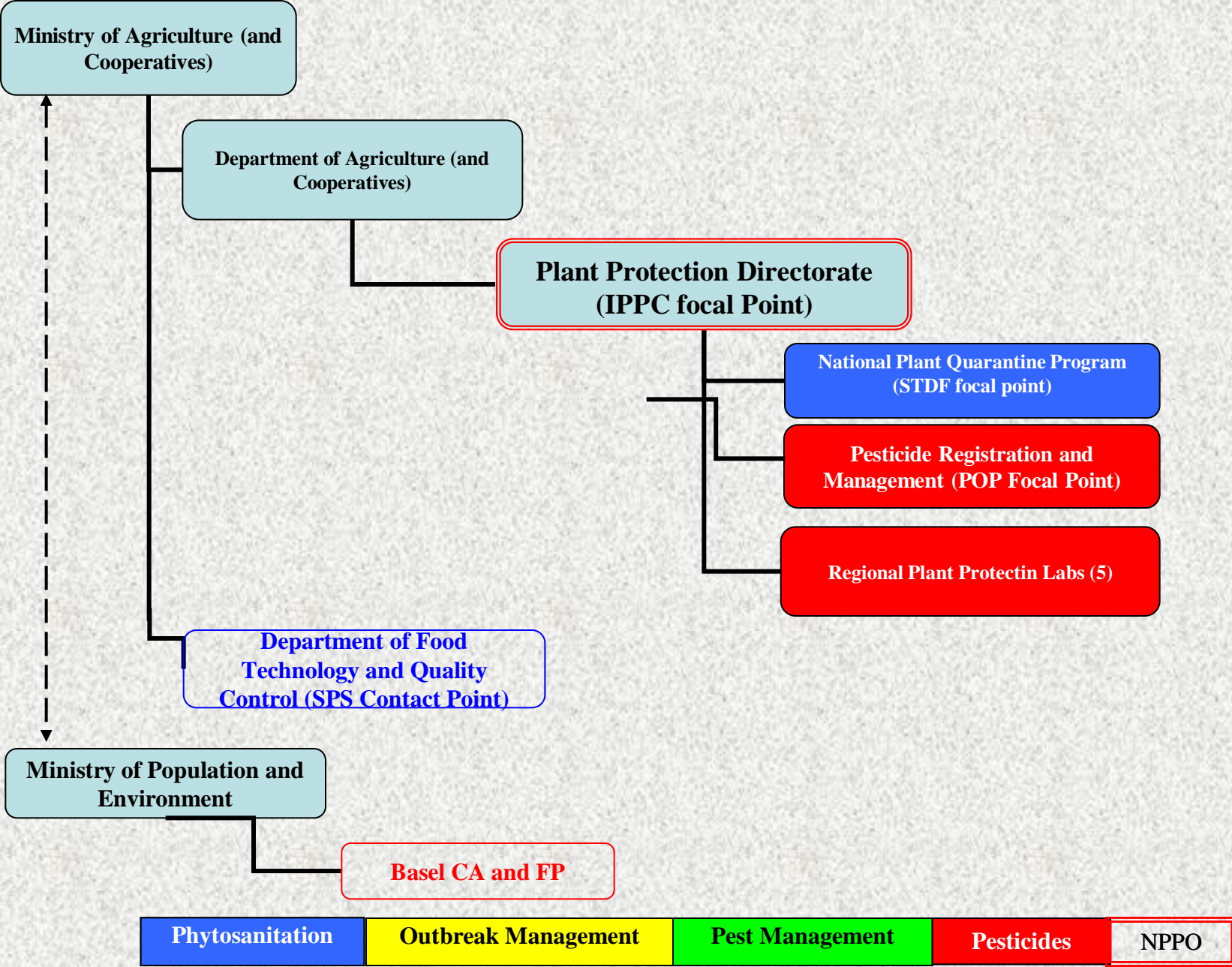
**National Flower**







**Organisation Chart**



## Agricultural situation in Nepal

Physical region	Area in Km2		% of cultivated area of the country	% of cultivated area of the region
	Total	Cultivated		
Himalayan	51313	1436	4.0	2.8
Hills	61816	9337	26.0	15.0
Terai	33851	25138	76.5	17.0
<b>Total</b>	<b>147181</b>	<b>35912</b>	<b>100.0</b>	<b>24.0</b>



**Agriculture: Major occupation, GDP contribution (more than 42%)**

**IPM Programme active since : 1997 now in second phase (Norwegian Govt. Support and technical backstopping from FAO-Nepal)**

**Estimated number of farmers trained : 75207 (60% Female)**

**Estimated number of trainers currently active : 2014 (IPM Programme 907 - I/NGO 107)**

**Main Crop involved : Rice, vegetables, potato, legumes, also tea, coffee and citrus**

## Pesticide use situation

- 3 pesticide formulators, 50 pesticide dealers, 4000 licensed pesticide retailer in the country
- Mainly organophosphate, carbamates, synthetic pyrethroides, fungicides, herbicides, rodenticides, botanical pesticides, bio- pesticides and pesticide used in public health.
- Pesticides not extensively used in Nepal, except in some crops and locations
- An average 142g/ha. of pesticides. However, in cotton (2560 g/ha), tea (2100g/ha) and vegetables (1400g/ha)
- On the basis of a.i.: 212 ton
- Worth of: 207.69 million NRs (2.95 million US \$)
- Insecticides (botanicals and public health): 29.82 %
- Fungicides: 61.12 %
- Herbicide 7.43 %,
- Rodenticides: 1.17 %
- Bio-pesticides: 0.67 %
- 0.2 % others (Bactericides, Acaricides, Nematicides and rest).

# Pesticide Registration Information

- Trade products: 470
- Technical names: 88
  - Insecticides: 44
  - Fungicides: 24
  - Herbicides: 12
  - Rodenticide -3
  - Bio- pesticides: 4
  - Bacteriacide - 1

## Trends and value of pesticide import

Year	Quantity (kg. a. i.)	Rupees (NRs, 000)
1997	56,172.56	5,13,87.94
1998	77,856.87 (+)	6,60,59.84
1999	1,08,427.82 (+)	8,45,17.61
2000	1,96,064.58 (+)	14,74,38.80
2001	1,46,152.48 (-)	14,86,20.34
2002	1,77,591.10 (+)	18,35,35.85
2003	1,76,372.81 (-)	12,31,58.14
2004	1,54,082.05 (-)	13,10,22.8
2005	1,31,270.43 (-)	13,00,25.6
2006	1,31,284.55 (+)	13,31,28.45
2007	3,47,494.50 (+)	27,26,81.3
2008	3,12,740.50 (-)	23,33,10.75 (-)
2009	2, 11, 079.34 (-)	20,76,88.05 (-)

## Summary of date expired pesticides accumulated in Nepal

SN	Pesticide group	Amount (mt)	% of total
1	Mixed (PoP and OC)	23.61	31.80
2	Organochlorine	10.48	14.02
3	POPs	10.05	13.54
4	OM	8.38	11.29
5	OP	7.95	10.72
6	Fungicides	4.45	5.99
7	Rodenticides	2.60	3.51
8	Fumigants	2.52	3.40
9	SP	1.86	2.52
10	Herbicides	1.84	2.48
11	CM	0.54	0.73
12	Grand total	74.25	100

## Pesticide policy for the enforcement of Pesticide Act

- Pesticide act (1991) and pesticide rules (1993) effective since 16 July 1994, now proposed in 2011 for newer amendment
- Under consideration in Parliament
- Pesticides are registered and regulated under the pesticide act and rules
- Act regulates the imports, production, sale, distribution, marketing and use of pesticides for management and preventing pesticide risk
- Under the pesticide act 1991, a **Pesticides Board** is functional comprising various Ministries, pesticide association, scientists and consumers group
- Major tasks: implementation of national and international rules and regulations



## Banned Pesticide in Nepal

Chlordane	Toxafen
DDT	BHC
Dieldrin	Lindane
Endrin	Phosphamidon
Aldrin	Organo mercury fungicides
Heptachlor	Methyl parathion
Mirex	Monocrotophos

Phorate and Methomyl are in the process of banning

Methyl bromide: 2015 for strictly for quarantine purpose

## Stock of obsolete pesticide

Obsolete pesticide is 74.265 mt + 43 cylinder of methyl bromide (50 kg) stored in warehouse at 24 locations of the country

## **Pesticides Board/Committee**

### **Mandated to:**

- Advise Nepal government in the formulation of national policy regarding pesticide,
- Maintain coordination between private and government sectors in the production and distribution of pesticides,
- Rational encouragement of the private sectors to invest in the industry,
- Regulate or control the quality of produce by the industry operated by private/government sectors, and
- Establish standard for pesticide

### **Under the board, 2 sub- committee:**

- ❖ Technical sub- committee (with 7 member)
- ❖ Legal sub- committee (with 3 member)

## **The Pesticide Registration and Management Division**

- Established in 1994 under the Act
- To operate the pesticide registration and management activities.

### **Duties of PRMD:**

- Register pesticides and issue certificate upon receiving application
- Ascertain the criteria for rational and appropriate use of pesticides

## Pesticide Registration

- Registration is required for each formulation and even brand of a single technical compound.
- The pesticides are registered in the name of Trade Product for 5 years with or without provision/ condition.

## Pesticide registration procedures

- Application form for registration of pesticides with NRs.5 ticket.
- Pesticide registration fee RS. 1000/-
- Letter of Authorization from the Manufacture/Formulator Company.
- A statement of the need to use in Nepal
- Summary of intended use pattern
- Ecotoxicological data
- Efficacy data
- Residue analysis data
- Copies of at least one foreign registration certificate (evidence that the product is registered overseas)
- Three copies of the original label
- Approved labels
- Leaflets in Nepali language - for importers
- Labels and leaflets in Nepali Language - for domestic formulators.
- For research no attachments are necessary

# **National IPM Program and outcomes**

## **First phase of IPM**

- Began: 2003: In support of Gov of Norway
- Outcomes: Trained human resources (technicians and farmers)
- Support to program initiatives
- Created awareness among farmers, principles and method of IPM
- IPM based on field studies, crop productivity (rice and vegetables)
- Institutionalization and mainstreaming of IPM to regular program of Government, NGOs
- The first phase has forged the roadmap to second phase of IPM

## **Second phase of IPM**

- Began: January 2008 – Dec 2012 in support of Gov of Norway
- Objectives: consolidation, intensification and institutionalization of the outcomes of first phase of IPM,
- Up scale IPM to all 75 districts
- Theme is not just about pest control
- Holistic and sustainable management production management
- Food security, reduce poverty and safe gourd environment
- Major focus: Developing and spreading successful IPM technologies
- Increase agriculture production, promote marketing to IPM crop products
- Far beyond the class room of the institutions and researches

## **Achievements of IPM Programme**

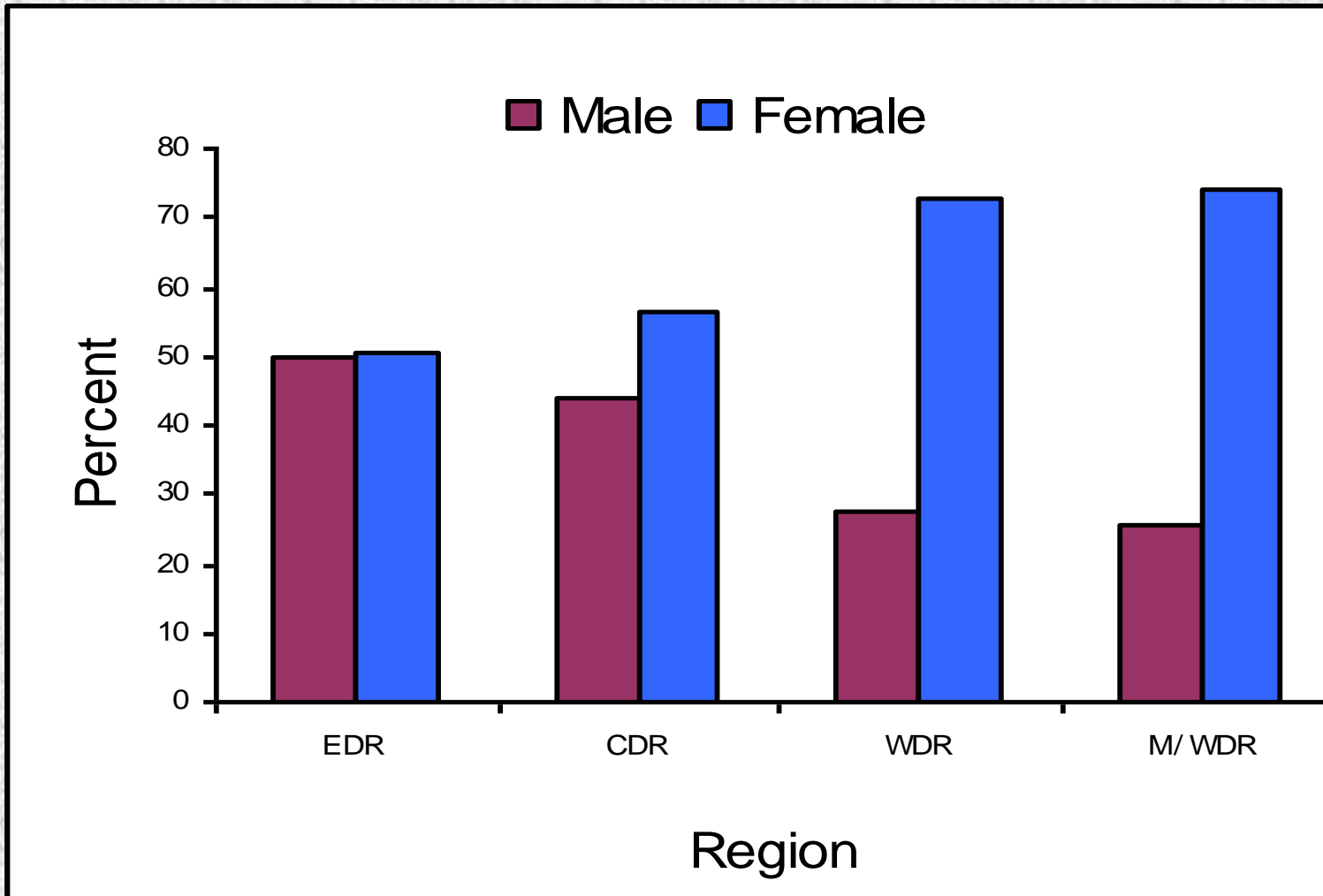
- Farmers trained : 72957 (60% Female)
- Trainers currently active : 1149 IPM Programme (1042 - I/NGO 107)
- Farmer Field School (FFS) implemented : 1010
- FFS in Rice in Rice : 661
- FFS in Vegetable : 649
- Good understanding among farmers on ecology based crop production.

## **Some Impacts of IPM Programme**

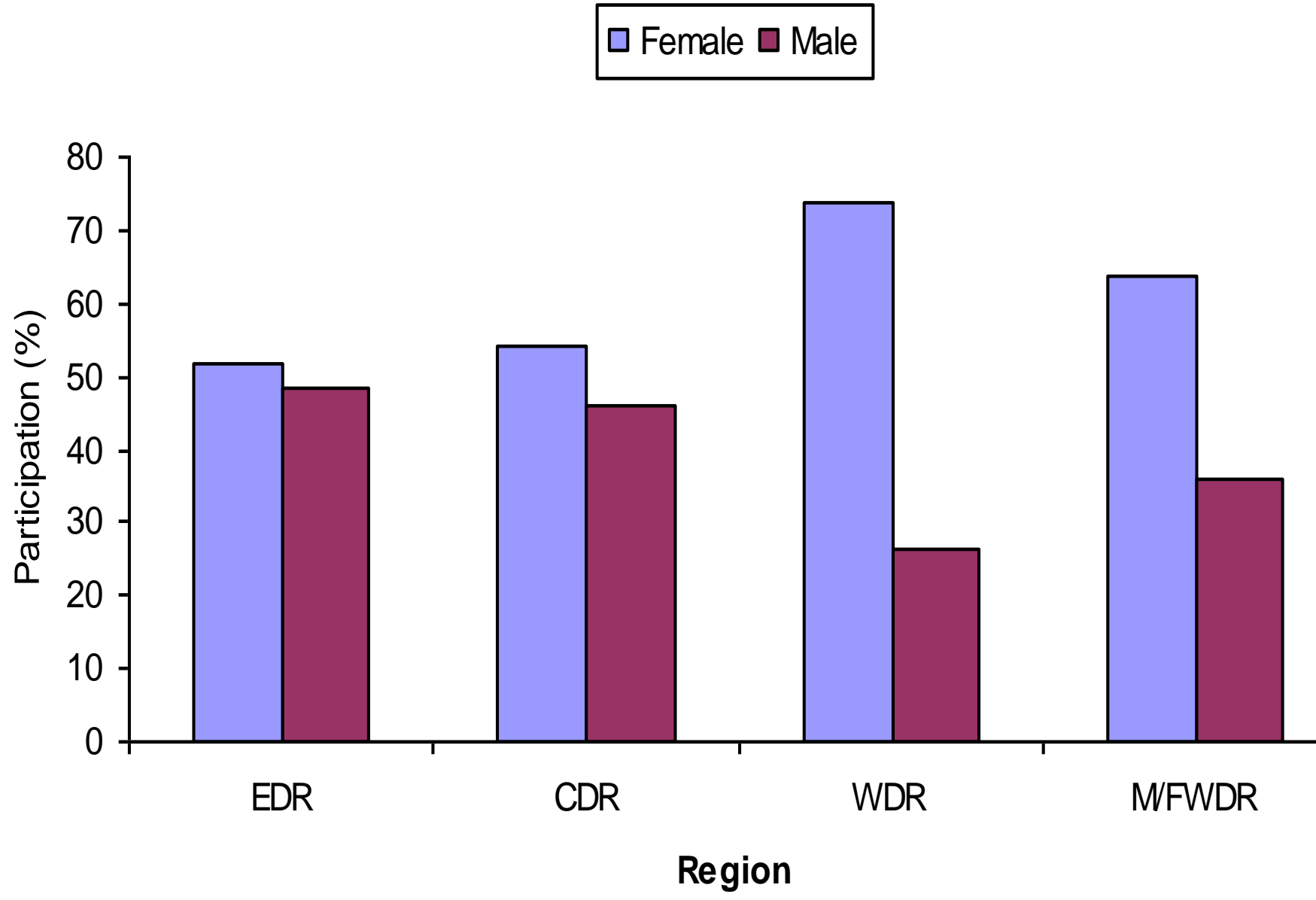
- Reduction in pesticide use by 40% in FFS areas.
- Increase in crop yield from 15 – 25% in rice and 32-48% in vegetable as compared to farmers' adopted practice.
- Gradual increase in bio and botanical pesticides.



# Gender Mainstreaming



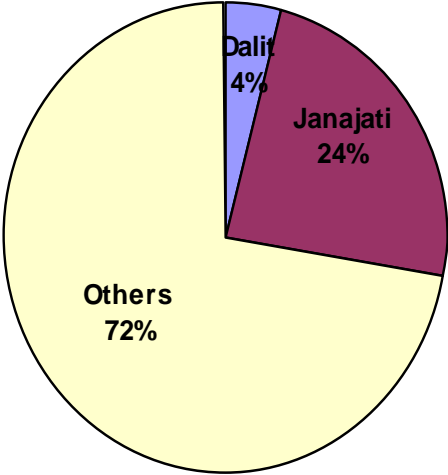
**Male and Female participation in rice FFS**



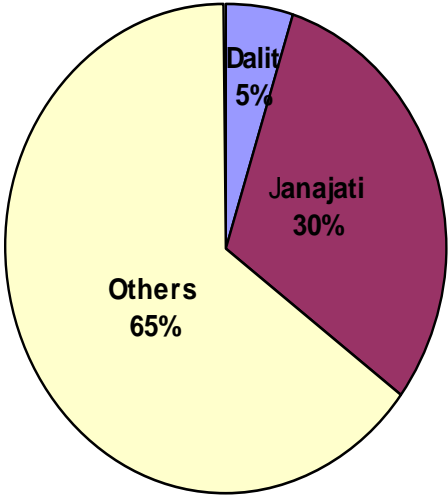
**Male and Female participation in vegetable FFS**

# Social Inclusion

Rice



Vegetable



## **Other Visible Impacts**

- **Ecosystem Understanding**
- **Reduction in use of Hazardous pesticide:**
- **Health and Environment : Over 80% of the IPM farmers agreed to a better health condition and think that their doctor visit and medicine cost reduced.**
- **Food Security - Average income of the farmers improved in program areas due to increase in yield following IPM practice. In the FFS areas 15-25% yield increase was recorded in rice and 32.7-48.3% in vegetables.**
- **Awareness and Peace building**
- **Linkage, Coordination and Collaboration - Farmers and local government have shown higher enthusiasm in IPM program. Involvement of NGO/INGO**

## **Government commitment**

- Nepal signatory country of International Conventions related to pesticide
- Stockholm Convention,
- Basel Convention,
- Rotterdam Convention
- Montreal Protocol (MOEST 2008)
- As a commitment and an obligation to these global treaties Government of Nepal has banned an import and use of POPs
- WTO member

## **National Quarantine Program**

- NPQP: Governing body
- 15 plant quarantine checkpoints and sub-checkpost
- Including them one in Tribhuvan International Airport
- 5 Regional Plant Quarantine Offices in the Indian borders
- 3 Checkposts and sub-check posts located in Shino-Nepal borders
- Mandatory for SPS measures

## Future strategies of Directorate

Pesticide monitoring system while import, formulation, storage, sale and disposal

- Deregistering of highly toxic pesticides (extremely hazardous) IA and IB of WHO classification
- Promotion of Bio-pesticides/Bio-control agents
- Promotion of IPM and other alternative pest management strategies
- Establishment of central, regional as well as community level laboratories for quality, residue and toxicology analysis
- Capacity building of pesticide importers, resellers and farmers
- Promotion of environment friendly formulation
- Strategies for first in first out policy (minimize pesticide being as obsolete)
- Disposal of the obsolete pesticides (75 mt in the country)



Namaste