ACP-ACTAE Project
Agroecological Crop Protection

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2) Climate change and natural resources management
3) Towards Agroecology
4) Crop Protection: chemical basis → not ecologically sustainable; side effects & negative impacts
5) Reducing pesticides: main issue in SEA

It’s needed
- to answer to the current demands (socio-economic, ...)
- to anticipate answers to the future demand (ecology, socio-economic, environment, health, ...)
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**Crop Protection : context and issues / in SEA**
What is Agroecological Crop Protection?

Agroecological Crop Protection = the declension of Agroecology to Crop Protection

In Crop Protection:

- a rational approach for ecosystem sustainability: to apply principles of Ecology
- a new orientation/paradigm: Agroecological Crop Protection
- Positive consequences for pesticide reduction, environment, health, socio-economic aspects...
- in some cases: a possible compatibility with OA
What is Agroecological Crop Protection?

FAO: the ways to develop Agroecology
What is Agroecological Crop Protection?

Agronomy (set of disciplines)

Ecology (set of disciplines)

Agroecology (set of disciplines, scientific approach)

Conservation Biological Control (approach)

Conservation biology (discipline)

IPM (set of techniques)

Biodiversity (aerial, soil)

Conservation Agriculture and agroecological soil management

Agroecological Crop Protection (methodological and ordered approach)
What is Agroecological Crop Protection?

2 axis: enhance **biodiversity** (vegetal/animal) and **soil health**

- **communities management** (pesticide management)

1. Biodiversity

2. Soil health

- compatibility and coherence with CA
ACP → community management (pesticide management)

**Work axis and research focus of ACP:** biodiversity and health of the soil

- **Community management**
  - vegetal communities
    - cultivated plant(s)
    - other vegetal resources (i.e. habitats of beneficials,...)
    - bioagressors
    - natural enemies
    - pollinators
    - other functional groups (detritivores, non pest herbivores, ...)
  - animal communities
    - trophic relations between functional groups

- **Soil management**
  - enhancing soil health
    - fertility, structure, erosion, evapotranspiration, microorganisms, ...
  - optimising interactions between soil biodiversity and aerial biodiversity
What is Agroecological Crop Protection?

3 pillars to implement in the field

The three pillars of AMCP

Sanitation

Conservation Biological Control

Habitat management
What is Agroecological Management for Crop Protection?

ACP in 7 points

1. Protection based on the scientific principles of agroecology
   - reasoning
   - knowledge

2. Practices based on 2 axis
   - biodiversity and soil health
   - harmonised management of communities and soil
   - strategy and ordered sequence of practices

3. Priority to preventive measures
   - both in the principles and in the practices

4. Curative measures as a last resort
   - both in the principles and in the practices
   - chemicals used as a last resort in this last resort

5. Three pillars
   - sanitation
   - habitat management
   - conservation biological control

6. Large scales
   - space
   - time
   - consultation process and social dialogue

7. Global approach
   - systemic
   - collective
   - participative
   - ecological
   - social and economical
   - health
   - environmental
What is Agroecological Crop Protection?

- Concepts
- Applications in the fields
- Keys of the adoption of innovations
- Keys of the agroecological transition
2 phases for ACP dynamics in ASE

2017-2018: to exchange, to be on the same level of information and knowledge, to take into account SEA context and issues, to build a scientific dynamics, to prepare mid-term activities

> 2019: to implement actions in partnership, in order to answer:
  - to the scientific objectives
  - to the issues of the Development
ACP-ACTAE project

ACP-ACTAE: collective paper and brochures / 2017-2018

1. Collective exercice
   - state of the art and current situation of Crop Protection
   - perspectives to develop agroecology in Crop Protection in a scientific review; Vietnam - Myanmar

2. Brochures and flyers
   - In English
   - In National languages

And other proposals (booklets...)
ACP-ACTAE: collective paper and brochures / 2017-2018
Agro-ecology >> Using functional biodiversity to boost agrosystem performance

Agro-ecological crop protection
Applying the principles of agro-ecology to crop protection

Agro-ecological crop protection (ACP) is an innovative, ordered approach that stems directly from applying the principles of agro-ecology to crop protection, in which ecological aspects are truly centred-stage. ACP aims to reconcile efficient crop protection against pests and diseases with the socioeconomic, ecological, environmental and sanitary sustainability of agro-ecosystems. It is also intended to make a substantial contribution to the switch from agrochemical-based practices to agro-ecological practices within cropping systems.

Crop protection lies at a crossroad

In the field of crop protection Integrated Pest Management (IPM) has been the prevailing paradigm since the 1950s, based on a concept devised by Californian entomologists. IPM has contributed to the positive changes in crop protection since the 1950s. However, without questioning the reasoning behind the concept, it is now appropriate to wonder about the coherence between current concerns about crop protection, notably with a view to promoting the principles of agro-ecology, and current practice in the field, which often centres on using agrochemicals, in both North and South.

Agro-ecological crop protection (ACP) lies at the crossroads between several research and management concepts and fields:
- agro-ecology, which can be seen as both a scientific discipline in its own right (it involves integrative studies relating to agronomy, ecology, sociology and economics, on various scales) and an agro-ecosystem management method;
- integrated crop protection, which has meant pooling the efforts of researchers and practitioners for the past 50 years or more, but which is now showing its limitations in the field;
- biodiversity management within agro-ecosystems, which for both research and management purposes draws on conservation biology within natural ecosystems.
Minutes of the ACP-ACTAE: ACP Workshops / 2017

Hanoi, Agricultural Genetic Institute (AGI), Pham Van Dong Str.
April 25-26, 2017

Nay Pyi Taw, Myanmar (3rd and 4th May, 2017)
ACP Regional Workshop, My Tho, Vietnam, 29-31, August 2017
Regional Summer School
12-16 March, 2018
Can Tho, Vietnam
Agroecological Crop Protection

Co-organized by
Can Tho University & CIRAD
ACP-ACTAE project

Summer School «ACP in SEA» (12-16 March 2018)

For invited participants only

One week – Objectives

to know about and jointly exchange the principles of ACP and to understand the concepts, methods and tools for their implementation.

Participants (30, SEA):
advanced-level graduate students, junior faculty, along with senior researchers and teachers in SEA willing to improve their skills with regards to Agroecological Crop Protection. Agricultural advisors are also welcome, provided that they have a solid scientific background.
THANKS FOR YOUR ATTENTION