



# Master in Sustainable Crop and Environmental Protection (PDCE)



**Training area:** Agricultural sciences

**Course:** Environment, Agriculture

**Specialties:** Sustainable Crop and Environmental Protection

**Grade:** Master

**Purpose:** Professional

**Duration of training:** 02 semesters

**Training venue:** AGRHYMET Regional Centre. Niamey (Niger)

## Background

In West Africa and the Sahel, limited water resources and poor soils lead to food vulnerability. In addition to these inherent extreme ecological conditions, there are climate change effects. Indeed, climate change has important consequences on the Sahelian cultivated systems, but also on crop pests and their parasites (pests and pathogens, antagonists, parasitoids) and stored food. An immediate consequence is the increase of phytosanitary problems following the increase in pests and the use of obsolete control practices. Indeed, in the face of increasing attacks by crop pests, producers practice preventive pesticide treatments. Non-targeted treatments destroy natural enemies of pests and pathogens, thereby stimulating pest proliferation. To prevent locust invasions, significant amounts of pesticides are made available to crop protection services. These stocks are now a major threat to human health and the environment. The storage of obsolete pesticides and the management of pesticide applications, spills and container leaks directly result in soil and ground water pollution and are a major challenge for States.

## Objective

The objective of the Master is to develop curricula for the design and implementation of pest management programmes that take into account the environmental, social and economic dimensions of crop protection. As part of this, several modules dealing with agro-ecosystems and natural systems are developed. The alternative control of pesticides (cultural practices, genetics and biological control) is complemented by rational chemical control, Good pest and pesticide management practices and chemicals to protect non-target organisms and the environment. Practical lessons, for the recognition, mass multiplication and use of endogenous natural enemies of the main

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crop pests as well as decision support tools are planned. Finally, pest control approaches are reconsidered to take into account the new adaptations of cultural practices developed in response to climate change

## OUTLETS

Specialist in agriculture, crop protection (CP) and environment; CP project managers, CP specialists in the private sector, NGOs, international opportunities (United Nations Systems) and cooperation agencies.

## TARGET GROUP

The target group will be:

- West African executives from the CILSS/ECOWAS/UEMOA region working in government services, the broader public sector, the private sector, civil society and NGOs, with professional experience in food security;
- Other African executives working in the same sectors;
- Young graduates in rural development.

## PRE-REQUIRED

- Required level: bac + 4/engineer or equivalent
- Knowledge of agronomy, rural economics, field experience in project aiming to improve agricultural production.

## TRAINING PROGRAMME

| Course credits                                      |                  |
|---|------------------|
| Semestre1   | Semester 2       |
| GSP 2101: Management of crop production systems     | Mem 2401: Thesis |
| RPA 2102: Population regulation in agrosystems      |                  |
| TBN 2103: Taxonomy and bioecology of pests          |                  |
| PSU 2104: Phytosanitary survey and monitoring       |                  |
| USP 2105: Safe Use of Pesticides                    |                  |
| GIP 2106: Integrated production and pest management |                  |
| VPA 2107: Crop protection decision support tools    |                  |
| GST 2108: Agricultural testing and survey           |                  |
| COM 2109: Communication                             |                  |
| LAV 2110: Living Language                           |                  |

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