



## COCONUT REHABILITATION PLAN

Côte d'Ivoire Lethal Yellowing (CILY) has already destroyed over 400 hectares of coconut groves in Grand-Lahou and is threatening over 7,000 hectares, including the GenBank located at CNRA that supplies the Indo Pacific and West Africa region. CILY is impacting over 10,000 smallholder farmers that depend on coconut for income and nutrition. Therefore, prompt actions are required to halt disease spread and improve the livelihoods of the coconut farmers in Grand-Lahou.

The following is a plan should be implemented minimum after three years of assessment of the resistance trials in Grand-Lahou and Ghana.

The plan was designed to relaunch the coconut sector in Grand-Lahou and limit the spread of the disease into new coconut-growing areas within Grand-Lahou and throughout Côte d'Ivoire. The plan will start by replanting those coconut plantations devastated by CILY, in selected farms, which will serve as references to farmers, stakeholders and extensionists within the area to promote its proper implementation. The plan will utilize those cultivars and hybrids confirmed as tolerant or resistant to CILY after three years of assessment of the resistance trials in Grand-Lahou and Ghana. These will be made available to farmers through CNRA.

### GENERAL OBJECTIVES:

1. To relaunch the coconut sector
2. To limit the devastation of coconut farms by CILY
3. To bring relief to the farming population in the coconut-growing districts of Côte d'Ivoire.

## **SPECIFIC OBJECTIVES**

1. Enhance production and productivity of the existing and newly established coconut farms
2. Contain/limit the destruction of coconut farms by CILY
3. Initiate a value chain approach to sustain coconut production.

The rehabilitation plan should respond to three main components, each of them with their respective activities:

### **COMPONENT 1. IMPROVEMENT OF COCONUT PRODUCTIVITY**

#### **ACTIVITIES**

- A. Replanting
- B. Yield intensification
- C. Value addition

### **COMPONENT 2. RESEARCH AND DEVELOPMENT**

#### **ACTIVITIES**

- A. Adaptive Research

### **COMPONENT 3. MANAGEMENT, MONITORING AND EVALUATION, FOLLOW-UP PLAN**

#### **ACTIVITIES**

- A. Co-ordination and project management
- B. Monitoring and Evaluation
- C. Follow-up plan

The explanation of the different activities under each of the components of the rehabilitation plan is described as follows.

## **COMPONENT 1. IMPROVEMENT OF COCONUT PRODUCTIVITY**

### **A. Replanting**

1. Conduct a survey to accurately demarcate the devastated zone from the replanting area by using the econometric model developed by the project.
2. Establish nurseries in the replanting zone. This will prevent daily movement of trucks and people from the disease zone into the non-affected area. This will also cut down cost of transporting bulky planting seedlings over long distances.
3. Replant devastated farms with disease resistant/tolerant varieties confirmed from the resistance trials in Côte d'Ivoire and Ghana.
4. CNRA will select those hybrids/cultivars/progenies that better respond to CILY from the resistance trials upon lab testing.
5. CNRA will establish supply points in strategic areas, and will made seedlings available to farmers for re-planting and for nurseries. CNRA will provide planting technical assistance for farmers as needed.
6. For the active disease zone (areas with most palm trees in stage 3 or terminal stage 'telephone pole'), no planting of susceptible varieties will be strictly enforced.
7. Remove alternative host of the CILY phytoplasma as specified in the farmer field mini-guide before re-planting.
8. UNA and CNRA entomologists should perform inspections of the replanting areas for *Nedotepa curta* populations, or any other Hemiptera specimens that may increase their population levels, as well as conduct lab testing on collected specimens to take actions to mitigate disease spread.

### **B. Yield Intensification**

1. This is to maximize nut yield in mature CILY-free coconut farms (less than 70 years).
2. Apply Nitrogen and Potassium fertilizers alone, as well as poultry manure in areas where soil phosphorous is not limiting to double nut load.

3. If possible, provide micro-credits to farmers to apply fertilizers and for basic field operations. Alternatives for this could include linking farmers directly to processors who will lend money to the farmers. The credit is deducted when the farmer sells the nut to the processor.

### **C. Value addition**

1. CNRA, ANADER and UNA to promote a society to partner farmers that produce home-made coconut oil with coconut oil processors either by selling the coconut oil, or selling seednuts to the processors.
2. UNA and ANADER to extend Women Coconut Fairs to other coconut-growing areas of Grand-Lahou and into the urban zone for women to commercialize their coconut products.
3. UNA and ANADER to link farmers with identified businesses from the coconut private sector to train them in how to produce coconut by-products from the kernel, fibre, shell, stem, etc.
4. UNA and ANADER to expand cassava yards for Women Groups in other coconut-growing areas of Grand-Lahou, and provide technical planting assistance when needed.

## **COMPONENT 2. RESEARCH AND DEVELOPMENT**

### **Adaptive Research**

Adoptive field trials will be establish to replicating all the technical package given to farmers, including replanting and intensification to provide proper guidance and advice to farmers.

1. For the first three years, establish adaptive research plots in pilot farms and field schools with an agronomist guidance to show farmers coconut palms intercropped with banana, plantain or maize as a practical guidance plot.

2. For the first three years of replanting, establish adaptive research plots in pilot farms and field schools with replanted varieties.
3. For the first three years of replanting, establish adaptive research plots in pilot farms and field schools to show applications of Nitrogen and Potassium fertilizers and poultry manure, and their effect on the replanted varieties.
4. For the first three years of replanting, establish adaptive research plots in pilot farms and field schools that will be the coconut seedling nurseries, and assign an agronomist to supervise this task in all the farms involved in the replanting plan.
5. Continue the monitoring and assessment of the resistance trials in Grand-Lahou and Ghana.
6. Organize bi-weekly workshops with farmers and stakeholders to inform on the updates and progress of the rehabilitation plan.

### **COMPONENT 3. MANAGEMENT, MONITORING AND EVALUATION**

#### **A. Co-ordination and project management**

1. Establish a Project Management Unit (PMU) to supervise the implementation of the rehabilitation plan, and subunits that will respond to the PMU for the coordination of all the activities.

#### **B. Monitoring and Evaluation**

1. Establish a separate M&E team.
2. Develop a M&E logical framework with indicators, means of verification, responsible and assumption.
3. Design training programs for farmers and extensionists.
4. Coordinate evaluation and technical visits to adaptive plots and areas replanted of pilot farms and field schools.

### **C. Follow-up plan**

5. Designate a 'follow-up team' that includes an agronomist, a plant pathologist, a breeder, and two sociologists.
6. Design gender-responsive questionnaires and forms to fill out by men and women farmers involved in the rehabilitation plan.
7. Conduct monthly surveys and interviews to farmers and stakeholders to assess the adoption and progress of the plan.
8. Organize information workshops for farmers and stakeholders to communicate the results from the surveys and record inputs and recommendations to improve plan implementation and adoption.
9. Coordinate field visits to adaptive plots and areas replanted with the attendance of policy makers.