# REPORT ON REFORESTATION ACTIVITIES
2017-2021

Protecting the Kwabre-Tanoé transborder forest has always been one of the main goals of this project, if not the prime one. It worked through the implementation of patrolling and sensitization strategies but also through some planting activities.
The approach in Ivory Coast and Ghana was slightly different to be adapted to the CREMA and FAIVG respective goals and objectives. It included some trainings and construction of nurseries, created some jobs and led to the planting of over **77 500 trees in total with an average mortality rate around 24%.**

## I. VARIOUS APPROACHES FOR TREE PLANTING

It has been decided at the beginning of the project with our local partners that the planting activities would be organized per objective.

Therefore, CSRS and the FAIVG divided the tree planting in three categories: the delineation of the forest, which aims at creating a buffer to protect the FMTE, community planting, which increase the tree cover around the FMTE and impact mainly communities and schools, and the agroforestry, which support the development of sustainable practices of production (especially in cocoa and cassava farms).

In Ghana, WAPCA and the CREMA split the activities in three too: the reforestation of the core zone, which aims at rehabilitating degraded area in the forest, the buffer zones development to increase protection around the core of the forest, and the agroforestry.

Throughout the project the agroforestry share increased considerably for farmers got more and more sensitized to the importance of shade trees. This presents a double advantage:

*Figure 1: Collected Baku seeds germinating in nursery*

- it is a good indicator that the state of mind is changing towards more sustainable practices and better understanding of the trees' services.
- trees planted on farmland receive a better monitoring and nurturing which decreases the mortality rate in agroforestry compared to the other types of planting.

In Ghana, most of the seedlings were produced from collected seeds of local tree species (see Species table below). In 2020, the demand of shade trees having increased a lot, WAPCA supported the acquisition of seeds from the Forest Research Institute of Ghana to complete the quantities of collected seeds.

*Table 1: List of species planted in Ghana by the CREMA*

| Common name | Scientific name |
|---|---|
| Emire | *Terminalia ivorensis* |
| Framo | *Terminalia superba* |
| Mahogany | *Kaya spp.* |
| Nyankom | *Heritiera utilis* |
| Baku | *Tieghemella heckelii* |
| Cedrella | *Cedrella odorata* |

## II. INFRASTRUCTURES AND CAPACITY BUILDING

In Ghana, at the beginning of the project in 2017, existing community nurseries for production of tree seedlings were reinforced while new ones were established to reach eight community nursery sites in 8 communities namely Nawuley, Ellenda, Takinta, Adusuazo, Anwiafutu, Kwabre, Mansah Nkwanta and Allowuley. Selection of communities for nursery establishment was done carefully and based on soil quality to maximize the chances of the young saplings to grow strong.
By the end of 2019, the number of nurseries increased to eleven by adding nursery sites in Atwebanso, Edobo and Epu. In 2020, seven nurseries were revived to increase the seedling production capacity (figure 2).


*Figure 2: Location of the revived nurseries*

In Ivory Coast only two nurseries were initially implemented but only one has been functional until the end of the project, and still is. It is in Dohouan and is managed with the support of the CSRS.

Practical trainings in the forest were organized for selected CREMA members in identification and proper handling of seeds during seed collection. At the nursery site, they were taught how to prepare the nursery beds, prepare the seeds for germination, nurture the seedlings (see table below).

*Table 2: List of the training received by the nursery workers*

| Date | Topic | # Male trainees |
|---|---|---|
| 2017 | Seed collection and nursery preparation | 17 |
| 2018 | Good nursery practices and transplanting | 16 |
| 2019 | Seedling handlings and transfer with polypots | 17 |
| **Total** | | **17** |

Since the beginning of the project these **seventeen men have been engaged to work as nursery caretakers**. They receive monthly allowances to maintain the nurseries and nurture the seedlings.

## III. SUMMARY OF PLANTING ACTIVITIES

### A. In Ivory Coast

In the Dohouan nursery, a total of **28,570 seedlings** were produced and nurtured: either from seed sowing or from saplings transplantation.

Since 2017, the planting activities conducted by the members of the FAIVG led 169 farmers (151M/18F) to develop agroforestry on their land. They planted 13,380 trees on about 592 ha of farmland in total (see map on Figure 3).

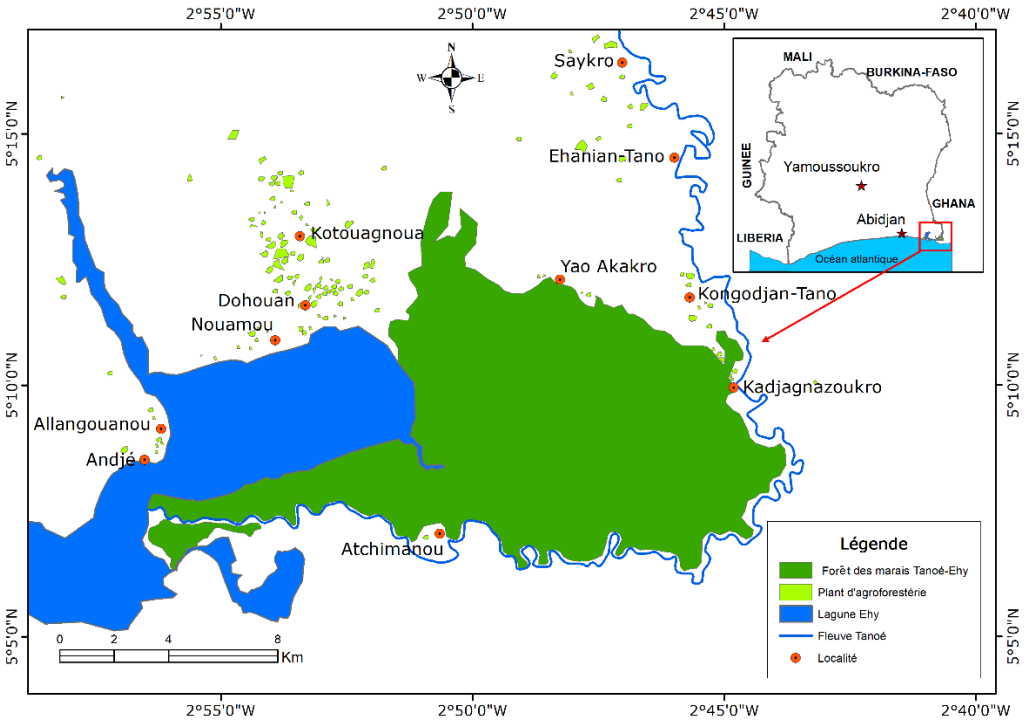


*Figure 3: Map of tree planting activities in agroforestry by the FAIVG*

In parallel, some community planting occurred in villages and schools and the FAIVG started to delineate the forest and have planted 4,5 km so far. Both activities represent about another 8,100 trees planted.

*Table 3: Summary table of planting activities in the FAIVG*

| Ivory Coast | Area (ha)/ Line distance (km) | # planted trees | Mortality rate |
|---|---|---|---|
| **Agroforestry** | 592,25 | 13 880 | 13,65% |
| *Female (18)* | | *3 069* | *3,16%* |
| *Male (151)* | | *10 811* | *16,48%* |
| **Community planting** | N/A | 7 075 | 16,57% |
| **Delineation of forest** | 4,5 km | 1 040 | N/A |
| | | **21 995** | |

Although the mortality rate remains in general at a decent level (see table 3), it is interesting to note that it is immensely smaller for the trees planted and nurtured by women than for the trees monitored by men.

## B. In Ghana

Seeds collection started in 2018 to supply the nurseries and grow the first seedlings of the projects. In total, it is no less than **79,140 seeds that were sowed and nurtured** to produce the needed stock of saplings for the duration of the project.

Out of these 34,405 saplings were used in agroforestry (mainly as shade trees in cocoa farms) and benefitted to 230 farmers (155M/75F).
More than 21,000 other seedlings were planted to protect and rehabilitated the forest of Kwabre in both buffer zones and community planting, and core zones of the forest.

| Ghana | # panted trees | Mortality rate |
|---|---|---|
| **Agroforestry** *(155M/75F)* | 34 405 | 20% |
| **Community planting** | 2 000 | - |
| **Buffer zone** | 17 230 | 50% |
| **Core zone** | 1 860 | 20% |
| | **55 495** | |

The main challenge encountered with the planting aspect of this project was high water levels within the forest core zones. For the past five years, rainfall has been very high within the landscape increasing the general level of the water in the forest. Seedlings cannot survive in high levels of water therefore, there was no planting in the forest core zone apart from in 2019.
Tree planting in the buffer zone of the forest was also halted in 2021 due to the high levels of water in the forest and at the boundaries. Usually, planting resumed during the dry seasons around November until March when water levels receded and dead trees can be replaced.

Our two local partners, the CSRS and WAPCA, have developed slightly different approaches with the local CBNRM structures regarding the reforestation activities. CSRS was more present in terms of organization and support of the nursery management and WAPCA gave the lead to the CREMA, taking this opportunity to create sustainable jobs, even though it remained in charge of the logistics of the dispatch of the saplings.
In both cases, the results are positive and significant:

- Agroforestry developed very fast in the farmers mindset, is now seen as an advantage and demand for shade trees is on the rise.
- The number of trees planted largely exceed the initial target of the project and, more importantly, the numbers of trees actually alive and increasing the forest cover remains way above the target.
- The mortality rate generally remained at a low-level despite the difficulties encountered when planting the buffer zones and the rising of the water levels throughout the years.