**Sustainable Production Systems based on No-Till farming in Ghana and Guinea led by AAPRESID**

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The Argentinian No-Till Farmers Association (AAPRESID) is working jointly with the African Development Bank (AfDB) in the "Design, implementation and training skill program of Conservation Agriculture technology package". This program aims to promote sustainable agricultural systems based on No-Till Farming for soybean and maize crops in Ghana and Guinee.

The initiative attempts to highlight the value of sustainable agricultural farming systems; encourage the transition from family to commercial agriculture, where agricultural production could be considered a business; and support the development of a young class of future farmers, through demonstration and training.

The project included the design, implementation, and technology transfer for the adaptation of the system. Two Argentinian technicians travelled to each country during the entire agricultural season, where they developed activities for agro-ecological characterization of sites, plot cleaning, levelling and development, planting, balanced crop and soil nutrition, weeds, insects and fungus scouting, integrated pest management, and harvest monitoring, supported by Aapresid network.

At the same time, a training and educational program was carried out for local actors with the objective of transfer skills, knowledge and experiences to farmers, students and agronomists either from public or private institution.

"Ghana's project" was held during 2018. In this case, Aapresid technicians developed soybean and maize crops in four plots working closely with Directors and technicians from the Ministry of Food and Agriculture (MoFA) and local farmers. Also, two Argentinian machinery companies supported the project with a planter and a sprayer.

The most recent experience was held in Guinee in 2019. Tasks consisted of conducting fields demonstration in Kankan, Siguiri, Faranah and Tiro where the climate is tropical, with around 1500 mm of annual rainfall, but concentrated in 6 months. In this environment, Aapresid technicians developed soybean and maize crops, with the aim of improving local yields, through sustainable agricultural management.

In close cooperation with the Institut de Recherche Agronomique de Guinée (IRAG) and the Initiative Présidentielle D'appui Au Développement Rural (IPADER), also some private farmers and companies, Aapresid's technicians could explore and evaluate several best agricultural practices as soil amendment, maize hybrids and open pollination varieties, soybean cultivars, crop and soil nutrition, spraying methods and phytosanitary performance for different weeds and pests, planting machinery and equipment, sowing rates, etc.

Also, in collaboration with the National Institute of Agricultural Technology (INTA) of Argentina different simulation models where adjusted to better understand relationships

between crop performance and seeding date, cultivars cycle, row spacing and sowing densities for both maize and soybeans crops.

Furthermore, thanks to the support of an Argentinian machinery company, a no till planter was available for the project and a trial could be carried out for no till cultivation of maize.

Although it is clear that effects of the incorporation of conservation agriculture technologies under no-till should be evaluated in the long term, some results from this first experience are worth to mention: performance of maize hybrids exceeded to that of the OPVs and interaction with the locality could be observed; No till meant a saving in machinery costs; The best planting dates for the localities considered under the program would be from the end of May to June for maize and June for soybeans; in a context of delays in the sowing date, no till sowing have shown better yields than sowing under tillage; Both maize and soybean crops could achieve profitable productivity under farming models of technified commercial agriculture.

Due to the current situation regarding COVID-19, Aapresid technicians has found difficulties to provide technical support for the 2020 season. However, efforts are being concentrated on assuring project continuity next season and developing further projects in the future. The early results have proven that this cooperative and multidisciplinary model is the path towards sustainable development.

## About AAPRESID and No-Till Farming System

The Argentinian No-Till Farmers Association (AAPRESID), an NGO founded and led by farmers, has been promoting sustainable production systems based on No-Till for more than 30 years. Learn more.

The no-till system (NTS) allows producing fibre, food and energy while reducing environmental costs. The NTS is a productive system based in the absence of soil removal and the maintenance of covered soils, also including Good Agricultural Practices (GAPs) related to soil management, crop rotation, balanced crop nutrition, integrated pest management, responsible use of phytosanitary products, and integrated cattle management. This NTS is also referred to as Conservation Agriculture (CA), but the main difference between NTS and other types of CA is the permanent no-till as an inexorable condition.

During these 30 years, a new paradigm of agricultural production has been established, which has proven to be economically, environmentally, and socially sustainable. Some of the benefits of this way of production are less soil erosion, less fuel use, soil organic matter maintenance or improvement, higher water use efficiency, soil fertility increase, lower production costs, higher production stability and higher yields.

## Background

The “Technologies for African Agriculture Transformation” (TAATs) is an innovative, high impact program supported by the AfDB that seeks the introduction and adaptation of modern technologies and best agricultural practices in the savannahs, the development

of commercial agriculture, new private investments in the sector, and strengthening public institutions.

Within this framework, Aapresid provided technical and advisory support to design the most appropriate No-Till based Conservation Agriculture Introductory Program.

## GHANA

## GUINEA

MINISTERE DE L'AGRICULTURE
INSTITUT DE RECHERCHE
AGRONOMIQUE DE GUINEE
REPUBLIQUE DE GUINEE
TRAVAIL-JUSTICE-SOLIDARITE
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Aapresid
INITIATIVE PRESIDENTIELLE
POUR LA TRANSFORMATION DE LA
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