LAND USE

NEW APPROACH

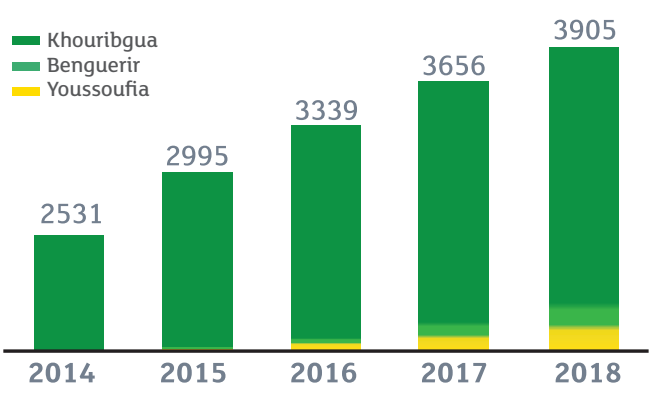
OCP Group is developing new industrial processes that integrate site rehabilitation since the beginning of the value chain

Expansion of the rehabilitation perimeter to areas adjacent to mining sites

Support the creation of structuring agricultural projects at local level

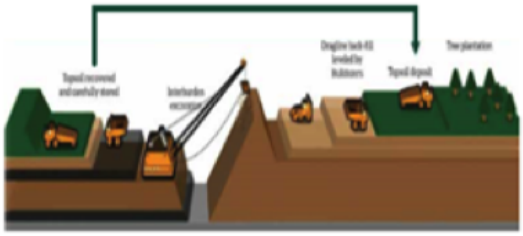
By the end of 2018 OCP planted 3,900 ha of mined lands and 1,850 ha of fields adjacent to the mining sites.

Evolution of planted areas in ha



The process of rehabilitating closed mines begins long before the start of any actual mining, first by preserving the fertile topsoil which is then removed for storage. These cuttings are then used to help develop new land and prepare the soil for agricultural use. Through the mining rehabilitation program, the OCP Group is preparing the ground upstream, for the development of future production & industrial projects.

integrate site rehabilitation in the mining process value chain



This mechanism of restoring plant cover, encourages reforestation and tree planting and promotes best sustainable agricultural practices around rehabilitated mining fields. It also creates a multiplying effect: through demonstration platforms ... the OCP Group is multiplying initiatives **to recreate new spaces giving life to future projects, creating economic value (to the land) and creating jobs for the surrounding communities and villages.**

There are a number of important research projects underway in partnership with the UM6P *(such as: Valorization of by-products (phosphogypsum washing sludge ...)*, and there are also related to the theme of rehabilitation and improvement of low quality soils. A variety of research platforms are mobilized for this effort, namely **the Center for Soil and Fertilizer Research across Africa (CESFRA) and its AgroBioSciences program,** as well as the experimental mine at Benguerir.

THE CARBON FARMING PROJECT BELOW IS ONE OF THE RESEARCH PROJECTS :

The OCP Group and other committed worldwide companies & organizations have shown a strong willingness to act against the climate change caused by CO_2 emissions.

In fact, afforestation, the planting of trees in areas that are devoid, such as arid, semi-arid zones or old mining sites, in turn provide a major reduction for CO_2 and therefore, go some way, to helping tackle aspect of climate change.

In October 2018, the OCP Group launched the "Carbon Farming" project as a three-way partnership between OCP Group, UM6P and St1 a Finnish energy company. The aim of this project is to develop a validation and approved tool for climate change mitigation through the establishment of carbon sinks via the rehabilitation of old mine sites and afforestation of marginal lands in dry and semi dry environments .

The "Carbon farming" project is planned to be completed over three phases, a pilot, a demo and a full scale project. We are currently in the first phase, the pilot project, funded by the Finnish company St1, and led by UM6P scientist with the assistance of the Natural Resource Institute Finland (LUKE) and the Regional Centre of Forestry Research (CRRF).

Its objective is to identify local and exotic fast growing plant species and optimize their growth in arid and semi-arid areas, using different irrigation techniques and soil improvement mixes to reduce water evaporation and increase soil water retention capacity and nutrients availability. Therefore, maximizing CO_2 sequestration per hectare and per liter of used water in these harsh environments.

The pilot duration is 3 years, and its results will be used to implement successfully a larger scale DEMO project, which will rehabilitate an area from 500 to 5000 ha of mine lands and marginal non-agricultural land and will serve as a demonstration platform to eventually establish a full-scale project.

The rehabilitated areas will constitute a major atmospheric carbon sink that will contribute positively to the carbon footprint of all parties involved. The benefits will also include socio-economic and ecological impact for small farmers through utilizing the planted trees, taking care of the forests and potentially selling carbon units (long term benefits).

QUINOA VALUE CHAIN IN MOROCCO

1- Quinoa IDRC-ICBA-UM6P cooperation

In 2018 a three-year project began that is funded by CRDI-Canada (International Research and Development Center) entitled «Development of the quinoa value chain to improve food and nutrition security in rural communities of Rehamna». The project location is to be in the province of Rehamna, where a significant part of the population lives below the poverty line. The province has an existing quinoa value chain, over the last ten years ago, but it is limited by various factors (such as: lack of efficient genetic material, low recovery and processing, lack of mechanization means, etc.) .

During the first two years of this project, an economically viable business model was developed focused on the whole quinoa value chain. The introduction of high-performance varieties of quinoa and development of a seed production system allowed for 'adaptation' trials of new varieties (developed at the ICBA level in Dubai) conducted at the experimental farm of the UM6P and among farmers in Rhamna province.

The results were positive showing a good performance of introduced varieties compared to the original local seeds chosen by Rehamna farmers.

Several quinoa awareness activities have been carried out including the first quinoa promotional workshop led by Chef Khadija, a jury member of the Master Chef Morocco. The project also supported the participation of the cooperatives involved during SIAM 2019 in Meknes to promote the quinoa products developed within the framework of this project.

The Rehamna quinoa project also strengthened the technical capacity of more than 300 associated beneficiaries including more than 80 women and 200 farmers, by organizing more than 6 technical training sessions on good quinoa production and best development practices.

2- Quinoa Youssoufia :

By carrying out adaptation tests of 7 varieties of Quinoa, over a 3 year period in order to support and equip small farmers / cooperatives in how best to appropriate and populate a plant in Morocco that has not been cultivated here before.

1- identification of **3 varieties** of quinoa with high production potential

2- construction of a seed stock to cultivate **500 Ha** of Quinoa

3- sorting and polishing **400 kg** of Quinoa, **320 kg** of edible grains and 24 kg of saponin