





## **Carbon Sequestration**

Based on HAF calculations in consultation with carbon offset experts, the planting of 10 million fruit trees will generate approximately 425,000 verified carbon units (VCUs); 24 trees offset one ton of CO<sub>2</sub> at a cost of \$9.60. To secure these units, the trees require monitoring twice during the first five years. While VCU's are usually stored up to 150 years in living trees, due to the unique climatic conditions of Morocco, carbon is transformed into stabilized hummus, remaining in the soil for up to 1,000 years. HAF commits to sustainable long-term carbon storage, providing the wrap-around service of constructing and maintaining the nurseries, transplanting them with farming families, cooperatives, and education centers, while monitoring and registering the data. Ten million trees impact approximately 40,000 rural households, including 200,000 people, while cooling the climate globally.

As part of this program, HAF will: a) facilitate inclusive community planning of agroforestry projects; b) secure land for fruit tree nurseries that is lent in-kind by public and civil agencies; c) build community-managed nurseries with cooperatives of women and youth; d) plant local or native seed varieties and install efficient and clean energy irrigation systems; e) deliver technical and managerial capacity-building workshops in order to ensure sustainability of the nurseries and the trees planted; f) oversee the transplanting and delivery of the trees from the nurseries to locations in Morocco; g) monitor tree growth and survival rates, and plan and implement measures with partners to enhance the health and productivity of the trees; and h) secure certifications and develop reports (including budgetary and maps) that present accomplishments, challenges, and outcomes of planted tree.

## **Low Cost Offsets**

HAF is able to provide tree planting, monitoring, and the required data to secure CO<sub>2</sub> offsets at the cost of \$9.60 per ton of CO<sub>2</sub> sequestered (growing 24 trees) due to these factors:

1. We grow the saplings from seeds, which allows us to retain significant value, spending only 16 to 25 percent of the private sector price per tree, depending on the variety.
2. The lending of free land by public and civil agencies further reduces costs and price-per-tree unit.
3. The utilization of local fruit seed varieties not only significantly enhances biodiversity, but enables seed procurement in close proximity to the nurseries, reducing transportation costs and increasing survival rates.
4. Nurseries are maintained by local community members who receive from the HAF a fair salary plus benefits, including health insurance and social security, with seasonal workers also coming from the neighboring vicinity. Thus, labor costs are relatively modest with a high level of commitment and satisfaction.
5. Finally, the trees are distributed to the farmers, where capacity building workshops on effective tree planting and care play a key role in maintaining the HAF's outstanding tree survival rate. Farmers pay \$0.20 per tree, and the entirety of that amount is reinvested in seeds in order to replenish the nurseries, provide for their caretaking, and continue the generation of young trees for subsequent years.