

The ARINA project: a participative and inclusive approach for rural afforestation in Madagascar

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Fuelwood (FW) is the first source of domestic energy in Madagascar where > 90% of the population use it fuel cooking. The 2 million inhabitants of Antananarivo consume annually 240,000 tons of charcoal and 160,000 wood steres, mainly from 150,000 ha of old private *Eucalyptus robusta* coppices. However, there is a risk of rapid FW shortage due to continual decrease in stand rotation duration (< 2 years nowadays) leading to lower mean annual production and physiological coppice aging, in parallel of the + 4.5% annual population growth rate. The general objective of the project ARINA "Integrated Forest Management and Reforestation of Anjozorobe District", part of the EU FED-Program "AgroSylviculture autour d'Antananarivo" (ASA, 2015-2019), is to participate to poverty alleviation of rural populations and set the conditions of sustainable FW production for Antananarivo. Specifically, Arina aims at strengthening the FW production capacities of these populations on forest plantation management, quantitative and qualitative improvement of charcoal production, and FW marketing. Arina promotes participative and inclusive approach. Nursery owners, forest planters and charcoal producers organized themselves into professional associations that interact with local comities composed of elected and traditional authorities, and with forest administration. Arina aims at combining private initiatives and local decisions to influence the FW regional sector and profits repartition among the stakeholders of the FW value chain, increasing retribution of individual producers and cash return to local communities. Techniques are easily applicable and reproducible by rural populations (e.g. spot soil preparation, manual weeding, improved local carbonization technique). The goal of ARINA has been to establish 20 nurseries (900,000 seedlings/yr) and 2,200 ha of FW plantations (0.3-1.0 ha/stand), mainly of *E. robusta*, and to train 1500 charcoal producers. More than 4,000 people will directly benefit from the project.

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