

Case Study

Community Development and Poverty Alleviation In Madagascar

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EXTENDED ABSTRACT

The erosion control and environmental restoration requirements on the RIO TINTO/QMM Ilminite project initiated a poverty alleviation program for many local communities in and around the town of Fort Dauphin, Madagascar.

It was established that it would be required to propagate approximately 3,000,000 Vetiver plants which would be used in sand fixing, erosion control and slope stabilization along the newly constructed roads from the new harbour, the quarry haul road, MSP mining site and the 3 villages that were to be constructed to accommodate the mining staff. Rehabilitation had to be provided to newly constructed side slopes of the haul road from the quarry to the new harbour site and other major earthworks through the primary dune between the coastline and the quarry.

Extensive erosion resulting from high winds occurred to the side slopes of the excavated dune necessitating the implementation of wind control barrier netting and sand fixing techniques using vegetation.

HYDROMULCH (Pty) Ltd in conjunction with RIO TINTO/QMM Environmental embarked on a Vetiver growing program utilising members of the local community surrounding the project. Fifteen communities were initially approached during December 2006, which expanded to 35 communities by August 2008. These communities were involved in the propagation of Vetiver plants at their respective villages, where entire families would become jointly involved in these programs.

Vetiver Sources

Vetiver was introduced to Madagascar last century for essential oil production, but it is now naturalised and can be found growing in abandoned fields, along watercourses and in rural pasturelands in close proximity to site, where it was sometimes used for grazing. The villagers were briefed by HYDROMULCH on the soil conservation properties of Vetiver, the correct cropping and trimming procedures and shown how to remove plant material without causing damage to the parent plant. They were encouraged to preserve existing Vetiver bushes and to replant additional material to areas with high erosion potential.

The Vetiver planting material was purchased from the different farmers or communities from the Manisy Village, Mahasidi district and transported to a holding nursery from where they were distributed to the community farmers.

The Vetiver supply process involved all members of the community who collected viable and strong plant material from various sources often travelling great distances to obtain suitable material. Collection areas were predetermined by both supplier and consumer.

Community Participation

Potting bags and Vetiver slips were delivered to the communities who proceeded with the filling of the bags with a suitable growing medium and inserted the Vetiver slips into the bags.

They were paid for the initial planting process with a second payment once the plants were satisfactorily established, had a well developed root system and were ready for collection by HYDROMULCH.

The Vetiver farmers (growers) received potting bags, fertiliser sticks, and tools such as spades, rakes, plastic watering cans, wheelbarrows and the growing material from HYDROMULCH.

Payment was made progressively to the farmers over a 3-month growing period during which time they were visited and trained further.

Open ground nurseries were also encouraged where farmers could establish stock for future demands.

The farmers/communities were also involved in post establishment maintenance of the Vetiver plants and were paid accordingly.

The table below records the number of farmers/communities and the number of plants that were grown up to October 2008.

Nursery	Name of Source	Location	No. Vetiver Plants Supplied
P1	Garry I	Beloto	220,000
P2	André	Mangaiky	430,000
P3	Auguste	Mangaiky	450,000
P4	Marie-Agnès	Mandromo- dromotra	150,000
P5	Antahova	Mangarivotra	110,000
P6	School	Morafeno	35,000
P7	Jean Marie	Montifeno	20,000
P8	Arthur	Ampasy	170,000
P9	Marie Mariette	Ambaniala	120,000
10	Claudia	Andrakaraka	30,000
P11	Cascade	Manantantely	210,000
P12	Hydromulch	Beloto	55,000
P13	Guillaume	Andramaka	24,000
P14	Razafy	Analabendra	30,000
P15	Jonesy	Analabendra	380,000
P16	Garry II	Andranara	200,000
P17	Bari	Belavenoka	10,000
P18	TomTom	Manambaro	20,000
P19	Masy Flomene	Befeno	420,000
P20	Ialovaso Nesta	Befeno	20,000
P21	Damy Pero	Befeno	20,000
P22	Rasoa	Befeno	30,000
P23	Damy Zonarivelo	Befeno	20,000
P24	Damy Sondrosy	Befeno	30,000
P25	Pelakoa Julienne	Manantantely	30,000

P26	Doda Mbola	Manambaro	40,000
P27	Fitahia Nestor	Manantantely	30,000
P28	Zafy	Befeno	15,000
P29	Havoa Jeanette	Befeno	20,000
P30	Pelavao	Befeno	30,000
P31	Rakotonirina Berton	Manantantely	20,000
P32	Dede	Manantantely	62,000
	TOTAL		3,080,000

Community Benefits

It was found that the propagation process was a stimulating and incentive program for the younger generation as they were developing new skills. This community based “Vetiver propagation program” has generated approximately (US \$ 250,000) collectively to the respective communities within the construction period.

It is most interesting to experience the positive outcome that has been generated by the community program where some farmers have benefited from the financial returns on their efforts and invested their returns in buildings and cattle.

These communities have been well trained in propagation techniques and micro- financial management. They are now more than capable of being able to continue with the propagation of other vegetative species. Four Vetiver suppliers have continued with propagation for the mine and will be able to derive a sustainable income over time.

Conclusion

HYDROMULCH had in addition to its community participation, employed 52 people from the local community who have, over the past 30 months been working on the project and have been trained in various skills ranging from native seed collection, planting techniques for Vetiver on contours, maintenance of vegetation, placing barrier netting, soil preparation and hydroseeding.

Many of the old HYDROMULCH staff have joined the QMM environmental team and are continuing with the experiences learned over the construction period.

It is hoped that these communities will be able to continue with their exploits and that they will be able to expand their knowledge into other lines of agriculture as the growing demand for fresh produce for the employees of the mine over the next 50 years will sustain them.

Keywords: Community development, poverty alleviation, rural and community training

References

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Brief Introduction to the Speaker

Roley Noffke, a senior and very active member of the Vetiver Network International for the past 5 years and a founder member of the International Erosion Control Association (IECA), Southern Africa Chapter.

He was instrumental in pioneering the method of establishing "Macchia" vegetation along the coastal routes of the South African coast line during the 1980s. He has facilitated and introduced various bio-engineering techniques using Vetiver grass and other vegetative methods for erosion and sediment control together with conceptual environmental restoration approaches to many Central, West and East African road and mining projects. He provides technical information, specifications and "turnkey" proposals to leading international geo-technical and civil engineering consulting enterprises.

Roley is the managing director of HYDROMULCH (Pty) Ltd, an internationally accredited erosion control and environmental restoration contracting company which has been operating in Africa and internationally for the past 40 years.

Most notably HYDROMULCH recently completed the environmentally sensitive project on the Rio Tinto/QMM project in Madagascar and the Rio Tinto/Simfer project in Guinea.