

## **Reforestación Grupo Internacional S.A.**

Monitoring and valuation of teak plantations

### **SUMMARY STATEMENT**

The company Reforestación Grupo Internacional S.A. (RGI) contracted SilvoConsult E.S. S.R.L. Aguas Zarcas, Costa Rica to develop and implement a model for growth monitoring and projection of the RGI plantations as well as for their valuation.

SilvoConsult is a Dutch owned company with more than 20 years of experience in plantation forestry in Central and South America.

RGI owns and manages plantation projects in the surroundings of Muelle de San Carlos and Pavón de Los Chiles, in the Northern Zone of Costa Rica. All farms are dedicated to the timber production through reforestation, mainly with the species *Tectona grandis* (Teak).

For this purpose, between August 24, 2015 and September 3, 2015 SilvoConsult measured 213 Permanent Measurement Plots (PMP) evenly distributed over nine farms, with a net planted area of 1,044.79 hectares.

On basis of the data captured on the RGI-plantations during the last eight years and in combination with growth information of older plantations in the Northern Zone, SilvoConsult developed five growth and thinning scenarios for the RGI-Teak stands. SilvoConsult determined the scenario or Site Class distribution on all projects by comparing current growth with the scenarios.

The valuation was based on a plantation rotation of 20 years for all projects. Only for part of the Teak on the El Parque project, RGI plans a rotations of 16 years.

For valuation, SilvoConsult applied the discounted-cash-flow method for calculating the Present Value. SilvoConsult used the CAPM-Beta method to estimate the influence of risk on the forestry investment.

Projected values represent future revenues before taxes from year 2016 and onwards.

RGI is responsible for the following data:

- Rotation planning
- Net planted area of all projects
- Mapping of the planted areas
- Beta-value
- Current teak prices and the estimation of yearly price increment

The methods and results of the monitoring and valuation are described in the report. The Present Value of the RGI-projects is summarized below:

Project	Year	PV	PV/ha	PV-15%	PV+15%
Arco Iris	2001	\$522.136	\$6.181	\$443.816	\$600.457
Arco Iris	2002	\$621.700	\$6.873	\$528.445	\$714.954
Mairena	2002	\$148.866	\$5.739	\$126.536	\$171.196
Cristo Rey	2002	\$1.418.618	\$7.109	\$1.205.825	\$1.631.411
El Parque 20yr	2003	\$1.005.321	\$5.833	\$854.523	\$1.156.119
El Parque 16yr	2003	\$534.728	\$3.690	\$454.518	\$614.937
Arco Iris	2004	\$51.362	\$4.490	\$43.658	\$59.066
Carrizal	2006	\$308.170	\$3.545	\$261.945	\$354.396
Combate	2007	\$461.046	\$2.672	\$391.889	\$530.203
Gallito	2009	\$108.759	\$1.938	\$92.445	\$125.073
<b>Total Present Value of RGI-stands</b>		<b>\$5.180.706</b>		<b>\$4.403.600</b>	<b>\$5.957.811</b>

The values are subject to an error of  $\pm 15\%$  due to the possible error in the applied volume equations and measurement methods.

Outcomes of the growth scenarios and consequently of the valuation must be considered preliminary as result of the short age of the RGI plantations and the scarcity of literature on the performance of Teak on the mid and long term in the Northern Zone of Costa Rica.

Teak on RGI-projects is just starting to reach sizes for commercial production. Field information should be gathered on production level and the quality of the upcoming plantation products in order to improve production models.

Aguas Zarcas, December 01, 2015



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