Business plan

Silvopastoral reforestation in Volendam, eastern Paraguay

Technical, financial and management information

Freiburg and Asuncion, December 2013

UNIQUE forestry and land use

Prepared by:

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Content

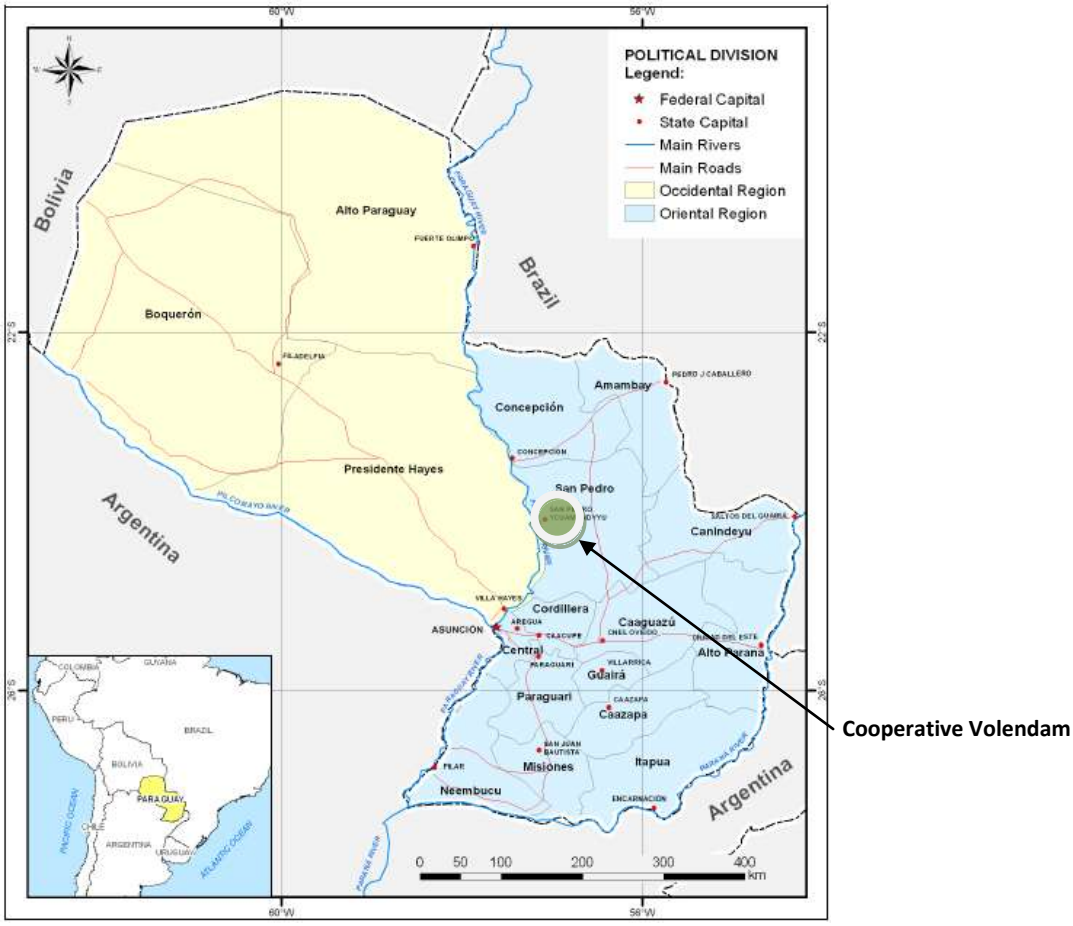
1 Introduction

1.1 Production site

The Cooperative Volendam is located in the Department of San Pedro in eastern Paraguay and covers a total area of 57,076 ha. The area is owned by Volendam which is a cooperative of 320 members dedicated to agricultural production and livestock breeding activities. In addition to agricultural land there are 1,100 ha of reforested land and 5,500 ha of natural forest of which 1,000 ha are in advanced stages of degradation. Since 2001, the cooperative has a Forest Service that is responsible for forest management activities, reforestation and compliance with national environmental laws related to forestry.

The climate is humid with an average annual rainfall between 1.300 and 1.600 mm and an average annual temperature of 22°C.

Figure 1: Location of Cooperative Volendam in Paraguay



1.2 Project size and proposed project activities

The proposed project is envisioned to be implemented by the Forest Service of the Cooperative Volendam on a total area of approximately 300 ha, depending on the interest of the cooperative land owners to invest in reforestation activities.

The business plan is prepared for a REDD+ compatible forestry production project that envisions undertaking the following activity:

Approximately 300 ha quality timber production under silvopastoral systems with Eucalyptus species on medium site conditions (growth performance of **26 m³/ha/year**). The rotation (time from planting to final cut) is 15 (14-16) years. Planting density and thinning regime will allow cattle breeding within the plantation areas. The project activities are envisioned to be implemented by individual land-owners of the Cooperative Volendam and the scale of the project is expected to grow over time depending on the motivation of the land-owners. By the end of 2013, 22 ha have been identified for reforestation, while the remaining area is an estimate of the cooperative's Forest Service to be scaled up over a period of 10 years.

In addition to the reforestation activities, the project developer considers to certify the project according to a carbon standard, such as the Verified Carbon Standard (VCS) as a "Grouped Project[1]" to generate carbon credits as an add-on revenue stream to reduce investment costs and incentivize participation by land-owners. The certification timeframe is planned once a scale is achieved that covers the carbon related transaction costs.

1.3 Scope and structure of this document

This document describes the technical details, financial performance and the project management structure of the planned silvopastoral reforestation activity. The business plan is structured as follows:

- Chapter 2 presents the responsible **forest management entity**.
- Chapter 3 describes the underlying **general concept** of the forestry project.
- Chapter 4 provides information on the **specific production scheme**: project area, tree species to be planted, silvicultural concepts including growth and yield performance.
- Chapter 5 introduces to the **timber market** and to commercialization strategies.
- Chapter 6 focuses on the **project management** structure.
- Chapter 7 describes the **financial performance** of the project.
- Chapter 8 provides information on integration of **carbon business**.
- Chapter 9 presents a **risk assessment** and the risk mitigation measures

2 Project management entity

The project is implemented by the Servicio Forestal (Forest Service) of the Asociación Colonia Volendam. This agency is responsible for providing technical assistance to its members and services related to the implementation, management and tending of natural forest plots and forestry plantations. Since more than 10 years, the Forest Service of the Colonia Volendam Association is responsible for the management of the cooperative's forest resources and has reforested more than 1,000 ha over the past 7 years for its members in order to comply with the national laws and to diversify production. The Forest Service has developed strong capacity to manage forests sustainably based on best practices.

[1] A VCS grouped project combines multiple project activities (by multiple land owners) into a single, combined project that adds new instances over time at simplified certification rule.

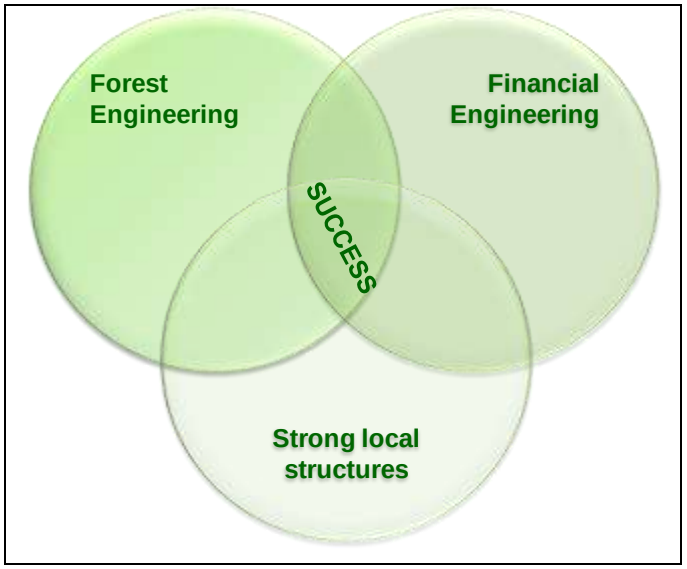
3 General concept

3.1 Understanding of forest investments

Investment principles

We are convinced that based on the following three principles timberland investments are successful:

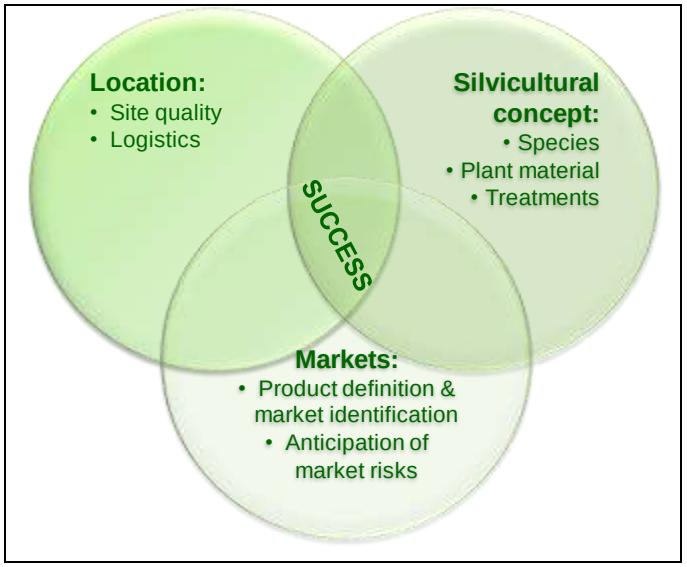
- **Professional forestry engineering** is the basis for optimal and cost efficient sustainable timber production. The correct selection of species and silvicultural regime (see also below) predetermines economic success of forestry operations.
- **Financial engineering** takes into account the typical forest production cycle: Relatively high initial costs, long production cycles and positive cash flows not before 6 to 8 years of production.
- **Strong local organizational structures** are a crucial asset for an efficient implementation and management of forestry projects.



3.2 "Site - species - market" approach

Consideration is given to the three main requirements of an economically successful forest production:

- **Markets:** Products and key markets have to be defined before selecting tree species. Possible commercialization risks have to be anticipated.
- **Project location:** Site quality predetermines the degrees of freedom regarding species selection. Selected tree species must perform on selected sites. Besides site quality, access to markets (logistics) is crucial for the selection of suited locations for forestry projects.



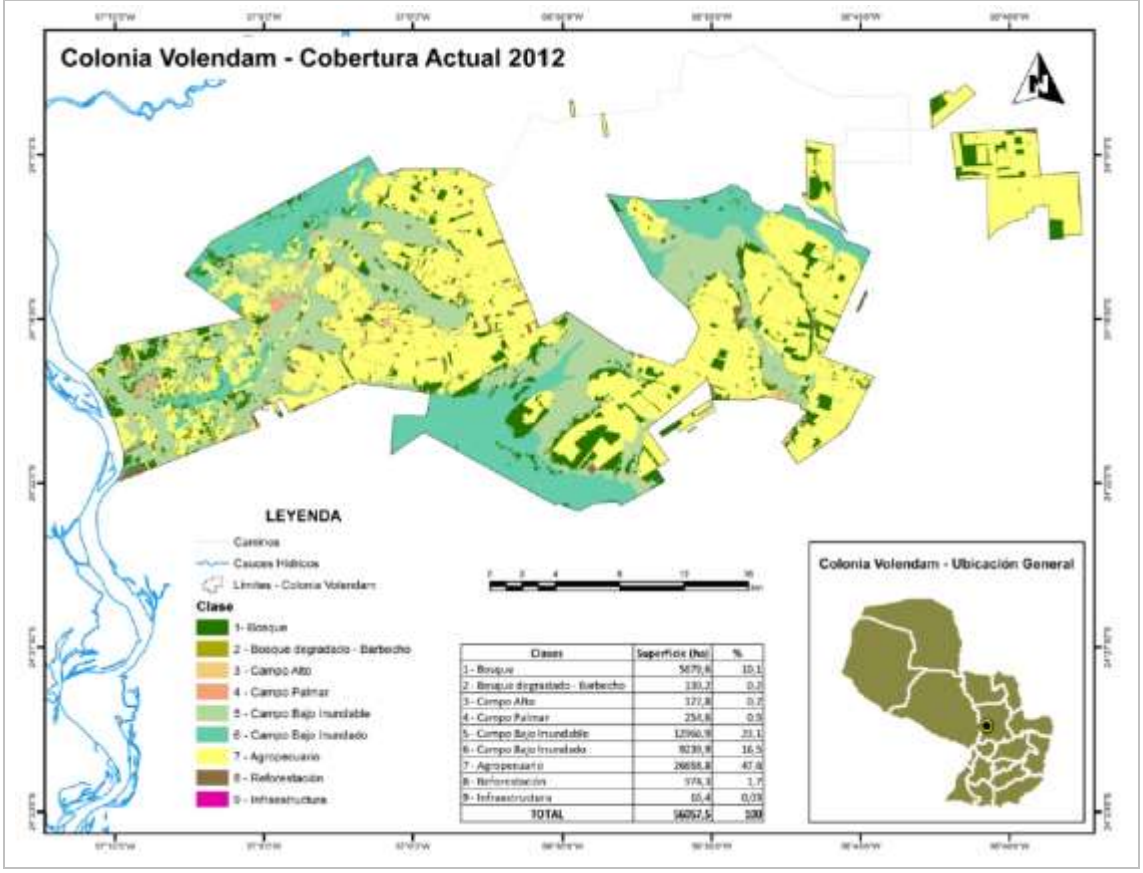
- **Silvicultural concept**: The most suited tree species are selected as a function of production goals and site quality. Crucial for an optimal production is the quality of planting material and a sound maintenance and tending regime (disease control, pruning and thinning) of the newly established forests.

4 Production

4.1 Production sites

The project will be situated in the eastern region of Paraguay in the department of San Pedro. The map below shows the total cooperative and its land use. In total the cooperative area is 57,076 ha. About 23.6 % (13,461 ha) of the total area is classified as natural grasslands that are suitable for silvopastoral value timber production.

Figure 2: Cooperative Volendam land use map



Source: Cooperative Volendam, 2013

4.2 Production size and share of species

The total size of the project area is envisaged to take place on an area of minimum **300 ha**. Currently the Forest Service has identified 22 ha to be planted in the year 2013. The remaining area to be brought under silvopastoral production still has to be determined, based on the decision of individual land-owners. The Forest Service conservatively assumes that from 2014, annually about 30 additional ha will be planted over a period of the next 10 years. This number may be higher depending on the performance of the current plantations of the cooperative and the motivation of land owners to undertake reforestation in combination with livestock. Currently the Forest Service plans to reforest with **Eucalyptus grandis**.

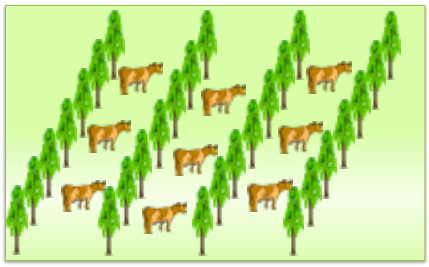
E. grandis requires well drained sites. The species is suited for value timber production. Within the Eucalyptus family, E. grandis is one of the most frequently planted species due to his

growth performance and timber properties. E. grandis has a broad spectrum of utilization: energy, pulp, columns, sawn timber, (rotary cut) veneer for plywood production.

4.3 Silvopastoral production systems

The establishment of silvopastoral systems will allow the combination of livestock and timber production in the same area. Trees will be planted with less density compared to pure forest production stands. To assure sufficient illumination for pasture growth trees will be planted using spacing of 7x3 meters, which corresponds to a planting density of 476 trees per hectare. (see Table 1). The main production goal will be quality timber in a production cycle of 15 years.

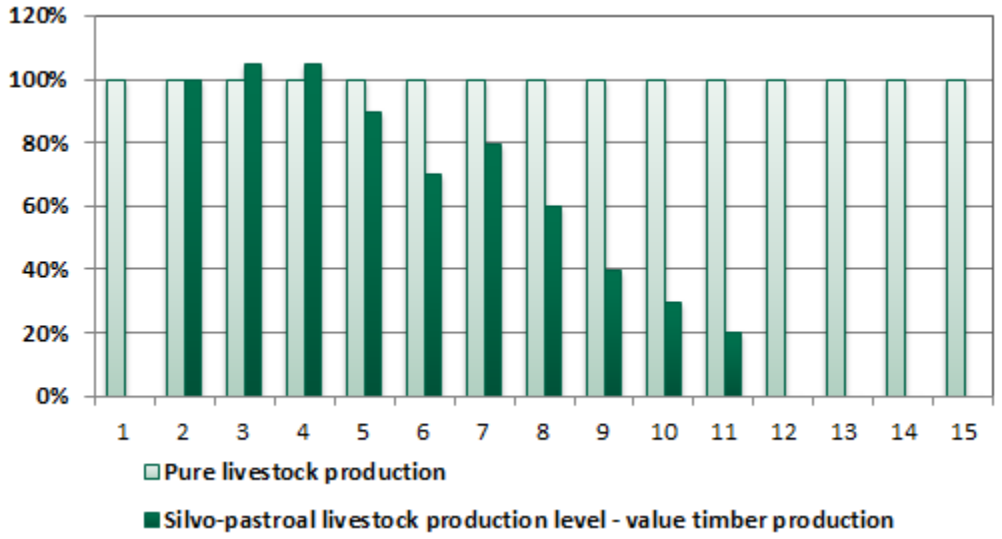
Table 1: Management in silvopastoral systems

Production goal	Quality timber
Species	*Eucalyptus grandis*
Spacing	7x3 m (476trees/ha) 
Maintenance	Fertilization, weed control, ant control; Replanting where necessary
Pruning	• 2 years after planting up to 3-4 m • 4 years after planting up to 7-8 m • 6 years after planting up to 11-12 m
Thinning	• 2 years after planting reduction to 350 - 400 trees / ha • 6 years after planting reduction to 200 trees / ha
Final cut	15 years after planting

Animals will be excluded from plantation sites during the first year, in order to ensure high survival rates and optimal growth performance of the planted trees. From the second year on grazing activities will be taken up between tree rows.

With the planting of trees trade-offs with livestock production will occur. The pasture production depends on the light reaching the ground, thus the crown cover of reforested areas will determine the livestock production potential. With the growth of trees and canopy closure livestock production will decline, while thinning operation will open up the canopy, facilitating grass production and increasing the livestock production levels. In our calculations we apply a reduction factor to reflect this dynamics comparing pure livestock system (see Figure 3).

Figure 3: Livestock production levels in silvopastoral systems compared to pure livestock production (%) over one rotation period



4.4 Growth and yield characteristics of the production scheme

A good growth performance in terms of volume and quality is essential for the economic success of a forestry project. For the economic valuation of the presented project, simple growth and production tables for Eucalyptus grandis were used. The underlying mean annual increments (MAI) and production cycles of the forest species to be planted have been derived from different sources:

- Data provided by known forest companies / forest projects (Volendam, Pomera, Plantec, PMRN).
- Own observations and measurements.
- Local studies on growth and yield.

In Table 2 below the tree species specific growth and yield assumptions are presented:

Table 2: Growth and yield performance

Value timber *Eucalyptus grandis*	
Mean annual increment Biological Commercial	 22.3 m³/ha/year 26 m³/ha/year
Production cycle	15 years
Target diameter	36 cm
Share fuel wood	22 % of total harvested volume

Table 2: Growth and yield performance

Products	Products	1st thinning	2nd thinning	Final cut	Total
		Year 2	Year 6	Year 15	
	Fuelwood	10	15	50	75
	Logs C		15	65	80
	Logs B		15	75	90
	Logs A			90	90

The assumed growth of 26 m³ / ha / year is conservative and is based on experiences made by the Forest Service over the past 10 years.

For cattle breeding without tree component we calculate with net revenues of **USD 160 per ha per year** based on a production of **200 kg meat** per ha per year and a net price of **USD 0.80 per kg** of meat. For the economic modeling of silvopastoral production scheme we reduced this 100 % livestock production level as follows:

- In the first year no revenue from livestock production was considered.
- From the second year until end of rotation we adjusted the 100 % production level with the reduction values showed in Figure 3.

5 Timber markets

5.1 Forest product market in Paraguay

5.1.1 Value timber

The total wood consumption in Paraguay for industrial and energy use ranges between 8 to 12 million cubic meters per year. Current sustainable production does not exceed 3 to 4 million cubic meters per year. This leads to a significant supply gap. Hence, timber prices in Paraguay have increased in the last years.

As presented in Table 3, the price for *Eucalyptus grandis* logs have been raising by 30 % over the past few years.

Table 3: Price development for *Eucalyptus grandis*

Prices in USD / m³ logs loaded on truck

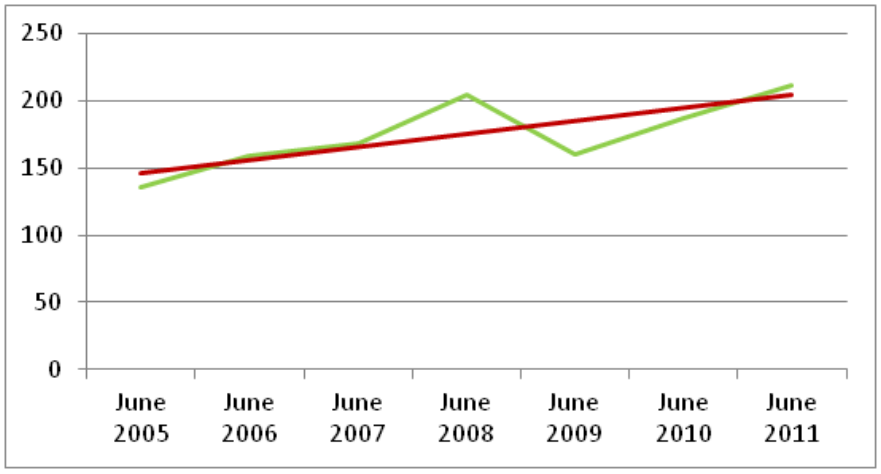
Year	Product category				
	Cat 1	Cat 2	Cat 3	Cat 4/5	Average
2010	47,85	35,89	27,91	23,13	33,70
2011	54,55	40,91	31,82	26,36	38,41
2013	56,18	44,81	38,95	35,08	43,76

Source: POMERA (2013)

A similar trend for *Eucalyptus* timber can be observed in Brazil. Statistics show that the average price for sawn timber of *Eucalyptus* has been growing at around 7.7 % annually as shown in figure below.

Figure 4: Prices for *Eucalyptus* air dried sawn timber in Brazil

Prices in USD / m³



Source: ITTO (2012)

5.1.2 Fuelwood

The main consumer of fuelwood is the agribusiness. Fuelwood and chips are used for drying and processing grain. Similar to the price trends of value timber sawn wood, the prices for fuelwood have risen significantly between 2008 and 2011 (see Table 4). Between 2011 and 2013 the prices were stable due to lower demand on fuelwood by the agribusiness. The crop production in 2012 was very low because of climatic factors.

Table 4: Price development for fuelwood

Prices in USD / t standing tree
Conversion factor m³est into ton: 2,3 to 1

Year	Gs/m³est	Gs/t	USD/t	Gs / USD
2008	11.000	25.300	5,80	4.363
2009	26.400	60.720	12,22	4.967
2010	26.400	60.720	12,81	4.739
2011	38.500	88.550	20,36	4.350
2013	38.500	88.550	19,90	4.450

Source: Plantec

Prices for chips oscillate between 85 and 105 USD / t at industry gate. Freight is an important factor for energy wood business. For fuelwood and chips a price of 12.50-15.00 USD/t/100km must be assumed. Thus it is crucial to identify sales stream that are located as close as possible to the site of production.

5.2 Target markets

The target markets for the presented forestry project are diverse. From today's view, the following markets will be targeted:

- **Local Paraguay market**: Roundwood for rural construction, logs for sawmill industry

- **Regional MercoSur market**: Sawn quality timber; eventually roundwood and chips for Uruguayan / Argentinean pulp industry along Rio Paraguay / Paraná

5.3 Product prices

One of the most critical aspects regarding the projection of the economic performance of a reforestation project is to determine log / timber prices in the far future. Our timber price assumptions therefore are based on assessment of current prices paid in the local market in Paraguay as shown in the previous sections.

The table below summarizes the envisaged products and the target markets from today's view. The table also contains the prices which have been used for the economic calculations. These prices have been derived from the stated reference prices. Mainly in the case of quality and high quality timber, the product should be commercialized after the first transformation process (sawn timber instead of logs).

Table 5: Commercial timber price characteristics

Tree species	Utilization	Products	Markets	Price used for calculations (USD at forest road)
E. grandis	**Quality timber** Constructions, furniture, plywood, bio energy, paper industry	**Logs,** fuelwood	**Local, regional,** international	Logs category 1: 56 USD/m³ Logs category 2: 45 USD/m³ Logs category 3: 39 USD/m³ Biomass: 30 USD/t

Due to increasing demand for bioenergy, pulp and timber, increasing forest product prices are likely. Therefore, using current prices for the economic modeling is a conservative approach. All the more, hence the potential of value chain integration and the related value adding has not been considered.

6 Project Management

The project is implemented by the Servicio Forestal (Forest Service) of the Asociación Colonia Volendam. This agency is responsible for providing technical assistance to members and services related to the implementation, management and tending of natural forest plots and forestry plantations. While land owners will assign their land for forestry activities, the Forest Service will organize and manage and the planted areas. Since 2001, the Forest Service has been operational and is currently managing all the forest areas of the Cooperative Volendam and reforested more than 1,000 ha over the past 10 years.

7 Financial evaluation

Our financial model considers all investment related costs and revenues. Prices for land are not included in our financial analysis as land-owners will use and assign their land for reforestation. The financial assessment is based on historical data of the Forest Service complemented by UNIQUE's experience with similar projects, as presented in the previous chapters. In our assessment we initially presented the results on a per ha basis that serves as key communication tool with land owners that are interested in reforestation activities. Afterwards, the 1 ha based financial model is scaled up to the project level of 300 ha, and followed by a financial assessment of carbon certification under the Verified Carbon Standard (VCS).

7.1 Input data for financial model

The financial projection is based on the following input data:

Table 6: Input data for the economic model[2]

Planted area (ha)	**300 ha**
Operative costs (USD)	
Plantation and maintenance year 1 (USD/ha)	1,200
Maintenance years 2 and 3 (USD/ha)	290
1st thinning (USD/m³)	10
2nd thinning (USD/m³)	9
Final cut (USD/m³)	8
Harvesting fees (USD/m³)	2.6
Road construction (only in year 1) (USD/ha)	15
Road maintenance (USD/ha/year)	5
Product prices (USD at forest road)	
Biomass (USD/t)	30
Eucalyptus value timber (USD/m³) Category 1 (Logs A) Category 2 (Logs B) Category 3 (Logs C)	 56 45 39

7.2 Financial analysis results

Based on the key financial parameters presented in Table 6 and key assumptions described in previous sections, one ha of silvopastoral activity will result in an Internal Rate of Return (IRR after tax and excluding inflation) of **17.8 %** over one rotation period[3]. A landowner will need to **invest USD 1,400 per ha** over the first 6 years, until positive cumulative cashflows are achieved in year 7. The total costs per ha over the production period amount to USD 5,600 and will

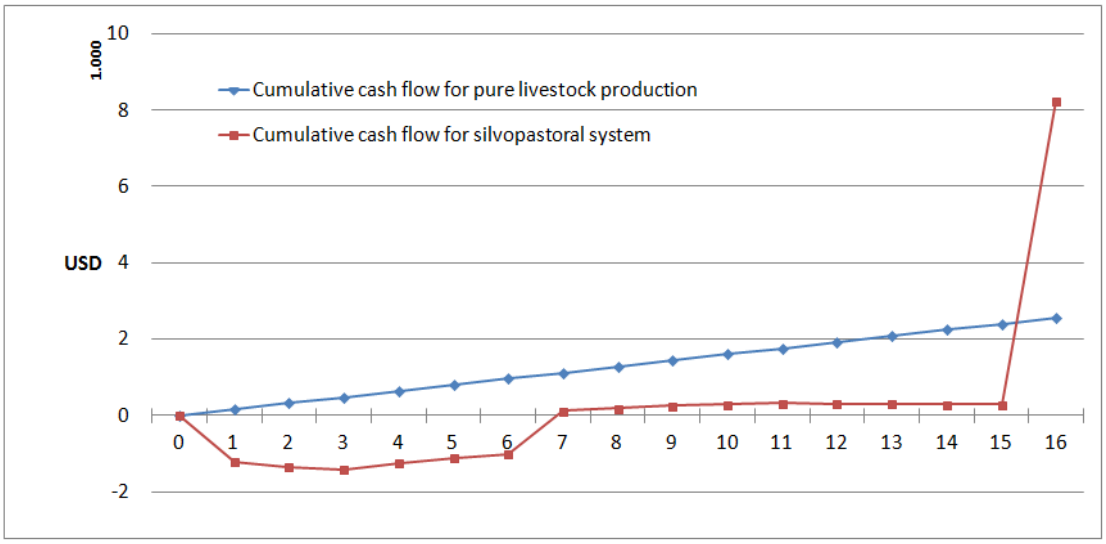
[2] Management costs are not included in the financial assessment. It is assumed that the additional work will be covered by the existing management structures of the Forest Service of the Volendam Cooperative and not additional staff requirements will occur.

[3] In our calculation land costs are excluded as landowner will provide their land for reforestation. Net revenues associated to the livestock component are included.

generate gross revenues of USD 14,800 after 15 years, resulting in net revenues of USD 9,200 (see Figure 5).

As for the livestock component, the net revenues obtained from this activity over one rotation period will decrease from USD 2,560 (estimation for pure livestock management system) to USD 1,120 under the silvopastoral system. However, the silvopastoral system will gain on average net USD 573 per year compared to USD 160 per year for a pure livestock management system. Thus, a silvopastoral production scheme will achieve 3-4 times higher net revenues per ha than livestock production without "silvo" component. However, land-owners will need to invest into a change of production system and wait until year 7 to cover the investment costs.

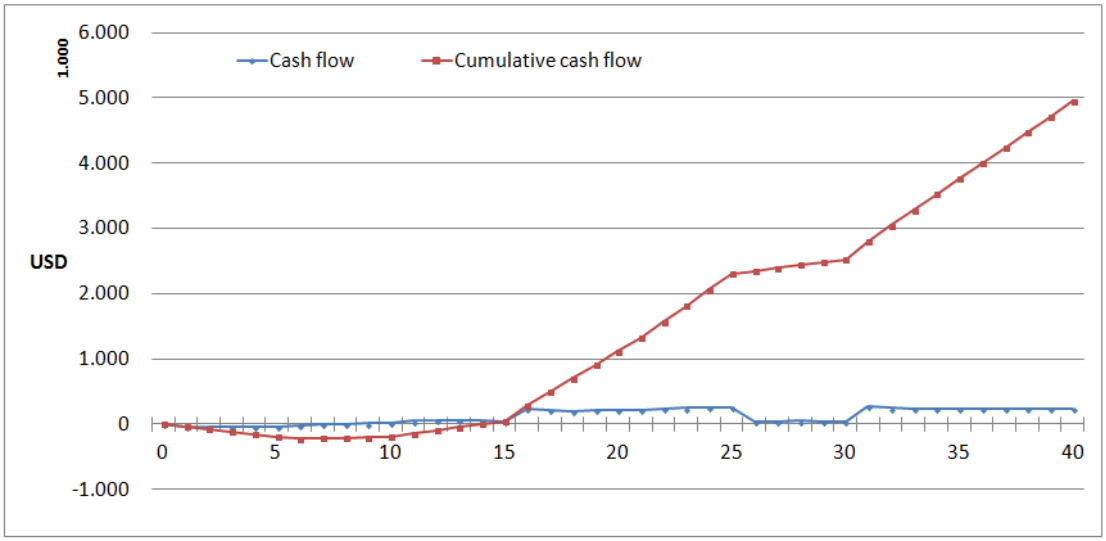
Figure 5: Cashflow of 1 ha silvopastoral production compared to 1 ha pure livestock breeding



For the proposed project scale of 300 ha, which is foreseen to be implemented over a period of 10 years, we used an assessment period of 40 years. The 40 years period was selected in order to include all costs and revenues for 2 rotation periods, assuming that after the first rotation of the initial plantings harvested areas will be reforested again. The cashflows are presented in Figure 6 below.

Figure 6: Cashflow of 300 ha silvopastoral production

Overall project investment requirement: USD 220,000
IRR after tax and excluding inflation: 17.9 %



The resulting overall **IRR is 17.9 %** and the **average annual net income** amounts to **USD 458 per ha.** The total investment requirement will amount to USD 220,000 and the break-even point will be achieved in year 14 after planting start (see Table 7).

Table 7: Key financial indicators for silvopastoral production scheme

Project activities	Assessment period	Investment requirement (USD)	Break-even point	IRR after tax (excl. inflation)	Average annual net income (USD/ha)
1 ha silvopastoral value timber	16 years	1,400	7 years	17.8 %	573
300 ha total project	40 years	220,000	14 years	17.9 %	458

7.3 Opportunities for enhanced returns

We have calculated the internal rate of without considering any of the following leverage factors:

- Vertical integrated production: The first transformation from round wood to sawn timber / from fuel wood to chips or pellets can considerably leverage IRR.
- Timber price development: We have not considered any timber price appreciation. Timber is expected to increase in price.
- Marketing strategy: We have only considered current prices in domestic market and not the higher price level in the future.
- Quality wood and wooden biomass production pre-selling.

8 Carbon certification

Carbon certification for the voluntary carbon market may generate additional revenues to Volendam through the sales of carbon credits. Thereby the project developer must ensure that the project will be maintained under forest cover for a minimum of 20 years. In the next section, initially background information on the voluntary carbon market is provided, followed by a financial assessment of potential carbon credit sales under different project are scenarios.

8.1 Basics of the voluntary carbon market

The voluntary market mainly trades emission reductions that cannot be used for regulatory compliance. The market also serves as an incubator for innovative emission reduction activities that are not eligible under any compliance market regime. The voluntary market is tiny compared to the global compliance markets but is the largest market for land-based credits globally. In 2012, Ecosystem Marketplace (2013[4]) traced market transactions of **USD 523 million**, and a volume of **101 million tCO_2** at an average carbon price of **USD 5.9 per tCO_2**. **Land-based carbon credits** had a share of about **32 % (24 million tCO_2)** of the total market volume. Carbon credits from **afforestation/reforestation** project amounted to **8.8 million tCO_2**. The average prices for forestry projects were **USD 7.8 per tCO_2** in 2012. In general the price of a carbon credit is determined by several parameters such as standard type, social and biodiversity impact, vintage, project location and the relationship to the core business of the carbon purchasing party. Current global voluntary carbon market demand is mainly the EU and North America comprising more than 90 % of the total market volume. More than 50 % of all buyers are located in UK, France, Netherland, Germany and Switzerland preferring carbon credits from Latin America.

The greatest motivation for companies to purchase offsetting is corporate social responsibility (CSR), demonstrating climate leadership, PR and branding, and experiencing new climate related markets for profit-generation and impact investments to generate high social and environmental impacts.

Firms acquire carbon credits for various purposes. The following key strategies normally motivate buyers to invest in carbon offsetting:

- Carbon neutrality of entire business
- Carbon neutrality of the production of a certain product
- Compensation as an offer to final consumer (costumer pays a certain additional amount for product to be climate-neutral)
- Additional marketing effect: “xxx trees are planted at the acquisition of product XYZ”
- Carbon neutrality for certain business processes such as (logistics, car fleet; business travel; events)
- Investments in core business related to clean and carbon neutral value chains

8.2 Carbon project transaction costs and pricing

For the assessment of a potential carbon certification we include carbon related transaction costs as shown in Table 8**¡Error! No se encuentra el origen de la referencia.**. The cost

[4] http://www.forest-trends.org/vcm2013.php

assumption is based on standard markets prices based on our long-lasting experience in the development and certification of forest carbon projects by UNIQUE forestry and land use.

The costs of setting-up a carbon project are relatively scale-invariant, thus it is crucial that project generate sufficient carbon credits that can cover the carbon related transaction costs for the development of the Project Design Document (PDD)[5], certification, and client acquisition. Operational project costs increase with the physical size of the project and our experience with other land-based projects show that carbon related revenue streams can cover a portion of the operational costs and reduce the investment requirement.

Table 8: Carbon related transaction costs

Cost item	USD	Comment	Timing
Carbon related project development and certification costs			
Project Design Document (PDD) and third party validation support	45,000	Consulting service fee	Year 1
Third-party validation	25,000	Certifier fee estimate	Year 1
Third party verification	20,000 each	Certifier fee estimate	Year 5, 10,15, 20
Carbon credit registration costs	0.15 per issued carbon credit	Fee to be paid to Standard after carbon credit issuance (verification)	Year 5, 10,15, 20
Total over 20 years	**111,300**[6]		

For the financial assessment of the carbon certification we exclude the costs for the preparation of the project design document (PDD). This document was developed in the framework of the project "REDD+ business models" developed by UNIQUE in cooperation with WWF and co-financed by DEG.

8.3 Financial evaluation – carbon certification

Based on the growth performance as presented in the financial evaluation section the project will generate about **42,300 tradable carbon credits** over a period of 20 years. For the estimates of the revenues we assume the average voluntary carbon market price for forestry projects of **USD 7.8/tCO_2**. In terms of sales timing we assume that sales occur after the actual carbon has been sequestered and certified (ex-post), thus after 5 years 7,000 tCO_2 will be and sold; followed by 18,800 tCO_2 after 10 years, 14,200 tCO_2 after 15 years and 2,300 tCO_2 after 20 years.

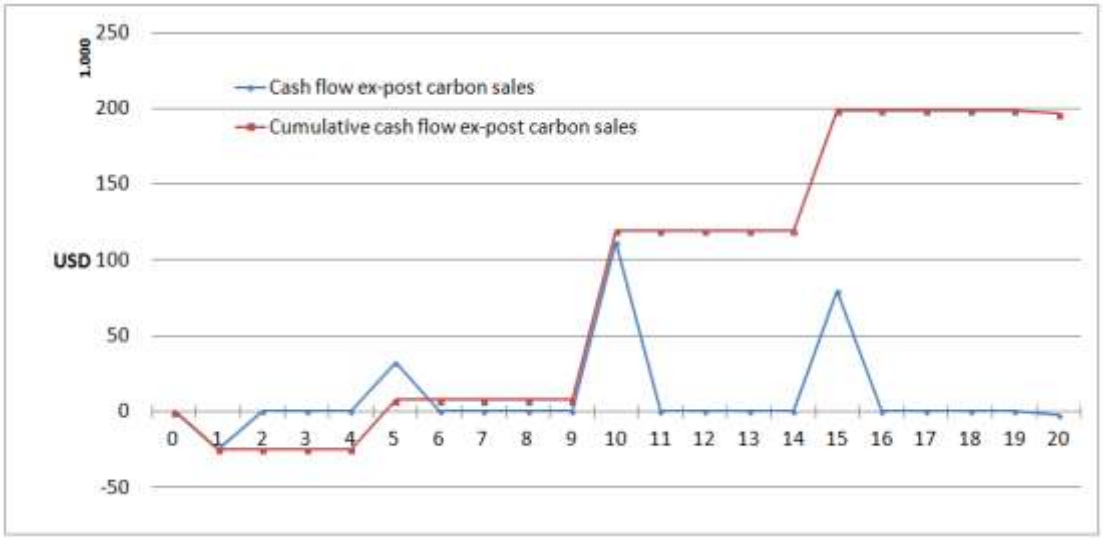
Based on this assumptions the overall IRR (after tax, excl. inflation) of project will increase from **17.9 %** in the without carbon project scenario to **19.1 %**. The total carbon related revenues will amount to **USD 0.22 million** (net revenues excluding carbon transaction costs USD 0.15 million)**.** The overall investment requirement will decrease from USD 220,000 to USD 212,000. In this case, the overall annual net revenue per ha would **increase by about USD 18 annually** to USD 476/ha/year.

[5] The Project Description Document (PDD) defines the information that needs to be provided to a third party auditor to validate the project against a carbon standard

[6] Project design document preparation fee excluded

Figure 7: Carbon related cashflow

Ex-post sales cashflow



Overall project investment requirement: **USD 212,000**

IRR after tax and excluding inflation: **19.1 %**

The analysis shows that carbon certification may increase the overall IRR by more than 1 % and USD 20/ha/year. Though upfront investment of project certification would be required and the search for potential buyers may be a challenging task to the Forest Service of the Cooperative Volendam.

8.4 Required commitments of carbon certification

In order to certify the project, the project developer has to commit himself to maintain the forest for at least 20 years, thus in case of the silvopastoral project activity value timber production will need to be maintained for at least 2 rotation periods.

In case of reversals (emissions of GHG emissions, e.g. due to fire or pest), the project developer is obliged to replace these carbon credits either through replanting of the same area, or other areas, or through the purchase of carbon credits from other projects.

9 Risk assessment and risk mitigation

The risk assessment shows:

- Production and market risks are relatively low. The remaining risk is on economic performance. A complete loss of the assets due to production or market factors can be excluded.
- The political exists but is relatively low, as the cooperative Volendam owns the land for more than 50 years and complies with all national laws.

Table 9 summarizes the main risks of successful project implementation and risk mitigation strategies.

Table 9: Risks and risk mitigation

Risks Type	Risk assessment	Risk mitigation strategy
Production risks		
Inappropriate species selection	Low when systematic soil sampling is conducted and professional site-species matching	Adequate project preparation, soil analysis before planting, fertilization if necessary
Forest fire	Low to medium risk. Burning of pasture land in the dry winter season is a traditional land use.	Fire management with fire belts and fire monitoring; fire prevention as joint activity by the landowners
Wind break damages	Low risk as most of Paraguay is low cyclone risk area	Site selection in low risk cyclone areas
Biotic diseases	Low risk in the case of Eucalyptus;	Disease monitoring / control; planting with different clones and seedlings
Market risks		
Price volatility	The prices for timber like most commodities are volatile	Reduced harvesting in low-price periods, integration of value chain, long-term master agreements with clients
Marketability of quality timber	Low risk due to increasing domestic and international markets for timber coming out of forest plantations	Selling the roundwood at international markets requires a sound marketing strategy
Marketability of wooden biomass	Volatile demand in Paraguay in function of agricultural crop production	Exploring of export markets (pulp mills in Uruguay, energy plants in Europe) to reduce dependency on domestic market
Economy of scale for high-volume low margin wooden products	This risk is considerable biomass (fuelwood)	Product diversification and market development

Table 9: Risks and risk mitigation

Risks Type	Risk assessment	Risk mitigation strategy
Political and social risks		
Expropriation of land	This risk is perceived to be low because of Cooperative Volendam owns the land since more than 50 years and complies with all relevant national laws and regulations	Sound and transparent project implementation and communication to forestry and environmental institutions
High tax hikes (from currently 10%)	Medium. Over the last decades taxes were stable	None as project has small impact on Paraguay`s fiscal policies
Weak and bureaucratic administration	Forest institutions and the regulatory framework is regarded as weak and bureaucratic	Reforestation projects are mostly welcome in Paraguay, both by the government and by the society Initiatives by INFONA and the government support reforestation, the existing reforestation law is under revision to be re initiated. Transparent acting and pro-active communication lead to an atmosphere where upcoming problems can be solved jointly with the relevant institutions.