



ArBolivia helps to save part of the Amazon rainforest, reforests fallow land and provides small farmers with a better and more sustainable income within a more cohesive society

### Eelde, November 2011





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#### **TERMS & DEFINITIONS**

### ArBolivia accounts and activities run by planting cycle

- Book year is 1-7 till 30-6
- Where years are mentioned they refer to the beginning of the book year (2011 means 2011 2012)

### PES = Payments for Environmental Services; these include

- CO<sub>2</sub> certificates / Carbon credits
- TPSC = Tree Planting Subsidy Certificates
- REDD = Reducing Emissions from Deforestation and Forest Degradation in Developing Countries (www.un-redd.org)

### Inflation and currency: all models are US \$ without inflation

- IRRs mentioned are returns including 2,7% US \$ inflation (budgeted according to 10 years US \$ inflation)
- Timber prices and the Bolivian economy are US \$ related



#### **EXECUTIVE SUMMARY**

ArBolivia is a Bolivian timber plantation project, run by Sicirec, with a socially and ecologically responsible foundation and seeks a financial commitment of up to US \$ 7 m offering scenario dependent returns (IRR) between 13 and 22%. The project is 1/3 on its way and seeks to involve 2.000 to 2.500 local farmers to plant and participate in 5.000 hectares of commercial timber (native species) as well as to preserve 1.200 hectares of natural forest. The project partially finances itself with voluntary emission rights credits (CO<sub>2</sub> credits) and other payments for environmental services (PES). PES are a largely unexplored revenue stream in commercial timber plantations.





### MAKING PROFIT WITH NATURE CONSERVATION

### ArBolivia is an environmentally and socially responsible project

Adequate project structure and organization

Sound return on investment



# ARBOLIVIA OFFERS AN ENVIRONMENTALLY AND SOCIALLY RESPONSIBLE INVESTMENT

### How and why ArBolivia has been set up

- The Sicirec formula
- The ArBolivia project
- History
- Livelihood improvement for farmers
- Protection of natural forest
- Capturing CO<sub>2</sub>

### Which part of Bolivia

- Project location
- Climate conditions

#### Current situation

- Current use of land
- How the land is wasted and exhausted
- Limited income per farmer



# SICIREC FORMULA: A GENERIC FORMULA WHICH ENSURES PROFITABILITY FOR ALL PARTIES

#### Sicirec formula: Clear distinction between production and conservation areas

In the Sicirec approach the available area is divided into production-land and networks of nature-preserves and ecological corridors where production and nature are strictly separated

### **Profitability for all parties:**

■ Livelihood improvement for smallholders (People)

The projects are set up in such a way that the local population profits from the commercial plantation forestry and from the know-how we provide

Lasting preservation of biodiversity (Planet)

Ecological zones and corridors are anchored in the land-use plan and will give permanent legal protection for the ecological infrastructure. The natural ecological systems should cover a minimum of 20% of the land's total ground surface

Good IRR for investors (Profit)

Timber revenues, PES revenues, project scale and professional management lead to acceptable to good IRRs



### THE SICIREC FORMULA IN PRACTICE: THE ARBOLIVIA PROJECT

ArBolivia is a community-based plantation forestry project working with local farmers to stop unsustainable land-use practices that in the past decades have led to the destruction of vast areas of Bolivia's natural forests.

The project, initiated in 2007 from a Food and Agriculture Organization pilot reforestation program, is run by the Dutch investment company Sicirec

Main goals of the ArBolivia project:

- Livelihood improvement for participating farmers
- Lasting preservation of biodiversity and CO<sub>2</sub> storage in indigenous timber species
- Economically viable plantation forestry that will generate a sound return on investment



### LIVELIHOOD IMPROVEMENT FOR PARTICIPATING FARMERS

### Land-use advice leads to higher revenues per hectare

Besides knowledge about plantation forestry, the local farmers are given land-use and agricultural advice in order to improve their agriculture techniques and increase yields per hectare

■ Maintenance fees and timber plantation revenues offer the farmers a stable long term income

Farmers are paid annual maintenance fees and will get 50% of the net timber revenues of their plot

### Fair timber prices

50% net timber price for smallholders will be higher than 100% of the local market price they would receive from local timber brokers

■ Microcredit with trees as collateral

Farmers will be able to get microcredit with their 50% of the future timber revenues as collateral

Local community can profit by additional economical activities

Timber processing, logistics, improvement of infrastructure, etc.



### LAND-USE ADVICE RAISES FARMER INCOME AND LIMITS DEFORESTATION

Current way of single or mono culture farming leads to low revenues per hectare

Stop 'slash and burn' agricultural practice that is destroying the Bolivian forests

Extensive training and education to build knowledge and skills and to create awareness

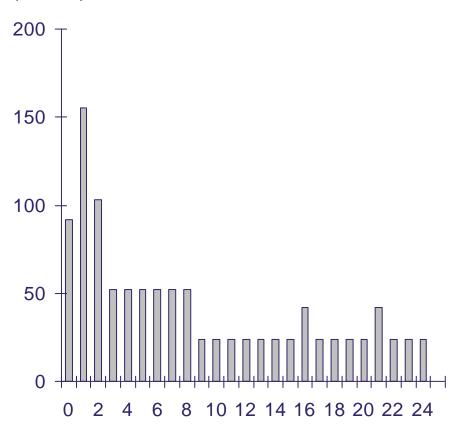
- Crop rotation plans with among others cacao, rice, coffee, citrus and copoazu
- Seed selection and fertilizer advice
- Operational efficiency advice
- Advice on pasture land rotation and supply of barbed wire



# MAINTENANCE FEES AND TIMBER PLANTATION REVENUES OFFER THE FARMERS A STABLE LONG TERM INCOME

### Maintenance fee per hectare

Intermediate species (in US \$)

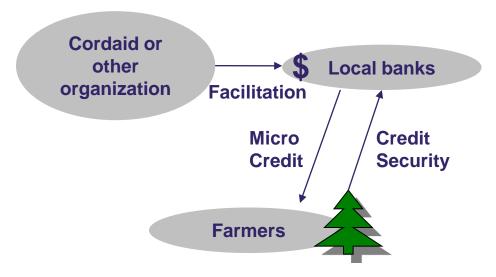


- On average, circa 1,7 hectares timber plantation per farmer (between 20% and 60% of total fallow land per farm). Minimum of 0,5 hectares per farm
- Farmers are paid a maintenance fee upon milestone approvals by the ArBolivia project for timber plantation maintenance and rededicated areas
- Farmers get 50% of the total net timber revenues.
- Timber revenue is optimized through volume aggregation; 50% net revenues for the farmer through ArBolivia are higher than 100% of the sale by the farmer to a local timber broker
- Described land-use advice improves farmer income further
- Access to microcredit facilities improves economic possibilities for farmer



### IN THE FUTURE, ARBOLIVIA FURTHERMORE ANTICIPATES TO FACILITATE MICROCREDITS FOR FARMERS

### Microcredit scheme



- ArBolivia cooperates with Cordaid or another NGO to help facilitating microcredits for farmers
- Farmers can use the ArBolivia project trees as a collateral for the banks
- Cordaid or another NGO works with local banks convincing them to provide microcredits to farmers
- Microcredits can be used to finance better seed material and fertilizer
- Microcredits cannot be used for activities conflicting with ArBolivia's project goals
- Although interest rates are (still) very high, locally they are perceived as reasonable



## ARBOLIVIA IS EMBEDDED IN RELEVANT SOCIO-ECONOMICAL MECHANISMS OF THE LOCAL SOCIETY

#### ArBolivia in local context



- ArBolivia's objectives and activities are aligned with national, regional and local political efforts of forest preservation and reforestation; regular meetings with vice ministry for environment, biodiversity, forest resources and climate
- Forestry committees are formed by farmers, farmer organizations and ArBolivia representatives to see to the fulfilment of the mutual obligations between ArBolivia and the farmers; they also act as an arbitration committee
- Farmers are stimulated to form local micro companies and community enterprises
  - Community enterprises are forestry related companies (e.g. tree nurseries) established by groups of farmers
  - Micro companies are driven by local entrepreneurs and provide services to the farmers (e.g. plantation maintenance)



### LASTING PRESERVATION OF BIODIVERSITY

Farmers are required to preserve an area equal to at least 20% of the plantation area for natural habitat

- Biodiversity preservation
- Introduces ecologically driven forest preservation to farmers

Awareness through education and training

Social control by forestry committees

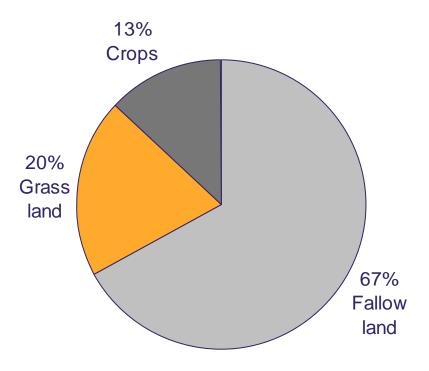
Preservation undertaken in master-planning with neighbours, corridors, municipal forest, rivers, etc. to create and maintain larger and coherent forest biospheres



### CO<sub>2</sub> STORED IN VALUABLE INDIGENOUS TIMBER SPECIES

# Historical use of current plantation grounds\*

(100% = 1710 ha.)



- Timber plantations are mainly established on fallow land
- Grassland and crops are replaced in case of unsuited or exhausted soil
- Selection of native tree species in three categories (fast, medium and slow growing)
- Plantations are alternative to felling primary forests

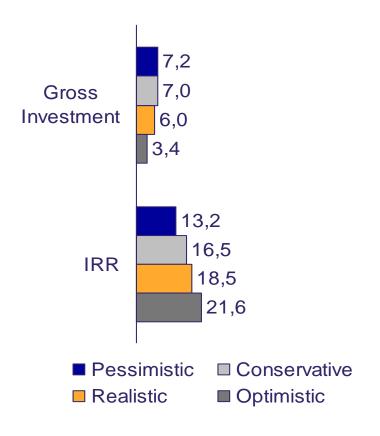
<sup>\*</sup> Planted hectares in 2007 - 2010 period by 900 farmers in the ArBolivia project



### ARBOLIVIA OFFERS A SOUND RETURN ON INVESTMENT

### **Gross investment and return per scenario**

(Investment in M\$; IRR in %)



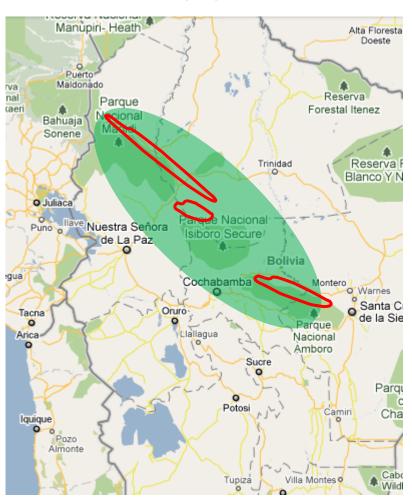
- Calculations based on 60% share for new investor(s)
- Scenarios:
- Pessimistic: no loans, no PES revenues, which leads to reduction to 3.000 commercial hectares
- Conservative: loans, no PES revenues
- Realistic: no loans, PES revenues
- Optimistic: loans and PES revenues
- In all scenarios the IRR will increase significantly when expanding the project to 10.000 hectares
- All scenarios account for:
- 3% annual salary increase above inflation for farmers and ArBolivia personnel
- 2,7% US dollar inflation (included in IRR)



### THE ARBOLIVIA PROJECT IS SITUATED IN CENTRAL BOLIVIA

### **Map of Bolivia**

ArBolivia scope highlighted

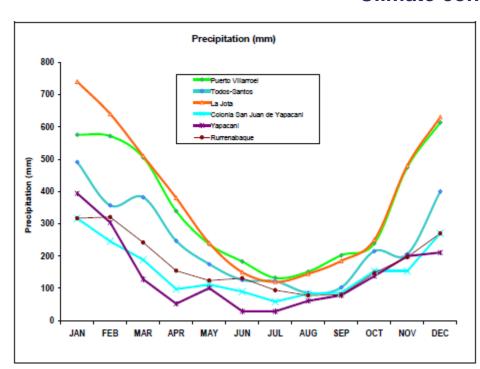


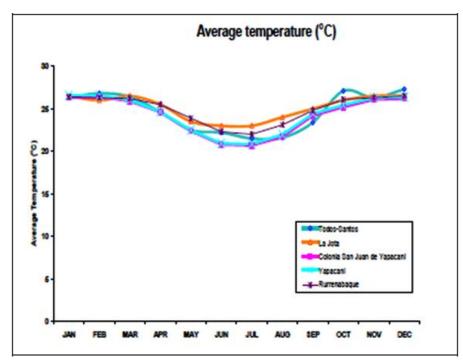
- The ArBolivia project has activities in 13 municipalities within 4 departments
- Departments Beni, La Paz, Cochabamba and Santa Cruz cover 773.901 km<sup>2</sup> or two times the size of Germany
- The 13 municipalities each have between 5.000 and 40.000 inhabitants with a combined total of 1.781.742 hectares of farmers' land (half the size of the Netherlands)
- ArBolivia's tree planting scope within this area is 6.000 hectares, with 5.000 hectares for plantation (surface of De Hoge Veluwe) and 1.000 hectares for agroforestry (mixed use)
- Project is mainly situated where the four departments border each other, in the Amazon river basin at the foot of the Andes mountain range



#### CLIMATE CONDITIONS ARE FAVORABLE FOR FORESTRY

#### Climate conditions Bolivia





- In certain project regions flooding may occur for periods of less than a few days. In the site selection this is taken into account and tree species will be selected considering their resistance to flooding
- Drought occurrence: July, August and September are the driest months. During these months no tree planting will take place. Once plantations are well established, drought does not affect development and growth of trees



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# ARBOLIVIA HAS AN ADEQUATE PROJECT STRUCTURE AND ORGANIZATION

#### Current structure

- Basic rights well protected
- Stringent criteria and contractual obligations for farmers
- Embedded in local society
- Control & governance by Sicirec, subject to financiers approval

### Adequate process

#### Results to date

- Current coverage
- Financing, role of CO<sub>2</sub> certificates and funding

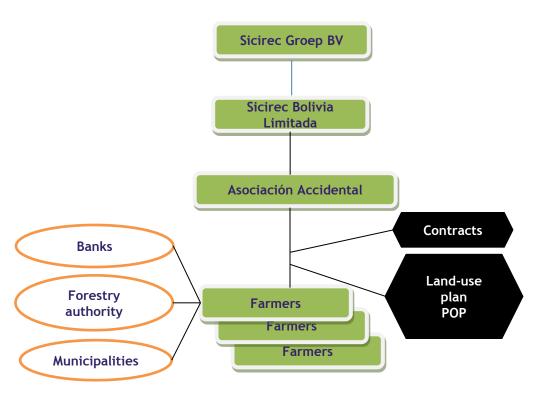
### Anticipated structure

- Objective roll out and expansion
- Exploitation by Sicirec and control by investors



# CURRENT PROJECT STRUCTURE IS CONTROLLED BY SICIREC, BASIC PROJECT RIGHTS ARE WELL PROTECTED

### **Current legal structure**



- The ArBolivia project is managed by Asociación Accidental, a former partnership between Sicirec Bolivia Ltda and Cetefor
- Sicirec Group BV is the controlling entity and manages Asociación Accidental through Sicirec Bolivia Limitada
- The shares of Sicirec Bolivia Limitada are currently formally held by Anko Stilma and his secretary under title of administration as non-Bolivians are not allowed to own a company with limited liability in Bolivia. In order to transfer the full ownership of Sicirec Bolivia to Sicirec Group BV the legal status of Sicirec Bolivia will be changed from a Limitada to an SA company registration
- Contracts with farmers specify ownership, responsibilities, rights and net revenue distributions
- All contracted land is registered in the land-use plan POP (Plan de Ordenamiento Predial)
- Social control by forestry committees and farmer syndicates



### STRINGENT CRITERIA AND LEGAL / CONTRACTUAL OBLIGATIONS FOR FARMERS

### **Check on land ownership**

### Signing of contract to:

- Manage the defined areas in conformity with land-use plans
- Provide land and labour to plant and maintain trees for at least one cycle
- Transfer the CO<sub>2</sub> rights
- Protect the plantations and respect natural forest
- Participate in training and education and in forestry committees
- Receive 50 % of the net revenues of thinning & final harvest
  - Administrative and operational costs in current contracts insufficiently specified (to be repaired)
  - In new contracts administrative costs will amount to ca. 15% of farmers' revenues

### Contracts and land-use plans (POPs) are registered with two organisations

- Municipality
- Forestry authority

Selling timber requires a certificate of the forestry authority; this certificate is not issued without ArBolivia's consent

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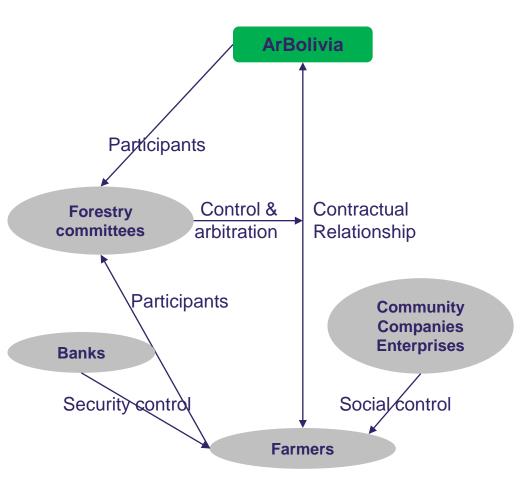
### ARBOLIVIA HAS AN EXPERIENCED MANAGEMENT TEAM

Name	Project Position	General Background	Experience in timber plantations	Experience in Bolivian operations
Popko P. van der Molen	Director Sicirec BV [project design, funding & control]	Biologist and forest ecologist (Dutch Drs. degree)	20 years	4 years
Edwin H. Kielman	Director Sicirec BV [project design, funding & control]	Tropical forestry engineer (Dutch Ing. degree)	15 years	4 years
Anko A. Stilma	Director Sicirec SA [project design, operations & control]	Tropical forestry (international BSc and MSc degrees)	16 years	14 years



# THE PROJECT IS FULLY EMBEDDED IN THE RELEVANT LOCAL STRUCTURES, COMMUNITIES AND ORGANIZATIONS

### Local structure and organizations



- ArBolivia's contractual relationship with the farmers and the fulfilment of mutual obligations is controlled by several organisations
  - Forestry committees are formed by ArBolivia, the farmers and their organizations to formally control the farmer project relationship
  - Community enterprises and micro companies are encouraged as they facilitate project penetration and exercise social control



#### THE ARBOLIVIA PROJECT METHOD OF WORKING

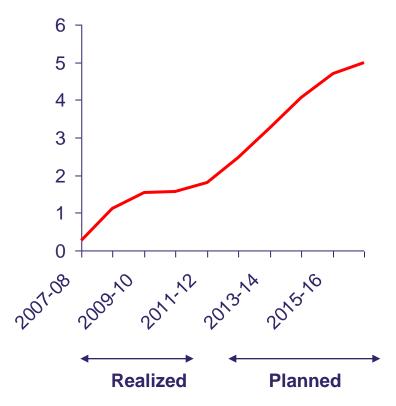
### **Business process ArBolivia**

Data **Enrollment Execution & Monitoring &** processing & POP review reporting & PES Coordinates and other Performance criteria Targeting communities, Site preparation & groups, farmers site information available planting on ArBolivia website Biophysical Transfer and sale of Training & education Quality assurance inventarization of eligible carbon credits area Integrated land use Sale of Tree Planting Maintenance and risk **Payments Subsidy Certificates** planning management Species site matching Activity planning Thinning & pruning Negotiation, signing and Harvesting and selling registration of contract timber



# ARBOLIVIA HAS ALREADY BOOKED RESULTS AND ACHIEVED A FARMER AND LAND COVERAGE OF 30% OF ITS OBJECTIVE

# Cumulative planting 2007-16\* (in 1.000 hectares)



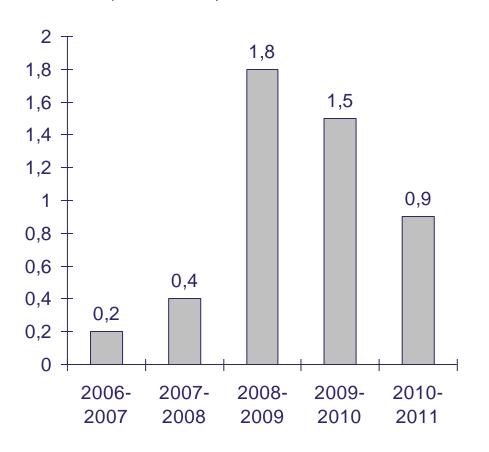
- In 2011 and 2012 the expansion is limited due to limited funds
- By 2010, 900 farmers participated in the project
- In full expansion the organization has over 60 FTE
- Currently the organization employs circa 30 FTE
- Further expansion is planned to be realised with more farmers in the same regions and by planting more hectares with already participating farmers

<sup>\*</sup> Exclusive 1,000 hectares mixed use



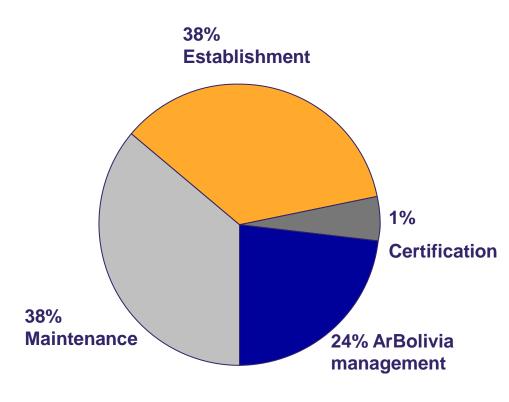
### **UNTIL 2011, \$4,8 MILLION HAS BEEN INVESTED**

# **ArBolivia investments 2006-2010** (Total 4,8 M\$)



### **Use of investments**

(%, Total 4,8 M\$)



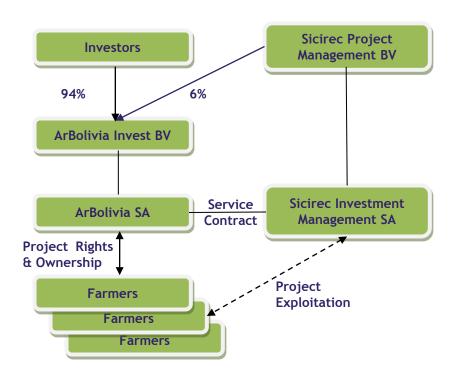
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# ARBOLIVIA LEGAL STRUCTURE MAKES A CLEAR DISTINCTION BETWEEN PROJECT INVESTMENT AND EXPLOITATION

### Legal structure for future roll-out

(Subject to tax optimization)



- ArBolivia SA will replace Sicirec Bolivia Limitada
- Sicirec Project Management BV and the investors own shares in ArBolivia Invest BV
- Project is managed by Sicirec Investment Management SA and the farmers
  - Service contract between ArBolivia SA and Sicirec Investment Management SA
  - Operational cost control risk and responsibility with Sicirec Investment Management SA
  - Operational financing obligation with ArBolivia SA



### DETAILED INFORMATION ABOUT ALL PLANTATIONS ON WWW.ARBOLIVIA.ORG



#### Información del Sector

Lugar: LA PAZ - Abel Iturralde -San Buenaventura

Propiedad: Palma Nueva Propietario(a): Juan Garcia

Farmer's children: 6

Superficie lote: 45.64 has. Especie: Tejeyeque



Waypoint sector: LPZ-ITU-SBV-SBP-37-VS2-PV2

Superficie plant.: 0.52 has. Future (Gross) 405

CO2-fixation:

Project-

emissions:

Baseline: -

Leakage: -

Land preparation: -88

Subtotal future 317

VERs:

Buffer: -95

Total VERs for sale 222

per hectare:

Net Future VERs 116.00

for this sector:



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Sound return on investment



### ARBOLIVIA OFFERS A SOUND RETURN ON INVESTMENT

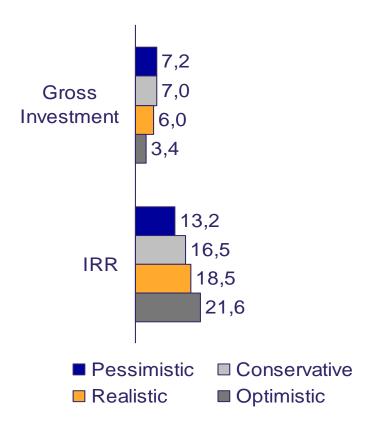
- For the project expansion a financial commitment of up to US \$ 7,2 million is sought
- ArBolivia plans to receive various payments for environmental services (PES)
- Credits from the ArBolivia project are voluntary emission rights (VERs)
- Fast, medium and slow growing trees account for a balanced revenue stream
- First significant timber revenues expected in 2014/2015
- The project has a predictable and fully controlled cost structure based on a modular bonus-malus service contract
- Project risks have been mitigated as far as possible
- Several options for expansion possible



### ARBOLIVIA OFFERS A SOUND RETURN ON INVESTMENT

### **Gross investment and return per scenario**

(Investment in M\$; IRR in %)



### Remarks

- Calculations based on a 60% share for the new investor
- Scenarios:
- Pessimistic: No loans, no PES revenues. Goal reduces project to 3.000 commercial hectares
- Conservative: Loans, no PES revenues
- Realistic: No loans, PES revenues
- Optimistic: Loans and PES revenues
- In all scenarios the IRR will increase significantly through expanding the project to 10.000 hectares
- All scenarios account for:
- Initially higher operational expenses until the project reaches full scale
- 3% annual salary increase above inflation for farmers and ArBolivia personnel

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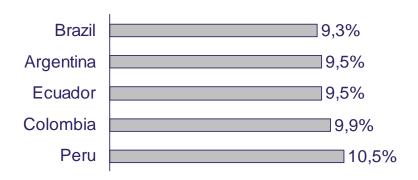
2,7% US dollar inflation



### BOLIVIAN INVESTMENTS HOWEVER COMMAND A SIGNIFICANT RISK PREMIUM

### **Latin American Bonds\***

(Annual interest rates in %)



### Remarks

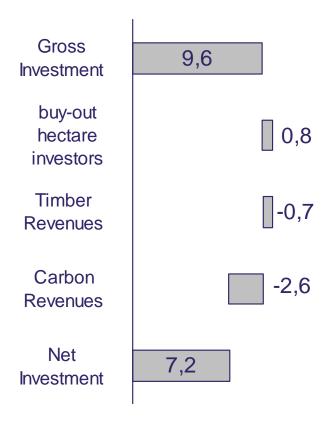
- Bolivia currently does not have outstanding bonds, but government bonds in countries with risk profiles similar to Bolivia yield between 9,3% and 10,5% suggesting a high country risk premium
- Coca farming is a major risk to the project
  - Farmers caught with illegal coca fields can be expropriated, ArBolivia farmers with coca fields are a project risk
  - Rising coca prices may increase farmers' maintenance fee demands
- US dollar exchange rate risk
- Quality of a changing management organization, due to the long timeframe, forms a project risk

Source: Bloomberg



# FOR THE PROJECT EXPANSION A FINANCIAL COMMITMENT OF UP TO US \$ 7.2 MILLION IS SOUGHT

# **ArBolivia expansion investment** (M\$)

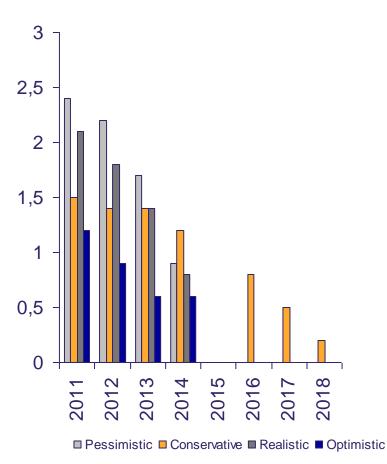


- Commitment can decrease depending on loan achievement
- Post 2015, carbon credit and thinning revenues balance out of pocket costs
- First goal is to achieve 5.000 hectares, further expansion in same area possible
- In 2011 0,8 M\$ is needed to buy-out part of the so called hectare investors
- Hectare investors invested money in return for the timber revenue rights of their specific hectares



### **EQUITY INVESTMENT SPREAD OVER SEVERAL YEARS**

# **Equity Investments 2011-2018** (M\$)



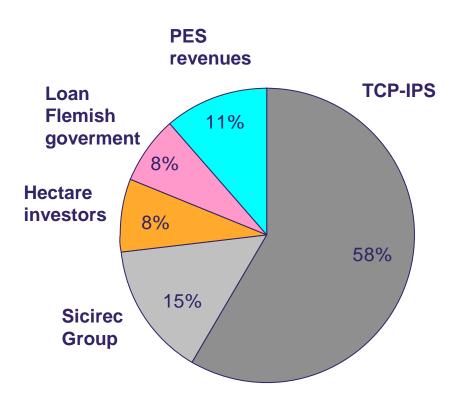
- Commitment milestones will be set
- Actual investment mainly depends on carbon credit sales and loan possibilities



# ANTICIPATED IS THAT TCP-IPS WILL CONVERT ALL THEIR RIGHTS AND CLAIMS INTO EQUITY

### **Funding till 01-01-2012**

(100% = US \$ 5,1 million)



- Hectare investors have rights on 222 ha. revenues (thinnings and harvest, no CO<sub>2</sub> rights), buying them out will reduce complexity in structure and administrative costs
- No definitive agreement on interest and term for loan from Flemish government have been set
- TCP-IPS: The Cochabamba Project is a fully trading Industrial and Provident Society providing funds to the ArBolivia project by their members
- Currently TCP-IPS acts as a hectare investor (obtained the timber revenues of 455 hectares) and provides a loan for maintenance with the timber revenues of 700 hectares and carbon credits as collateral



# ARBOLIVIA PLANS TO RECEIVE VARIOUS PAYMENTS FOR ENVIRONMENTAL SERVICES (PES)

#### PES add to ArBolivia's revenue streams

# Tree planting subsidy certificates are being sold CO<sub>2</sub> certificates are are being sold CO<sub>2</sub> certificates are also investigated

- CO<sub>2</sub> certificates are the main payment for environmental services but others are also relevant for ArBolivia
- The project seeks to develop further PES in order to
  - Reduce risks for equity providers
  - Achieve an earlier break-even point
  - Improve return expectations



## CREDITS FROM THE ARBOLIVIA PROJECT ARE VOLUNTARY EMISSION RIGHTS

## At outset, the ArBolivia project was based on a funding model which relied partially on the sale of UN CDM temporary Certified Emission Rights (tCERs)

- Generally accepted trading commodity
- In industrial demand to offset industrial emissions

## Bolivian government decided to step away from certifying emission rights according to the UN Clean Development Mechanism in 2010

- ArBolivia was certified by UN in 2010
- In the meantime the Flemish government had bought CERs from ArBolivia and made a prepayment of € 260K
- ArBolivia still may need to return the advanced payment of € 260K (US \$ 385k), potentially including interest (budgeted for)

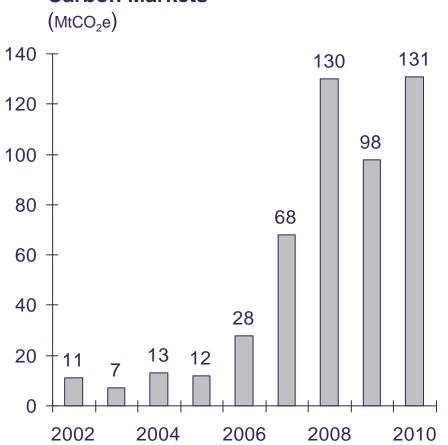
## In response, ArBolivia credits have been certified for the Voluntary Emission Rights (VER) market by Plan Vivo and can be sold to various customers

- In the meantime sold for circa US \$ 322 K (Excluding Tree planting certificates)
- Revenue per credit budgeted at US \$ 6,5 per tonne



#### VER MARKET DEVELOPING, BUT STILL SMALL WITH A VOLUME OF M\$ 424

# **Historic Volume in the Voluntary Carbon Markets**



#### Remarks

- The volume of carbon credits traded voluntarily in 2010 represents less than a 0,1% share of the global carbon markets
- In 2010, average price of credits sold in the voluntary OTC market fell slightly to \$6,0/tCO₂e, down from \$6,5/tCO₂e in 2009. As in the previous year, a handful of large low-priced trades were among the many factors that influenced the global average price, which ranged dramatically, from a low of \$0,1/tCO₂e to a high of \$136,3/tCO₂e
- Price per credit depends on various variables such as: standard, project location and project type
- The volume of forestry credits was 1 MTCO<sub>2</sub> in 2010. REDD/Avoided conversion had a volume of 18 MTCO<sub>2</sub>

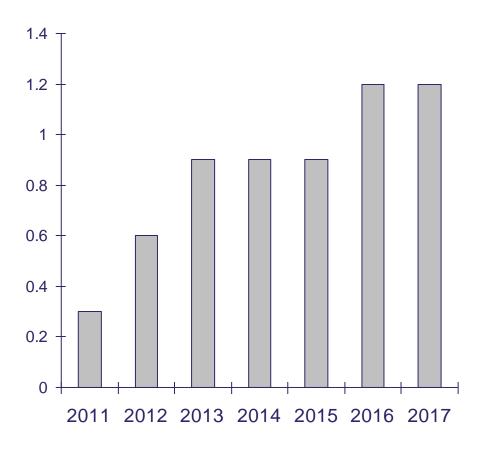
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Source: State of the Voluntary Carbon Markets 2011, www.ecosystemmarketplace.com



# THE ARBOLIVIA PROJECT WILL GENERATE 1,25 MILLION CARBON CREDITS, WITH AN ESTIMATED REVENUE OF 5,8M\$ AS OF NOW

## Carbon Credit Revenues 2011-2017 (M\$)

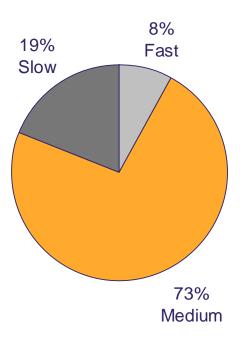


- Price of carbon estimated on \$ 6,5 per credit (In realistic and optimistic scenarios)
- 30% of credits needed for buffer
- In pessimistic and conservative scenarios with no expected PES revenues
- CO<sub>2</sub> certificates, certified for the voluntary market by Plan Vivo and CarbonFix, are sold ex ante
- Plan Vivo and CarbonFix are internationally recognized standards
- Payments for other environmental services, such as sold tree planting certificates, form a financial upside for the project



## FAST, MEDIUM AND SLOW GROWING TREES ACCOUNT FOR A BALANCED REVENUE STREAM

# Tree categories and distribution (100 % = 1577 hectares)



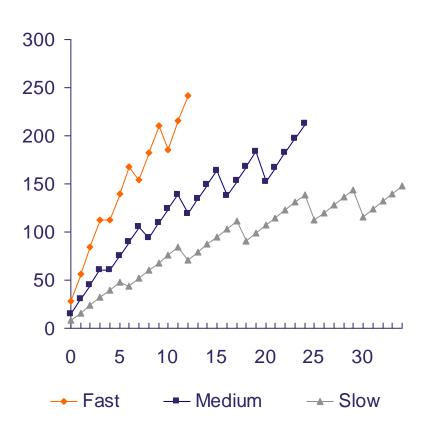
- In order to account for a balanced revenue stream, three different categories of indigenous trees are planted in plantation systems
- Slow growing trees take 35 years from planting to final harvest
  - One cycle of planting and harvesting is applied per designated area
- Medium growing trees take 25 years from planting to final harvest
  - Two cycles of planting and harvesting are applied per designated area in rotation with fast growing trees
- Fast growing trees take 13 years from planting to final harvest
  - Two cycles of planting and harvesting is applied per designated area in rotation with medium growing trees



#### TIMBER HARVEST PER HECTARE DEPENDENT ON TREE SPECIES

## **Growth and thinning rate until harvest\***

(Cubic meters per hectare)

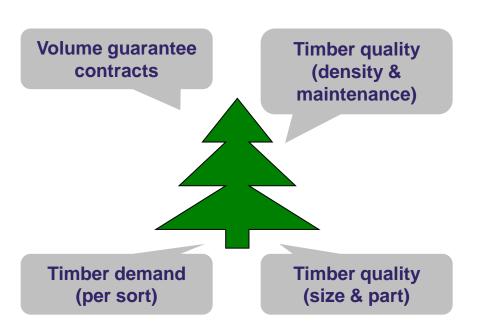


- Fast growing trees:
  - Have three thinnings
  - Deliver a total of 364 m³/ha in 13 years
  - Gross revenue of US \$ 16k/ha over 13 years
  - Budgeted tree loss rate of 10%
- Medium growing trees:
  - Have five thinnings
  - Deliver a total of 375 m³/ha in 25 years
  - Gross revenue of US \$ 84k/ha over 25 years
  - Budgeted tree loss rate of 15%
- Slow growing trees:
  - Have five thinnings
  - Deliver a total of 280 m³/ha in 35 years
  - Gross revenue US \$ 164k/ha over 35 years
  - Budgeted tree loss rate of 20%



## ECONOMIES OF SCALE AND QUALITY CONTROL LEAD TO RELATIVELY HIGH TIMBER REVENUES

## Timber price drivers

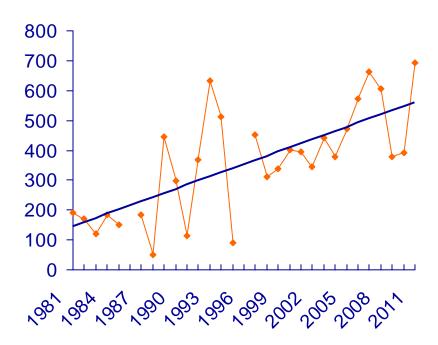


- Timber buyers look for volume security in the future and are willing to commit to substantially higher sales prices if volume security is guaranteed
  - Through a planned thinning and harvesting schedule and by its scale of operations, ArBolivia can enter guaranteed volume contracts
- Timber quality is measured in density and size
  - ArBolivia plants three tree categories varying in growing speed and timber density to optimize volume for revenue
- The indigenous tree sorts planted in the three categories meet significant local and export demand



## THE LONG-TERM PRICE TREND FOR TROPICAL LOGS IS POSITIVE AND SUPPORTS A 1,5% ANNUAL PRICE INCREASE ABOVE INFLATION

# Tropical logs, FAS (US \$ / m<sup>3</sup>)



- → U.S. hardwood log imports
- Linear (U.S. hardwood log imports)

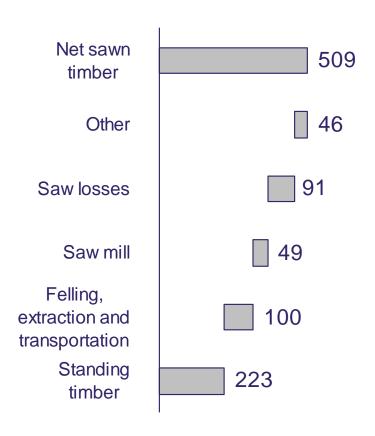
- US hardwood log imports from Latin America
- FAS: Free Alongside Ship
- Tropical timber shows a positive general price trend only interrupted by economic crises
- Tropical logs follow a stable increase pattern with a CAGR of 4,6%
- The average US inflation in the same period was 3,0%
- ArBolivia calculates with a timber price increase of 1,5% per year for export quality timber only (excluding inflation)



## WOOD PRICES CORRECTED FOR FELLING, EXTRACTION, TRANSPORTATION AND SAW MILL COSTS

## **Wood prices intermediate species**

 $(\$/m^3)$ 



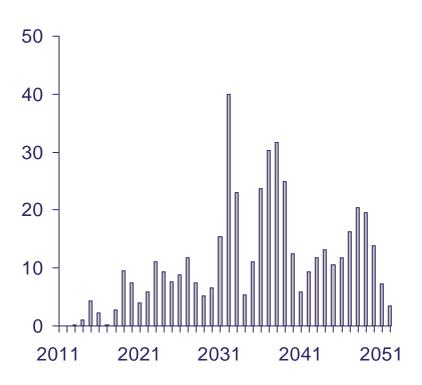
- Price based on export quality trunks intermediate species
- Other costs include drying and other processing costs
- Felling, extraction and transportation costs based on transportation to Arica harbor
- All participating farmers have access to the local road network



#### FIRST SIGNIFICANT TIMBER REVENUES EXPECTED IN 2014/2015

## Timber revenues 2011-2052

(M\$)



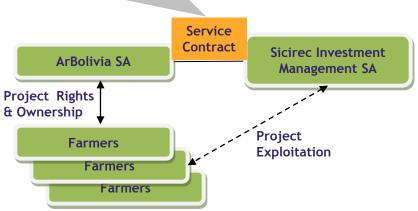
- First trees planted in 2007, thinning of fast and intermediate trees after 7-8 years
- Different prices for wood from fast, intermediate and slow growing trees and
- Further price differentiation for quality; fire wood, pulp, poles, trunks and trunks export quality
- Wood prices are expected to follow inflation; for export quality trunks an additional price increase of 1,5% is expected



## THE PROJECT HAS A PREDICTABLE AND FULLY CONTROLLED COST STRUCTURE BASED ON A MODULAR BONUS/MALUS SERVICE CONTRACT

## Major activities (cost modules) governed in service contract

Establishment of plantations
Monitoring and steering of:
Planting activities
Maintenance of plantations
Thinning and harvesting
Transport to selling points
Farmer management & compensation
Carbon certification and sales
Timber marketing & sales of standing trees



- The service contract between ArBolivia SA and Sicirec Investment Management SA governs the exploitation activities that Sicirec Investment Management undertakes as a service contractor of ArBolivia
- Bonus-malus system to govern payments
  - Fees per hectare are established for each cost module
  - Service level KPIs are established to govern
     Sicirec Investment Management's performance
  - Fulfilling or exceeding the KPI by an agreed margin leads to a bonus payment, missing the KPI by a specified margin leads to a malus payment
  - Malus payments will reduce the agreed cost module fee per hectare



## PROJECT RISKS HAVE BEEN MITIGATED AS MUCH AS POSSIBLE

Risk	Mitigation actions	Likeliness of occurrence
Nature risks	Chosen locations for plantations mitigate flooding and other natural risks; native species reduce risks considerably; certain risks can hardly be mitigated	Low
Political instability in Bolivia	All assets and rights are contractually secured, only a civil war or absolutist (expropriation etc.) actions of a future government cannot be mitigated	Low-medium
Other country related risks	Bolivia has a very high default risk, both as a country and for the individual companies in the country; ArBolivia has mitigated this risk through careful contracting and locally experienced leadership	Low-medium
Growing coca demand leads farmers to recommit project areas	Land used for project has been contractually committed; it is contractually controlled by Sicirec Investment Management SA and socially controlled by the farmer and forestry organizations	Low
Poor quality of management organization	Service contract with modular payments with bonus / malus systems guards the quality of actions, in case the organization has to change, all rights and duties are transferred	Low
Contract fulfilment risk farmers	Forestry committees, fair trade timber prices, legal status POP, tree stand as collateral for microcredits	Low-medium
Salary inflation	Has been budgeted for at 3% above inflation	Low

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#### SEVERAL OPTIONS FOR EXPANSION POSSIBLE

- Expansion from 5,000 to 10,000 15,000 hectares
- More preservation of natural forest in relation with additional REDD sales
- Distribution of CO<sub>2</sub> credit and tree planting certificate sales (inhouse vs outsourced)
- Adding additional activities (Timber processing, renewable energy, ..)
- New projects, same formula in different countries