

IMPLEMENTING THE *EUROPEAN LANDSCAPE CONVENTION* IN LAKE CATCHMENT RESTORATION PROJECTS

AN AZOREAN CASE STUDY

THE *EUROPEAN LANDSCAPE CONVENTION* (ELC)

- “THE EUROPEAN LANDSCAPE CONVENTION OF THE COUNCIL OF EUROPE **PROMOTES THE PROTECTION, MANAGEMENT AND PLANNING OF EUROPEAN LANDSCAPES** AND ORGANISES EUROPEAN CO-OPERATION ON LANDSCAPE ISSUES. (...)

IT IS THE FIRST INTERNATIONAL TREATY TO BE EXCLUSIVELY **CONCERNED WITH ALL DIMENSIONS OF EUROPEAN LANDSCAPE.”**

PREAMBLE OF THE *EUROPEAN LANDSCAPE CONVENTION*

- " THE **LANDSCAPE** ...
- ... HAS AN IMPORTANT PUBLIC INTEREST ROLE IN THE **CULTURAL, ECOLOGICAL, ENVIRONMENTAL AND SOCIAL** FIELDS, AND **CONSTITUTES A RESOURCE FAVOURABLE TO ECONOMIC ACTIVITY AND WHOSE PROTECTION, MANAGEMENT AND PLANNING CAN CONTRIBUTE TO JOB CREATION;** ... CONTRIBUTES TO THE FORMATION OF LOCAL CULTURES AND ... IS A BASIC COMPONENT OF THE EUROPEAN NATURAL AND CULTURAL HERITAGE, **CONTRIBUTING TO HUMAN WELL-BEING** AND CONSOLIDATION OF THE EUROPEAN IDENTITY;
- ..."

THE AZORES



- 9 islands, apart by 500 Km's from East to West;
- Europe- 1.500 Km & North America- 2.700 Km;
- 250.000 inhabitants (400 on the smallest – 17,12 Km²; 130.000 on the largest – 747 Km²)
- Economy based: public services; dairy farms; fishing; agriculture; some forestry; increasing tourism;
- Influencing weather in Europe and UK with “our beloved” anticyclone;

FURNAS

Strengths:

- One of the most emblematic landscapes of Azores;
- Rich culture and landscape;
- Secondary volcanic activity;
- Historic garden woodlands & thermal springs;

Threats:

- Dairy farms;
- *Cryptomeria japonica*, monospecific forest stands;
- Invasive species;
- Eutrophicated lake;

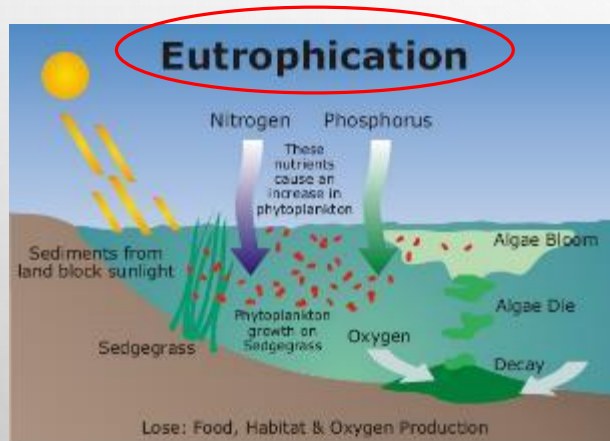
SÃO MIGUEL ISLAND



FURNAS PROTECTED LANDSCAPE



PROBLEMS AT FURNAS LAKE CATCHMENT



- AMONG OTHER PROBLEMS (POLLUTING RESIDUES, INVASIVE SPECIES, LACK OF LONG TERM PLANNING, LOST CULTURAL PATRIMONY, DEGRADED GREEN SPACES & VISITING AREAS, WEAK ECONOMY, MONOCULTURES)

HOW TO SOLVE ENVIRONMENTAL DEGRADATION?

- MOST OFTEN ENVIRONMENTAL DEGRADATION IS A CONSEQUENCE OF SOCIO-ECONOMIC DEVELOPMENT

THEREFORE

- ONE CAN NOT OVERLOOK THAT THE ECONOMY, THAT IS PART OF THE PROBLEM, HAS TO BE CONSIDERED AS PART OF THE SOLUTION

BECAUSE

- FOCUSING STRICTLY ON ENVIRONMENT TO SOLVE AN ENVIRONMENTAL PROBLEM WILL OFTEN NOT BE THE LONG RUN SOLUTION

POLICIES AND PLANNING

Furnas Lake Catchment restoration Plan (2000-2005):

- Reduce nutrient runoff to the lake;
- Increase biodiversity;
- Safeguard income sustainability;
- Diversify and consolidate the basis of the local economy;
- Promote local values;
- Minimize geotechnical risks.

– 2007/2008 about 300ha of land acquired



ECOLOGICAL RESTORATION

- LITTER REMOVAL ACROSS THE LANDSCAPE



Removal of tons of polluting residues across the Landscape (e.g. plastics; tires; abandoned vehicles; junk; packages)

- INVASIVE FLORA CONTROL across 160 ha of pastureland



ECOLOGICAL RESTORATION

- SILTATION PREVENTION - RESTORATION OF 8 EROSION GULLIES, TOTALIZING OVER 2 HA



Replacement of invasive species by natives

ECOLOGICAL RESTORATION

- SILTATION PREVENTION – NATURAL ENGINEERING



Installation of water energy dissipaters with local timber and reeds

- SILTATION PREVENTION – REDUCTION OF THE HYDROLOGICAL TORRENTIAL REGIME

Establishment of ponds, by blocking old draining systems



ECOLOGICAL RESTORATION

- SILTATION PREVENTION – SEDIMENT RETENTION BASINS



6 retention basins built along stream beds, from where 20.000m³ of sediments/year are removed, preventing the solid particles from reaching the lake;

PROMOTING BIODIVERSITY

- Production of thousands of herbaceous endemic (30.000/3 years)

Malfurada- *Hypericum foliosum*

Patalugo-menor – *Leontodon rigens*

Labaca-das-ilhas – *Rumex azoricus*

Trovisco-macho- *Euphorbia stygiana*

Malvavisco- *Pericallis malvifolia*

Angelica lignescens

Lysimachia azorica

Queiró- *Calluna vulgaris*

Feto-do-botão- *Woodwardia radicans*

Azorina vidalii



PROMOTING BIODIVERSITY

- PRETTY NATIVES REPLACE PRETTY INVADERS



Plantation of *Viburnum treleasei*
after the removal of *Hydrangeas*
at *Furnas Protected Landscape*



PROMOTING BIODIVERSITY

- FAUNA- SHELTERS & NESTING BOXES



Native & migrating birds



Endemic bat shelters
(at our sites and all partner head offices)

Making use of:

- invasive species timber;
- unemployed workers;
- EU project financed tools;
- donated shipping container;
- Internet & Imagination.

REVIVING CULTURAL VALUES

- RESTORATION OF FURNAS TRADITIONAL FRUIT ORCHARD



REVIVING CULTURAL VALUES

- RESTORATION OF FURNAS TRADITIONAL FRUIT ORCHARD



REVIVING CULTURAL VALUES

- WILLOW COLLECTION RESTORE STREAM BANK & BASKET MAKING

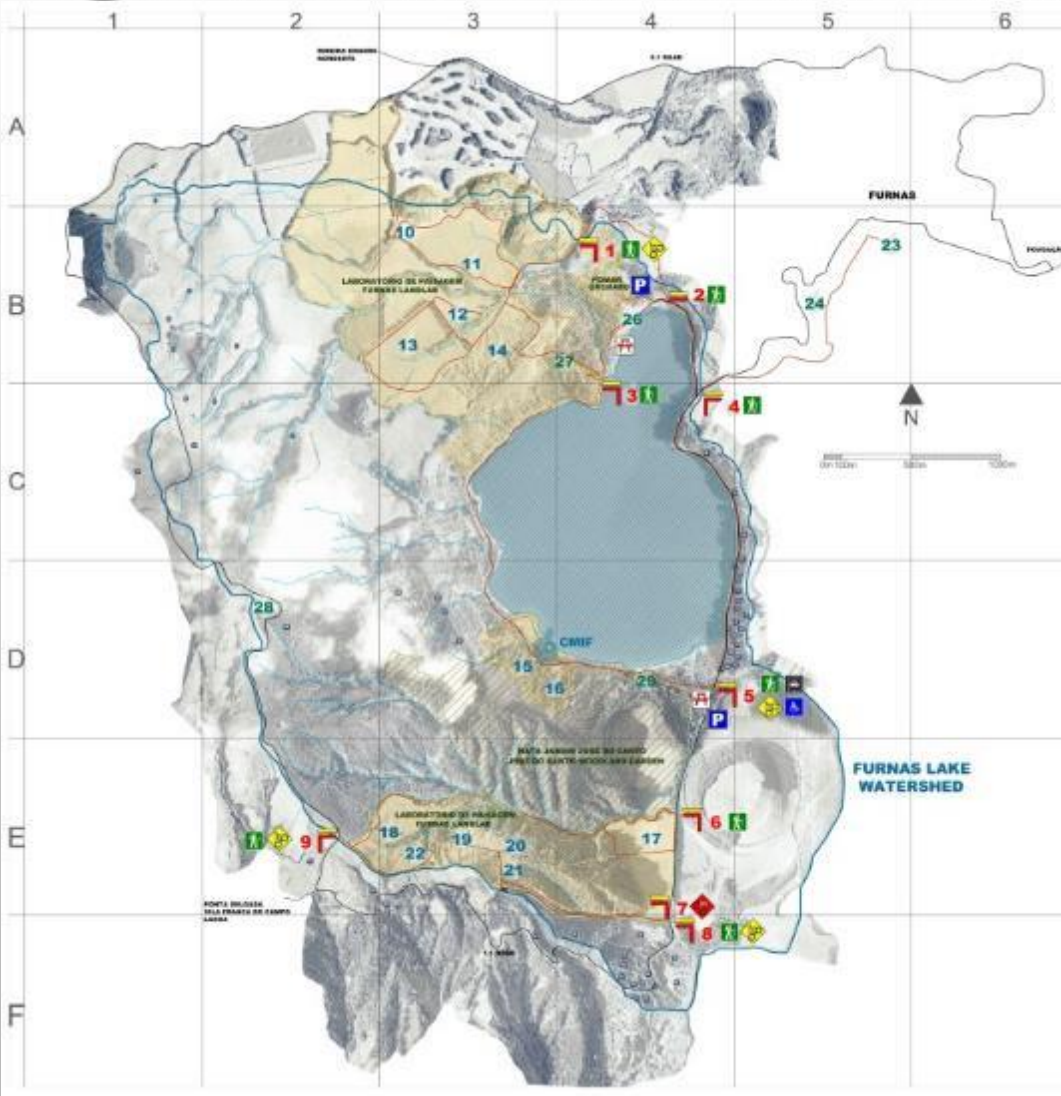


Workshop supported by members from the *English Basket Makers' Association*, for local basket makers, schools and new apprentices

Cost of the Event "0 €" – through our partnerships

PROMOTING ECONOMIC DEVELOPMENT

PLANNING OF A MULTIUSE TRAIL NETWORK



PROMOTING ECONOMIC DEVELOPMENT

Restoration of Furnas lake degraded margins through European cohesion funds: Proconvergência, POVT



Ruin demolition and removal of invasive flora



CMIF's Construction and planting of thousands of endemic plants



Facilities for Environmental education & to present the project

New accommodation for visiting partners, researchers, interns, artists and volunteers



PROMOTING ECONOMIC DEVELOPMENT

Restoration of Furnas lake degraded margins through creativity



LandArt to
promote
tourism &
longer visits

PROMOTING ECONOMIC DEVELOPMENT

Restoration of Furnas lake degraded visitation area through partnerships



We provided:

- the landscaping project;
- the wood (of an invasive hardwood);
- seedlings;

Local municipality provided:

- unemployed workers;
- stone;
- nails & screws;

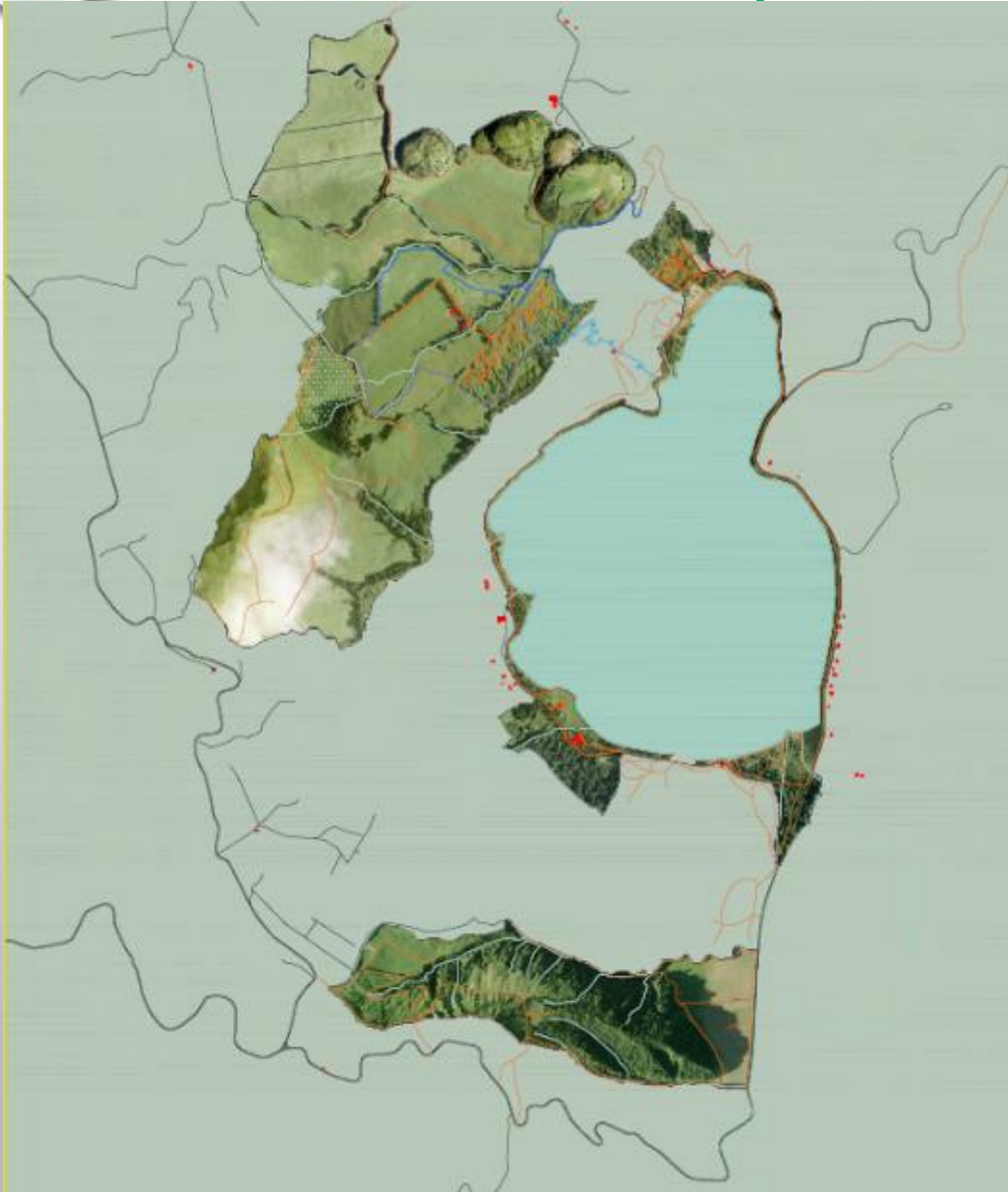
Costs reduced to minimum!

Resulted in:

- Improvement of the space;
- New attractive feature;
- Orderly visitation;
- Reduced accidents;

FURNAS LANDSCAPE LABORATORY

(FURNAS LANDLAB)



- Furnas Landscape Laboratory is the homologous of the technological parks, but with a Natural Science vocation, installing full scale plots in the landscape;

How was it born?

- Through the acquisition of public land in 2007;
- *Furnas Landlab* obeys to the catchment measures and protected landscape policies;
- It's a large scale multifunctional landscape;

Objectives:

- Search for ecological, economical and social sustainability;
- Generate practical and scientific knowledge through the watershed plan implementation;
- Research on sustainable alternatives to the existing monocultures;
- Install real scale examples;
- Create a Multifunctional Forest Landscape

PROMOTING A GREENER ECONOMY

- SUSTAINABLE MANAGEMENT OF PUBLIC OWNED PASTURES AND MEADOWS

Over 8260 silage bales, equivalent to 6000 TON of grass and respective nutrients, exported away from the catchment



100 bales/cut



Approx. 400 bales /cut
+ honey + scenic views



Rustic Golf activities

PROMOTING A GREENER ECONOMY

- **DIVERSIFICATION OF FORESTRY ECONOMY**

- **Experimental trials of:**

Silviculture techniques;

Planning & Design;

Native species;

Hardwoods;

Provenances;

Concepts;



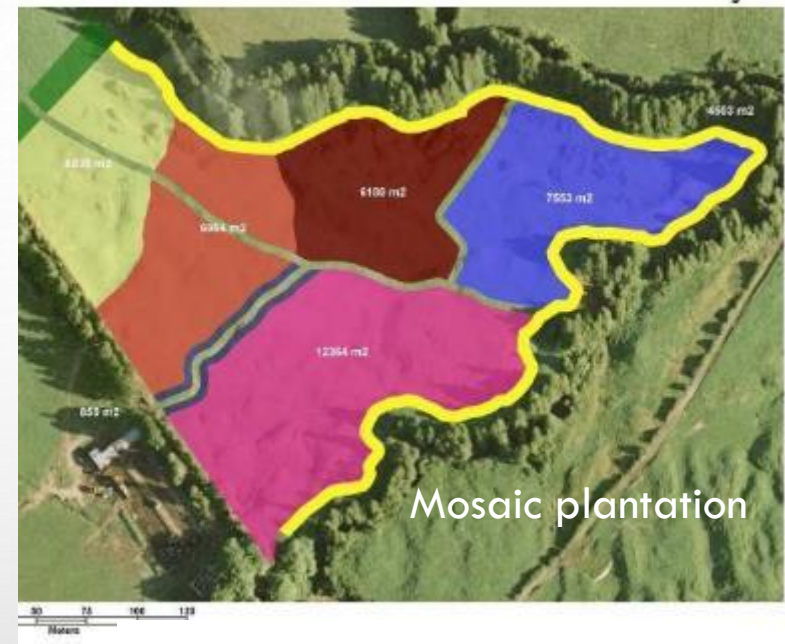
- Plantation of over 150,000 trees and shrubs, over 60 ha of public owned land;
- 34 ha of pastureland planted by estate owners;
- Plantation of over 2 Km of vegetation buffers along streams;

PROMOTING A GREENER ECONOMY

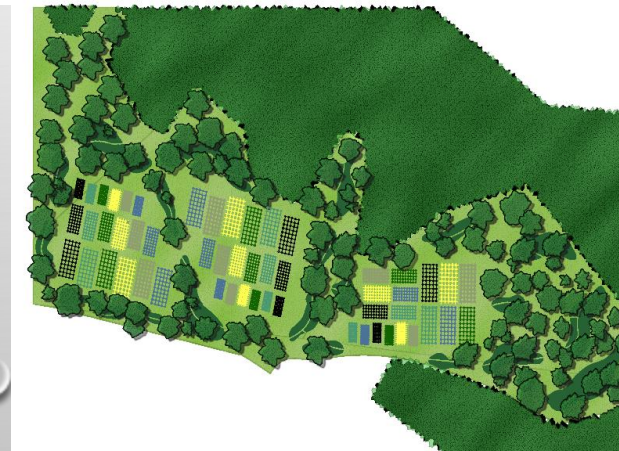
- MULTIFUNCTIONAL FOREST LANDSCAPE



Reinforce – EU project



MIT GreenIslands



PROMOTING A GREENER ECONOMY

- NEW FRUIT ORCHARDS

Apple orchard with 21 traditional varieties



Native blue berry (*Vaccinium cylindraceum*) orchards with 800 identified genetic units



WE DIDN'T DO IT ALONE!

A Social project:

Involving the community in the landscape enhancement

Local community

Research institutions

Partnerships

Companies & enterprises

Associations & NGO's

Public entities

HOW PARTNERS WERE ATTRACTED

THE APPROACH WAS TO:

- PROVE THE PROJECT'S VALUE AND OURSELVES THROUGH HARD WORK;
- NEVER SAY NO TO A REQUEST;
- ADVERTISE SUCCESS;
- DIFFERENTIATE PARTNERS (PROFIT VS. NON-PROFIT);
- ALWAYS OFFER, BEFORE ASKING FOR;
- BE CREATIVE, INNOVATE & MOTIVATE;
- CREATE INDIVIDUALLY CUSTOMIZED PROJECTS FOR EACH PARTNER;
- DONATIONS: DON'T EXPECT/ASK FOR MONEY, ASK FOR RESOURCES TO IMPLEMENT THE PROJECT (TOOLS, MACHINERY, VEHICLES OR SERVICES);
- TEACH AND INFORM THE PARTNER THROUGHOUT THE PARTNERSHIP ESTABLISHMENT (ABOUT THE PROJECT AND ITS PRINCIPLES);
- ORGANIZE INFORMAL GATHERINGS SUCH AS NATURE WALKS;



PLANNING “D” FIELD DAY

THE STRATEGY WAS:

- VOLUNTEERS INVOLVEMENT AND THEIR SATISFACTION IS MORE IMPORTANT THAN THE WORK THEY ACCOMPLISH;
- DON'T OVERDO IT,
 - PREPARE SOME OF THE HARD WORK AHEAD;
 - PLAN LIGHT WORK FOR A PERIOD OF 1-2 HOURS;
- HAVE A SHORT EXPLANATION ABOUT:
 - THE OVERALL PROJECT;
 - THE MISSION FOR THE DAY;
 - WHO; WHERE; HOW; WHY;
- GUIDE AND ASSIST THOSE WHO NEED;
- ORGANIZE AN INTERPRETATIVE WALK TO SHOW PREVIOUS RESULTS;
- THANK & CONGRATULATE THEM!



COMMUNITY INVOLVEMENT

Public entities



Azores Military Zone (ZMA)
**2009 National Defense and Environment
Award**



Employment Office
(24 unemployed workers on social welfare)



Azores Handicraft Centre
(CRAA)



Azores water management body
(AHA)



São Miguel's Agricultural Services



Azores Forest Services (DRRF)

THE 1ST PARTNERSHIP = 1ST NATIONAL AWARD



- PARTNERSHIP WITH THE ARMED FORCES STATIONED AT THE AZORES
 - ARMY PROVIDED 9 MEN;
 - SME SUPPORTED (TECHNOLOGICAL, TECHNICAL, FINANCIAL):
- 2009 DEFENCE AND ENVIRONMENT NATIONAL AWARD, RECOGNIZING 2 YEARS OF COOPERATION



National News = More visibility and more partnerships

PLAN FOR THE COMMUNITY

- THERE IS MORE TO A RESTORATION PROJECT THAN JUST ECOLOGY
 - THE LANDSCAPE IS ALSO MEANT TO BE LIVED BY PEOPLE, NOT ONLY PLANTS AND ANIMALS;
 - BRING THEM TO THE LANDSCAPE;
 - HEAR WHAT THE LOCALS HAVE TO SAY;
 - THINK OF THE NEEDS OF THE LOCAL COMMUNITY;
 - HELP TO IMPROVE THEIR SOCIO-ECONOMIC CONDITIONS;
 - BE PRO-ACTIVE IN ESTABLISHING CONTACT AND CREATING TRUST;
 - MAKE THEM TO GET INVOLVED IN THE MANAGEMENT & MAINTENANCE OF THE LANDSCAPE;

COMMUNITY INVOLVEMENT

Local community



Local Furnas school – plantation of endemics



Local Tuna fishing – Invasive Bamboo poles provided



Furnas Scouts – Maintenance of a allotted valley

EXAMPLE- FURNAS YOUTH

- WHO? SCOUTS AND SCHOOL;
- PROPOSED PROJECT
 - MANAGEMENT OF AN AREA & PLANTATIONS;
- PROJECT BENEFITS
 - INVOLVEMENT OF THE LOCAL COMMUNITY;
 - ENVIRONMENTAL EDUCATION (ENDEMIC SPECIES);



EXAMPLE- THE LOCALS

- BY WORKING WITH SCOUTS AND SCHOOL KIDS, YOU:

- TEACH THE NEW GENERATION;
- ALSO REACH THEIR PARENTS AND GRANDPARENTS;
- CREATE INFORMAL SITUATIONS FOR TALKS;

PROMOTE DISCUSSIONS AND CONVERSATIONS TO CLARIFY THE PROJECT, ITS VISION AND INTENTIONS.

TARGET THE KEY ELEMENTS OF THE COMMUNITY (IN OUR CASE: SCOUTS CHIEF, RESTAURANT OWNER, CHURCH SUPPORT GROUP, PRIEST, HARDWARE STORE OWNER, TOURISM OFFICE STAFF, ETC...)

SOME OF THE MOST SCEPTICAL PEOPLE BECAME THE MOST SUPPORTIVE OF THE PROJECT.

COMMUNITY INVOLVEMENT

Associations



Outdoor Activities enthusiast club
(CALAG)



Geoparque Azores



Portuguese Society for Birds (SPEA)



Azores Amateur Photographers
Association (AFAA)



International Congress and
Convention Association (ICCA)



Azores Biking Association



Azores Archery Association (ARATA)

COMMUNITY INVOLVEMENT

Research Institutions



Azores Biotechnology Center –
Micropropagation of
woody endemics



Azores University– field classes and projects



Insect Monitoring-
UAç, Biodiversity
Group



**ZERo-imPact
innovative
techNology in
foRest plant
production**



European Forest Institute – Climate change study

COMMUNITY INVOLVEMENT

Companies & Enterprises



Regional Airline SATA - SATAForest



Fundação PT - LogoPT



Grupo Bensaúde - GreenPrint



ValorPneu – CO₂ offset



EEG Lda , Grupo EDA –Study of Pollens



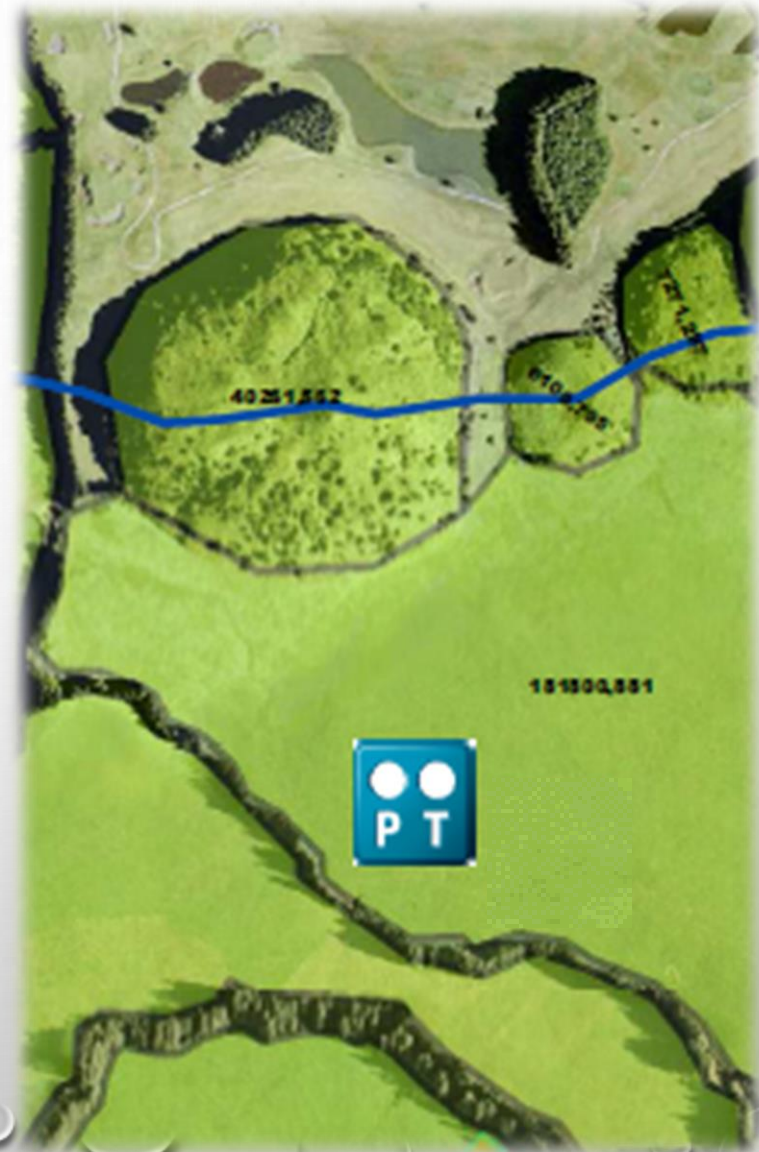
STIHL, A.S. Maia – Furnas Woodcarving Events



Furnas Golf Course – Driving Range

EXAMPLES- PT LOGO

- WHO? PT- NATIONAL TELECOMMUNICATIONS COMPANY
- PROPOSED PROJECT-
 - GREEN THEIR IMAGE BY HELPING THE PROJECT AND PROMOTING NATIVE FLORA (*JUNIPERUS BREVIFOLIA*);
 - TO GIVE THEM VISIBILITY IN A GRAND SCALE – PLANT THEIR LOGO 100M X 100M FOR GOOGLE EARTH VIEWING;
- PROJECT BENEFITS
 - SEED ORCHARD FOR FUTURE RESTORATION PROJECTS;
 - LARGE DONATION FOR THE PROJECT;
 - PUBLICITY;





COMMUNITY INVOLVEMENT

PT LOGO – GOOGLE EARTH

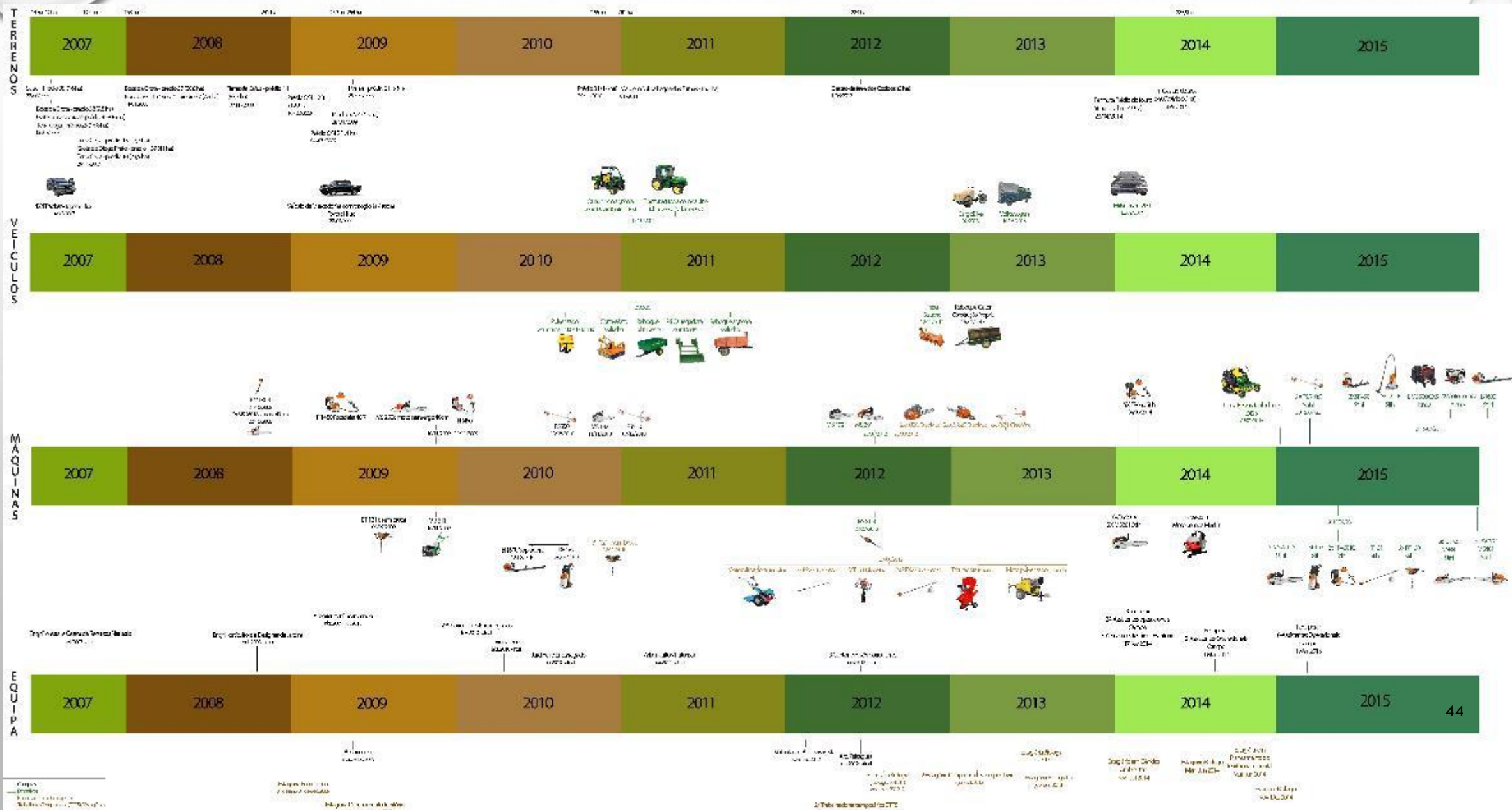


KEEPING YOUR PARTNERS ENGAGED

- KEEP CONTACT WITH YOUR PARTNERS EVEN AFTER CONCLUSION OF THE JOINT PROJECT;
- ACKNOWLEDGE THEIR ROLE;
- ADVERTISE THE SUCCESS OF JOINT VENTURES;
- REMEMBER THEM WHEN NEW OPPORTUNITIES ARISE;
- KEEP THEM UPDATED;
- WRITE THEM FOR X-MAS;



THANKS TO PARTNERSHIPS THE PROJECT GREW IN RESOURCES



THE ONLY WAY TO MANAGE A LIVING LANDSCAPE IS THROUGH PARTNERSHIPS



A GREAT TEAM IS FUNDAMENTAL



THANK YOU FOR YOUR TIME!

