

Wire hills forest: a sustainable management program



CEFA
the seed of
solidarity



What ?

Three years project funded by European Union from 1st April 2010, 1.800 HHs direct beneficiaries, 120.000 people indirect.
12 months extension was granted.

Where ?



South Nyanza, Rachuonyo South District, Kasipul Division
Kachien, North Kamagak and West Kamagak locations



Wire Hills Forest Conservation and Sustainable Management.
Contract No DCI-ENV/2009/151-545



Goals ?



1. Capacity of local community institutions and government strengthened on Community Forest Management
2. Capacity of local community institutions and government strengthened on Community Forest Management
3. Non timber innovative income generating activities identified
4. Implementation of a **GIS** for forest management and planning



What do we do?



1. *Capacity of local community institutions and stakeholders' staff strengthened on PFM*

Activities

Formation of a **Local Planning Team** for Wire





What do we do?



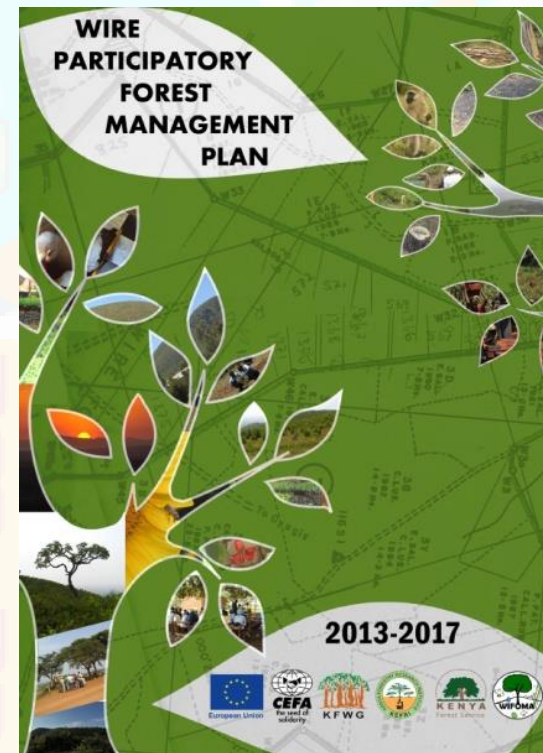
1. *Capacity of local community institutions and stakeholders' staff strengthened on PFM*

Activities

Development of a **Participatory Forest Management Plan**



PFMP approved, signed and launched
FMA negotiated and passed by FCC





What do we do?



2. *Degraded hillsides rehabilitated*

Establishment/Support of community tree nurseries and the central tree nursery in Wire Forest





What do we do?

2. Degraded hillsides rehabilitated



Rehabilitation of Wire Forest

Assisted natural regeneration
Enrichment planting
Community involvement through employment of casual workers and community planting days



Area under rehabilitation
215 Ha





What do we do?

3. *Non timber innovative IGA identified and implemented*



Support implementation of NTFPs activities

Fruit production

Around 1800 grafted
Mangoes planted



Bamboo

49 people ; 350 seedlings



Multipurpose hedgerows

Sesbania and calliandra; >400 farmers involved





What do we do?

4. GIS for forest management and planning

Remote training

- 10 trained persons
- 3 WIFOMA CFA
- 4 KFS
- 3 CEFA










What do we do?

Field survey:
dedicated easy to fill field forms



4. GIS for forest management and planning

Wire Forest

SURVEY INFO

PLOT NO. PLOT RADIUS (MT)
 SURVEYOR DATE (DD/MM/YYYY) / /

PLOT PROPERTIES

SOIL EROSION: Low Medium High FELLING-CUTTING: Not Old Recent
 GRAZING: Low Medium High CROWN COVER: Open Moderate Close
 FOREST AREA: Natural forest Plantation NUMBER OF TREE SPECIES:

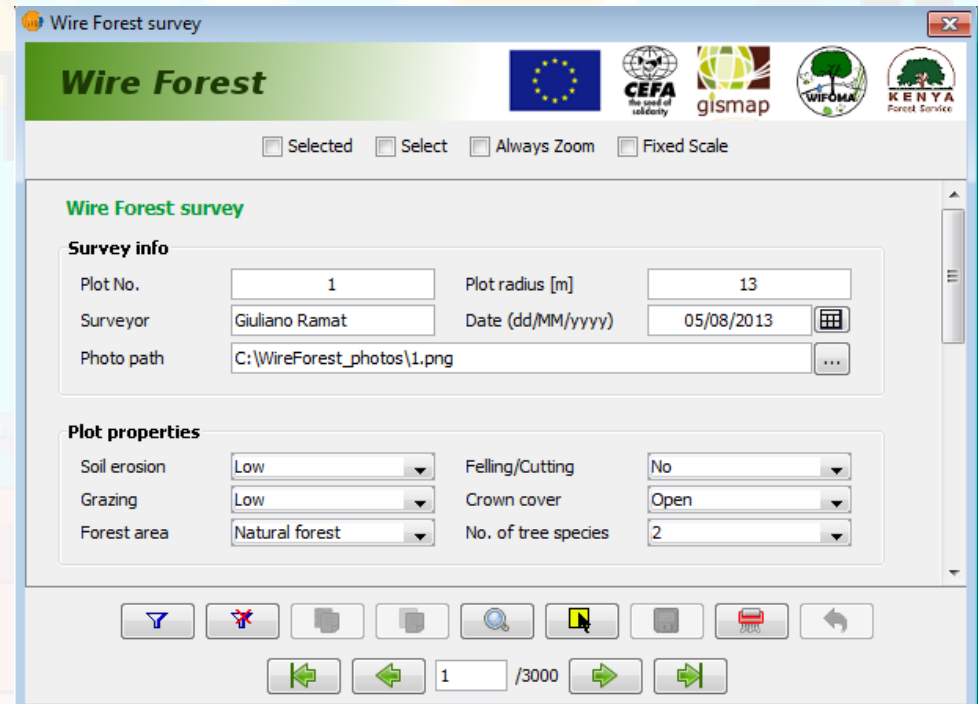
TREES PROPERTIES

TYPE	TREE SPECIES	FREQUENCY	AVERAGE HEIGHT	AVERAGE DBH
INDIGENOUS	Anjaga			
	Rhus natalensis			
	Amnona spp			
	Combretum spp			
	Euclea divinorum			
	Ficus spp			
	Teclea nobilis			
	Terminalia spp			
	Vitex spp			
	Croton macro			
Others (.....)				
COMMERCIAL	Pinus Patula			
	Pinus Radiator			
	Eucalyptus spp			
	Cupressus lusitanica			
	Callitris robusta			
	Gravellia robusta			
Others (.....)				

NOTES

What do we do?

4. GIS for forest management and planning



Dedicated extension
Dedicated gvSIG
portable version

Easy to fill data entry
Customized and easy-to-fill
data entry form

What do we do?

4. GIS for forest management and planning

The number of editable tree species is automatically limited according to the entered value in “No. of tree species”

The list of species that can be entered, depends on the “Forest area” selected value

No.	Tree species	Frequency	Average height [m]	Average DBH [cm]
1	Anjago	25	12	125
2	Rhus natalensis	20	10	105
3		0	0	0



What do we do?



4. GIS for forest management and planning

DATA DEVELOPMENT: georeferencing maps

The screenshot displays the gvSIG 1.12.0 portable software interface. The main window is split into two panes, both labeled 'Georeferencing view'. The left pane shows a grayscale aerial photograph of a forested area with a red crosshair indicating the current cursor position (X: 0.0, Y: 0.0). The right pane shows the same area with a color-coded map overlay. A legend on the right side of the right pane identifies the zones: Commercial zone (light blue), Community use sub-zone (green), NTFPs sub zone (dark blue), and Non extractive zone (red). Below the main panes, there are several control panels: a 'Zoom control' panel on the left, a 'GCP panel' (Ground Control Points) in the center, and another 'Zoom control' panel on the right. The GCP panel includes fields for 'No', 'World X', 'World Y', 'Image X', 'Image Y', and 'RMS'. The status bar at the bottom indicates 'Metres | X = -552.22 | Y = 3,759'. A separate window on the right shows the 'View: Untitled - 0' with a legend for 'PFM' (Protected Forest Management) and a corresponding map view.



What do we do?

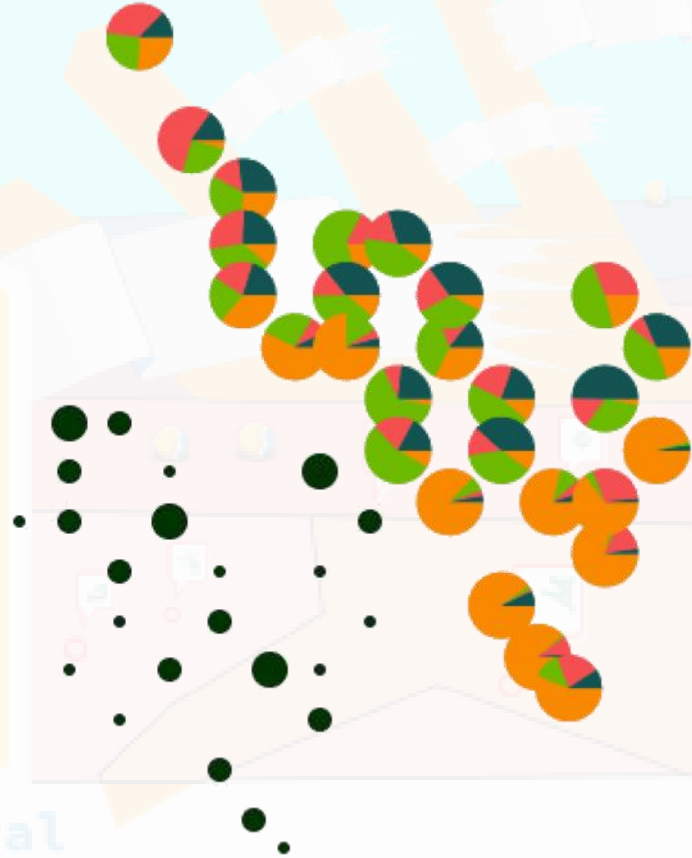
4. GIS for forest management and planning

DATA DEVELOPMENT: check data and elaboration

29 plots survey (Ø 13 m)

73% natural regeneration

72% open crown cover
28% moderate crown cover
75% intensive grazing





What do we do?

4. GIS for forest management and planning

OPEN DATA: download and elaboration

Idrography:

<http://hydrosheds.cr.usgs.gov/>

Digital elevation model:

<http://asterweb.jpl.nasa.gov>

<http://srtm.csi.cgiar.org>

Socio economics data:

<http://data.worldbank.org/country>

Administrative limits:

<http://www.gadm.org/country>



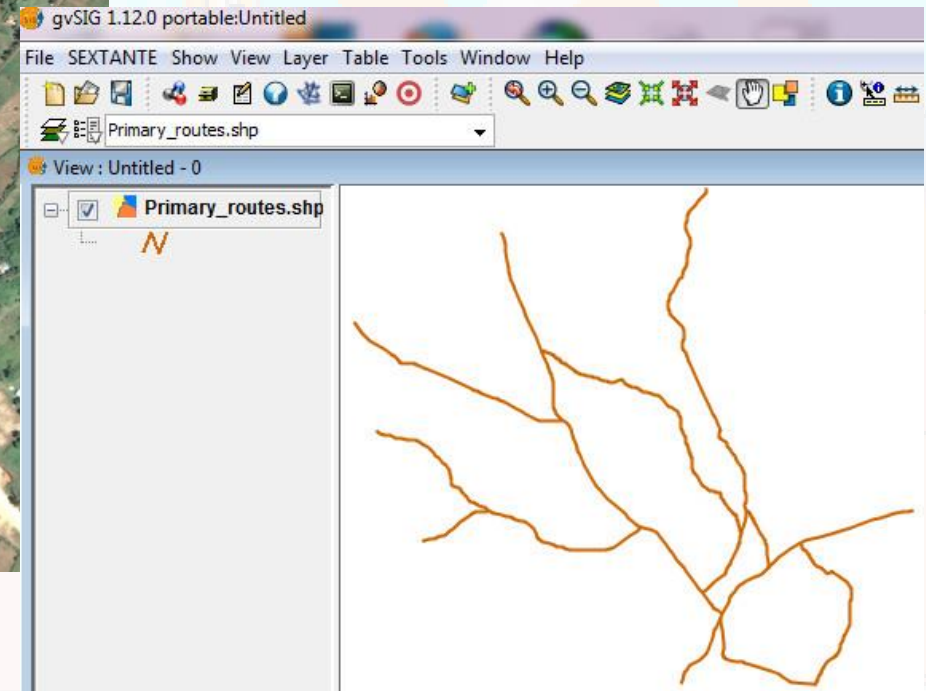
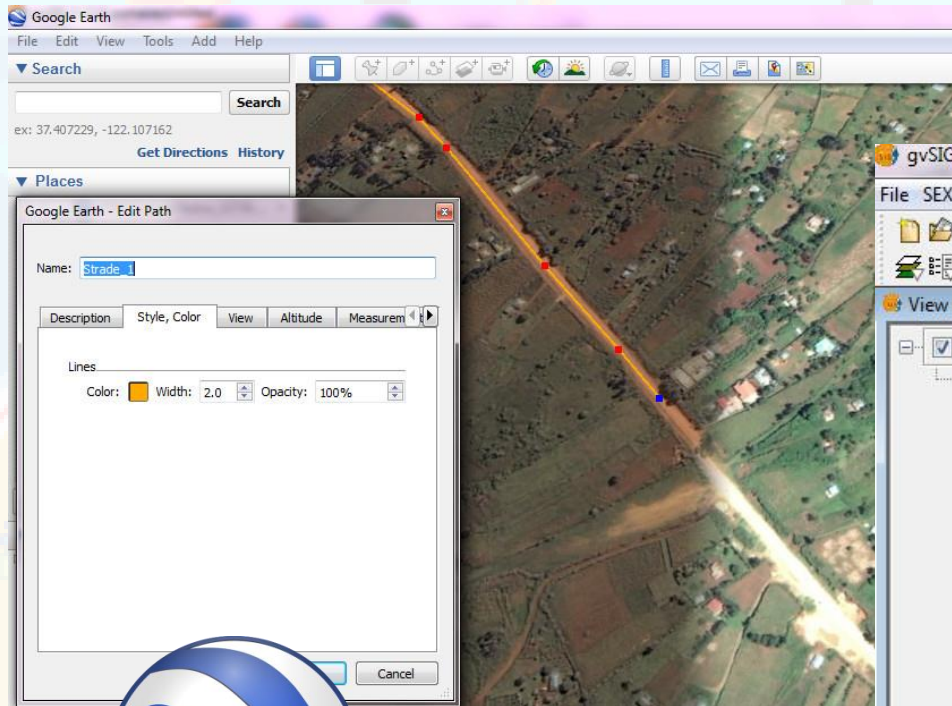


What do we do?



4. GIS for forest management and planning

REMOTE SENSING DATA: digitize and upload data



Google Earth

.. can be translated in local languages

... OPEN free access



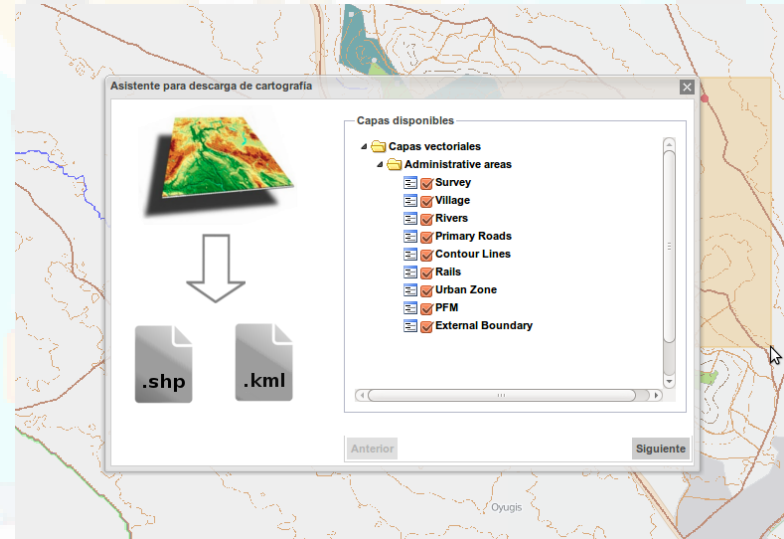
Publish all the data to make them free to access and consult as support for decision makers

.. can be replicated in similar close environments

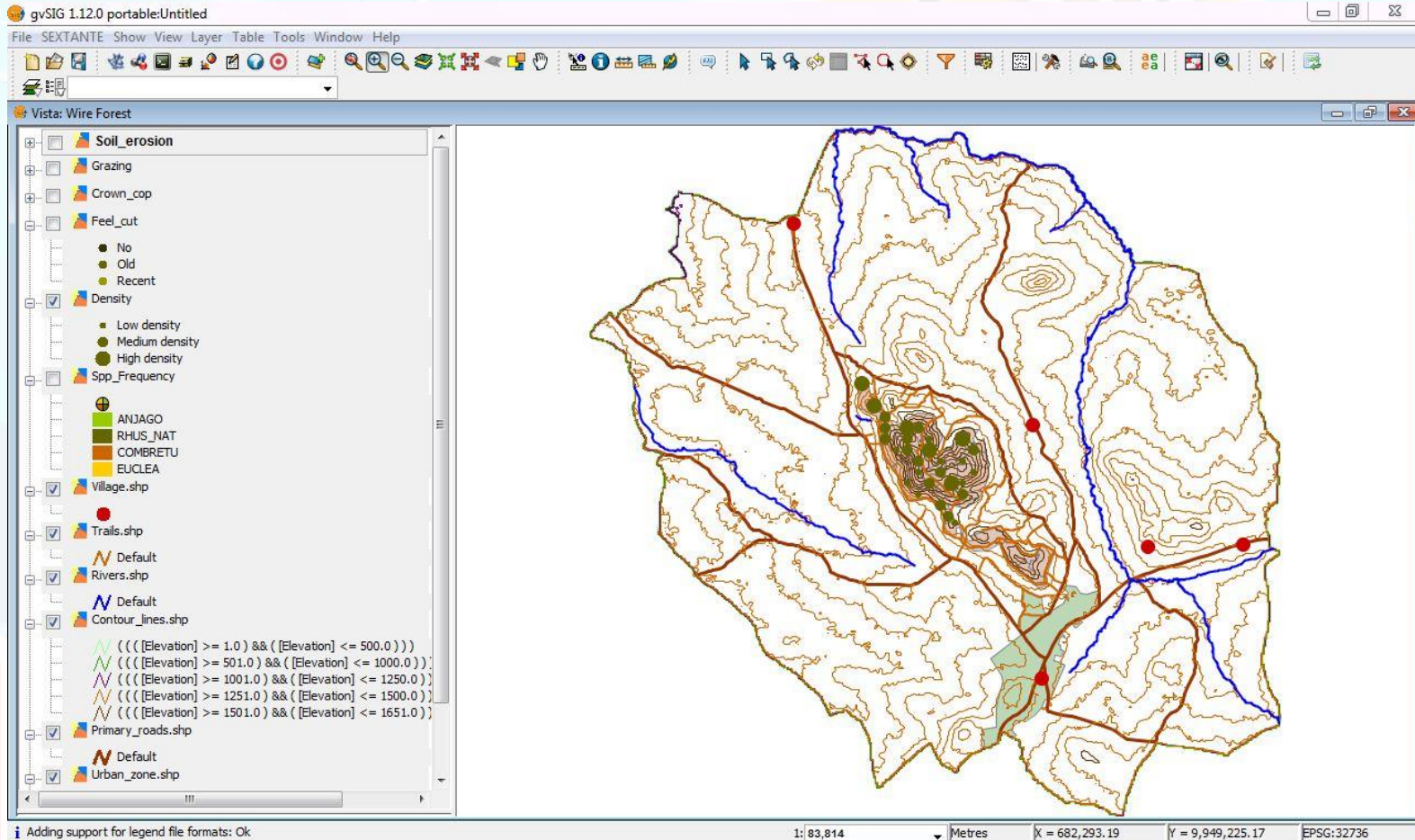
... is easy to use and update regularly

THE WEB GIS: functionalities

- Choose layers to display
- Load layers
- Edit symbols and label
- Zoom/pan
- Identify, search, query features
- Measure
- Print layout



THE WEB GIS: functionalities



THE WEB GIS: functionalities

The screenshot displays a web GIS interface with the following components:

- Logo:** gvSIG association
- TOC / Legend:** A panel on the left showing a list of layers with checkboxes. The 'Survey' layer is checked.
- Layer info window:** A central window titled 'Layer info' showing a table of attributes and values for the selected 'Survey' layer.
- Map:** A map in the background showing a geographical area with various features like roads, rivers, and administrative boundaries. A cluster of red and green dots is visible on the map.
- Coordinates:** A status bar at the bottom shows the coordinates $-0.47, 34.71$ and the projection $EPSG:4326$.
- URL:** The address bar shows https://geoportal-asoc.scolab.es/geoportal/?app_id=4#

ATTRIBUTE	VALUE
plot_no	10
plot_rad	13
date	2013-10-24
photo_path	null
soil_eros	L
fell_cutt	Recent
grazing	M
crown_cov	Moderate
for_area	Natural forest
no_treespp	8
spp1_name	Anjago
spp1_freq	7
spp1_heig	2.7

THE WEB GIS: functionalities

The screenshot displays a web GIS application interface. On the left, the **gvSIG association** logo is visible. Below it, the **TOC Legend** and **Layers** panels are shown. The **Layers** panel lists several map layers, with **Gebiley Cadastre** checked. The main map area shows a satellite view of a residential area with red and green overlays. The **Overview map** at the bottom left shows the location of the main map. The **Scale** bar at the bottom right indicates a scale of 1:2103.57. The URL <http://www.gvsig.com/festival> is visible at the bottom of the page.

gvSIG association

TOC Legend

Layers

- Ninguna
- Bing satelite con etiquetas
- Satelite Bing
- Callejero Bing
- Google Hybrid
- Google Streets
- Google Physical
- Google Satellite
- MapQuest

Layers

- totu18_1
- Gebiley_Girls_to_School
- Gebiley_Boys_to_School
- Gebiley_imp_Sanitary
- Gebiley_Main_Electricity
- Gebiley_build_Type
- Gebiley Cadastre

Overview map

9.70, 43.63 | EPSG:4326

Escala 1 : 2103.57

0 0.05 0.10

<http://www.gvsig.com/festival>