

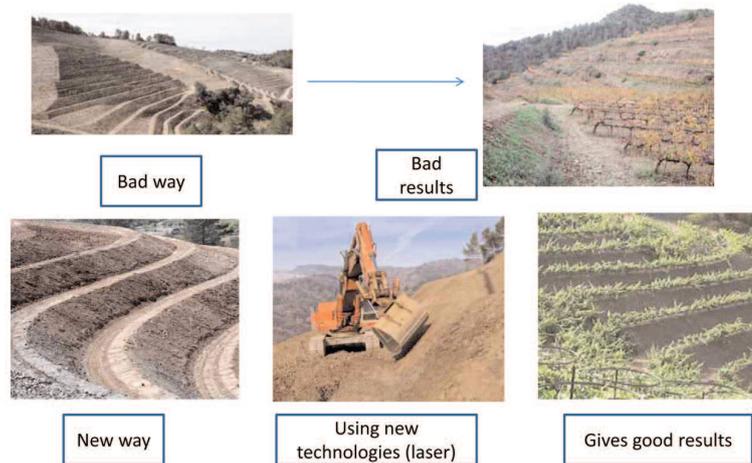
# MedClean Propre Limpio


**No.102**
**Modification of the process**

## Creation of a sustainable slope - mountain viticulture management

<b>Company</b>	Mas Martinet assessoraments
<b>Industrial sector</b>	Agrofood (wine producer)
<b>Environmental considerations</b>	<p>In some places the wine crop in high slope is the unique possible way to cultivate. We have many examples around the Mediterranean area. This growing has some environmental problems as:</p> <ul style="list-style-type: none"> <li>- Landscape impact: The steel natural gradient of the land, together with gentle artificial slopes and notable terrace widths lead to very high, long slopes that tend to disrupt the harmony of the landscape. A “quarry” effect is caused, especially when flat land cultivation is sought to be reproduced in the mountains.</li> <li>- Soil erosion: Erosion may be intense due to the excessive length of slopes, thus increasing runoff, and especially due to a lack of a well designed terrace drainage system.</li> <li>- Slope instability: When a loader is used for earthworks, the terraces are formed using the conventional technique of cutting the top part of the mountain and filling the bottom part. This creates a fragile surface between the solid ground of the mountain and the soil on top, making landslides more likely.</li> </ul>
<b>Background</b>	<p>Despite the adverse orographic conditions for vine growing and the high production costs this represents, it is important to ensure mountain viticulture remains environmentally and financially feasible in order to:</p> <ul style="list-style-type: none"> <li>· Uphold an activity in the rural mountain environment and avoid population drift.</li> <li>· Preserve unique landscapes formed over centuries of balanced work by mankind.</li> <li>· Promote the mosaic use of land as one of the most appropriate measures of preventing forest fires, especially in Mediterranean areas. The vine has been proven to be a good fire break.</li> <li>· Conserve the variety of autochthonous grape especially adapted to the land and the climate of each area.</li> <li>· Use the strong character of mountain regions to produce unique, top quality wines.</li> </ul> <p>These historic, socio economic and landscape based values offer a relevant contribution towards the cultural and biological diversity of the planet and are an undeniable tourist attraction, the exploitation of which may have significant weight in the local economy.</p>
<b>Summary of actions</b>	<p><b>Vineyard terracing</b>, applying sustainable terracing techniques blending of terraces into the countryside and working toward a prevention of erosion and controlled run-off of rainwater.</p> <p><b>Vine vigour control</b>, working with the plant architecture, a precise irrigation a plantation framework, stock clearing and managing the environmental external factors.</p> <p>In resume <b>Comprehensive sustainable mountain viticulture management</b>.</p>

## Diagram of the installation



## Balances

Investment (15Ha)		Old process	New process
Terracing (including tree and shrub clearing, removal of rots and stone crushing)	30,000 euros/ha	450,000	450,000
Stock	1euro/stock	91,000	97,500
Vine training	5 euros/stock	455,000	487,500
Machinery	Tractor, trailer, pesticides	40,000	30,000
Boxes and other tools		30,000	30,000
Irrigation pond		50,000	54,000
Irrigation installation (including hut, fertiliser storage tanks, pumps, programmer, etc.)	12,000 euros/ha	180,000	180,000
Weather station + blight forecasting contract		6,000	6,000
Soil moisture sensors + dendrometer + data recording and transmission (datalogger)	2 measuring points x plot	24,000	24,000
<b>Total investment</b>		<b>1,284,000</b>	<b>1,337,000</b>
<b>Operating costs</b>			
Staff		90,000	90,000
Phytosanitary products		17,500	9,000
Machinery maintenance		1,500	1,500
Disease forecast and equipment maintenance		0	3,000
Various (insurance, consumables, etc.)		4,000	5,000
<b>Total costs</b>		<b>113,000</b>	<b>108,500</b>

## Payback period

The new process means more investment and a few less operating costs. The payback period has two faces:

- The initial 3 years when the stocks are no (or less quality) productive.
- The fourth and beyond years when the increase in wine stocks, as result of the new process, increase the wine production and in addition the income from the wine selling.

## Conclusions

Benefits/techniques		Optimised terrace design	Vigour control and precise fertiirrigation	Plant cover on terraces and slopes	Disease forecasting model
Landscape preservation	Blending in of terraces. Use of mosaic terroir without vine monopolisation	X	X		
Preservation of soil and its fertility	Prevention of erosion, compacting and loss of organic matter	X		X	
Prevention of pollution	Minimisation of run-off and polluting leaching (nutrients, toxics)		X	X	X
Greater resource productivity	More and better (grape) production with less materials (soil, water, fertilisers, pesticides)		X		X

Information from the "Manual of Techniques for Sustainable Mountain Viticulture"