



ALOIS LAGEDER

VITICULTURE IN THE SOLAR AGE

The world-wide phenomena of climate change are also felt by viticulture. Many grape growers already perceive its repercussions in their very own vineyards: there's a higher incidence of diseases and parasites, and harvests every year come earlier.

The Alois Lageder winery was able to celebrate the Jubilee year of its one hundred and fiftieth anniversary in 2005, and also saw it as a meaningful occasion on which to turn attention to future generations, and to raise a number of questions. What are the future conditions in which grapes will have to be grown if global warming continues to accelerate? What influence will the depletion of fossil fuel reserves hold for our economic cycles? Alois Lageder is convinced that the future of the growing of grapes in the solar age is a something with which we should all be concerned, no matter if as vintners, merchants, or private lovers of fine wines.

In collaboration with the Alto Adige Ecological Institute, the Alois Lageder wineries held the first Magrè Wine Symposium on October 28, 2005. Climate researchers, wine experts, and representatives of Alto Adige's political institutions were invited to exchange their views on the future of grape growing in "the solar age." The goal was simply to promote discussion of this current and pressing theme, and thereby to seek out answers to the questions now being raised by wine producers all around the world: How can climate change be stopped or influenced? How can grape growers most sensibly deal with changing conditions? How must climate change effect the choice of grape varieties and where to plant them?

The invited experts—Hartmut Graßl, the Director of Hamburg's Max-Plank Institute for Meteorology, Manfred Stock of Potsdam's Institute for Climate Research, and the wine journalist Mario Scheuermann—unanimously agreed that climate change has been progressing more rapidly since the middle of the 1990s.



TÒR LÖWENGANG · CASÒN HIRSCHPRUNN



ALOIS LAGEDER

Hartmut Graßl, a highly respected meteorologist, sees solar energy, rainfall, and the photosynthesis of plants to be the three primary parameters in control of human life. Climate, therefore, is the most essential of all the natural resources, and the *sine qua non* of the continuing existence of human life on the planet earth.

Climate as a Major Natural Resource	
<p>What does human life depend on?</p> <ul style="list-style-type: none"> • Energy from the sun • Water from the skies • The photosynthesis of plants 	<p>What are the most important climate parameters?</p> <ul style="list-style-type: none"> • Density of the flow of solar energy • Precipitation and cloud cover • Vegetation: surface characteristics and the emission of trace gases
<p>Consequences</p> <ul style="list-style-type: none"> • Climate is the most important natural resource • International politics must take an interest in the climate 	

Graßl also spoke of “the human being as climate maker,” and saw the human contribution to climate change as central. As the twentieth century progressed, human intervention in nature grew ever more radical. He therefore insisted on the need for the reduction of green-house emissions, especially water vapor, carbon dioxide and ozone. According to a new report of the Intergovernmental Panel on Climate Change (IPCC), the level of the oceans is no longer increasing at what till now has been the generally estimated rate of 1.5 millimeters per year, but at double that amount: 3 millimeters per year. The earth, meanwhile, has reached conditions for which there are no precedents in geological history: massive warming in the interior of the continents—first of all in the Arctic Sea—increased precipitation in the deepest tropics, and enormous amounts of water evaporation, as a result of so much warming, to mention only a few of numerous effects.

As a “guide-line for climate policy,” Graßl insists on a maximum median global warming of two degrees centigrade in the course of the twenty-first century, “since otherwise we’ll step beyond the bounds of anything that *homo sapiens* has ever experienced before.”

For “the second solar age,” he encourages vintners to react to global warming by concentrating on the use of renewable energy sources, and primarily on the direct exploitation of solar energy. Grape growers will find it important to pursue a policy of constant and foresightful adaptation to changing climate conditions, as a question not only of long-term consideration for the generations of the future, but also of sound economic policy and profit-oriented thinking. Graßl makes things crystal clear: “Only those vintners who are ready to experiment will stand among the winners.” In other words, it’s already high time for vintners to face up to the alterations and challenges that climate change is bringing into our vineyards: time to explore the use of varieties of grapes which till now have not been typical of our regions, and time for new creations, in the sense of accepting the challenge of new producing new cuvées.

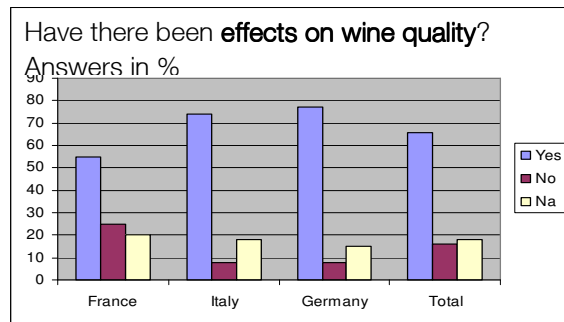
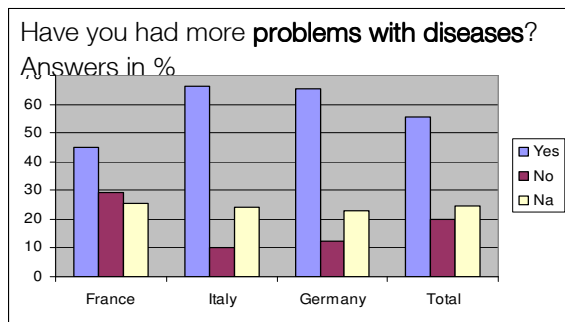
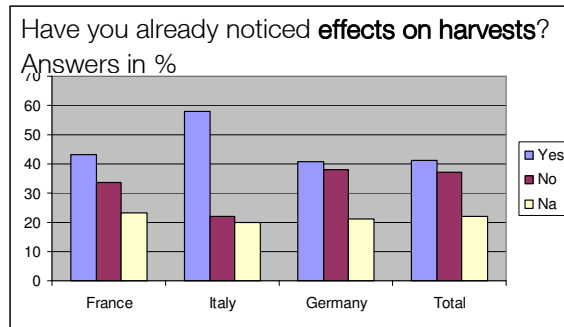
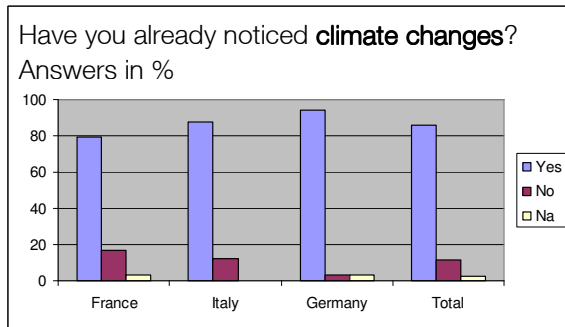
Manfred Stock of the Potsdam Institute for Climate Research is likewise convinced that climate change has long since grown noticeable in viticulture. His institution has conducted a survey among two hundred

TÖR LÖWENGANG · CASÒN HIRSCHPRUNN

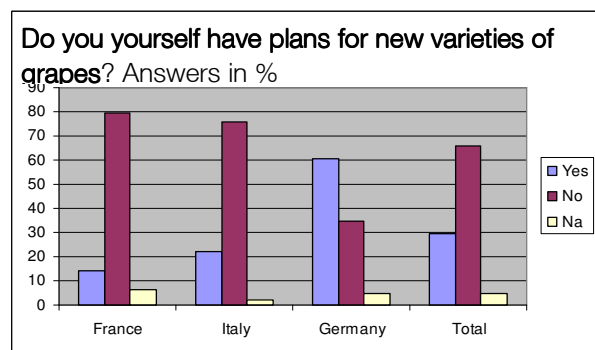
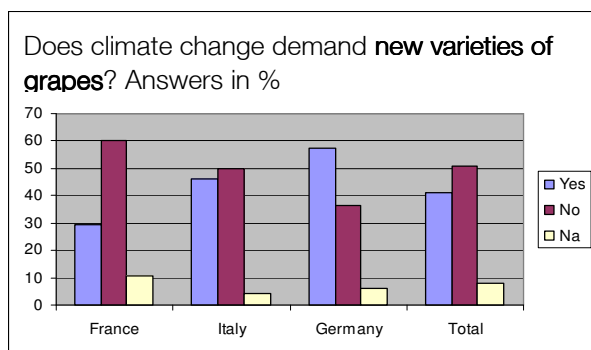


ALOIS LAGEDER

and fifty-five vintners in France, Germany and Italy, and reports that more than eighty percent of the grape growers questioned have already noticed shifts in the quality and quantity of their harvests, and that many complain as well that their vineyards suffer more greatly from diseases and parasites.



Dates for the budding, the flowering, the beginning of the maturation and finally for the harvesting of grapes have already grown notably earlier in any number of regions. The statistical model of the STAR scenario developed by the Potsdam Institute points up the radical shifts in attitude that these developments will force in the course of this century on vintners and wine aficionados. The STAR model makes it possible to extrapolate from the global data on climate change and to derive its effects on the various individual wine growing regions. Global scenarios on increases in temperature and carbon dioxide levels are flanked by the relevant meteorological particulars—temperature, precipitation, atmospheric humidity, length of sunshine, cloud cover, and wind speeds—from individual areas. This makes it possible to formulate prognoses to as far as 2050. So, for example, a global warming of two degrees centigrade would mean that the region of Champagne would have to deal with conditions that at present are typical of Bordelais. Vintners in the south of France would have to come to terms with conditions that resemble those of present-day Greece. In Alto Adige, general conditions for red wine grapes could be predicted to improve, whereas the growing of grapes for white wines would have to be shifted to higher altitudes.



TÖR LÖWENGANG · CASÒN HIRSCHPRUNN



ALOIS LAGEDER

Some of the participants' views on the possible opportunities and risks of climate change for viticulture are synthesized in the following table:

Opportunities	Risks	Measures of adaptation
More possibilities in grape varieties	Shifts in the characteristics of individual grape varieties	Analysis of the developmental potential of specific micro-climates The development of cuvées
Earlier periods of grape growth More rapid grape growth	More rapid development of parasites	More resistant varieties (as well, perhaps, by way of genetic engineering)
More sunshine, more rapid maturation	Also more sunburn	Shifts in planting areas, changes in cultivation techniques, sunshades
Increased quality of selected vintage years	Reduced quality in other vintage years, greater variability	Insurance systems, derivatives, the development of cuvées
Additional wine-growing regions and planting areas	Increased competition	Aggressive marketing, the encouragement of wine tourism
More abundant harvests	Lower profit rates	Sustainable quality management

Here are some of the most important points that Manfred Stock addressed: new grape growing areas will likewise mean additional competition; larger harvests may not always prove conducive to greater profit; it will be necessary to turn to grape varieties that are adapted to altered climate conditions; earlier and heftier periods of growth will also exert an influence on the life cycles of parasites.

Manfred Stock also quoted the famous quip by Mark Twain, "Everybody talks about the weather, but nobody does anything about it," and expressed the hope that the same will not prove true of the climate.

Mario Scheuermann, the wine journalist from Hamburg, sees that many vintners in central Europe will have to face the essential question of the kinds of grapes and wines they want to produce: red or white.

Grape cultivation, like the climate itself, is a sluggish system. So Scheuermann encourages a prompt increase in the number of experimental cultivations, in hopes of discovering grape varieties that might be more suitable in changing conditions for the various individual grape-growing regions. More attention should also be paid to the genetic stock of the older varieties of central European grapes, instead of continuing to limit their areas of cultivation, and even in certain cases of completely wiping them out. They might prove in the future to constitute a kind of life insurance policy for European viticulture. Attempts to rediscover and promote cuvées (mixed or cut wines) which have fallen out of fashion or long since been forgotten likewise grow significant.

The so-called "variety wines" (from a single variety of grape) will discover suitable use as the basic wines for mass consumption. Top quality wines, on the other hand, will no longer be able to insist on "terroir" as a principle of orientation, since any such policy's primary condition of a given, continuous climate will have

TÖR LÖWENGANG · CASÓN HIRSCHPRUNN



ALOIS LAGEDER

ceased to be the case. Scheuermann foresees the affirmation of essentially two kinds of wine: mass-produced wines on the one hand, and artisanal premium wines. It's already time today for every vintner to consider the position his enterprise intends to assume in the future.

The panel of experts unanimously agreed that the rate of climate change has increased in the last few years. The prognoses of the 1990s have already been surpassed by reality. Manfred Stock drew attention to the record-breaking temperatures of the summer of 2003. He feels that such summer temperatures may soon be the norm.

There seem to be two major tendencies: a shift towards the north for European viticulture, to as far as northern Germany, central England, and Scandinavia; and significant alterations in the climate of the traditional grape-growing regions.

The round-table discussion also saw the participation of leaders in the political life of Alto Adige: Hans Berger, Provincial Assessor for Agriculture, and Michl Laimer, Provincial Assessor for zoning, the environment, nature and the landscape, water and energy. They too agreed that mankind's future depends on questions of climate change. All participants further agreed that politics cannot control the climate, but that nonetheless it possesses the instruments with which to prevent the realization of the worst-case scenarios of climate change. In the last several years, Alto Adige has done a great deal to encourage innovative procedures and sustainable operations. The positive results of such efforts make it possible for further and even more vigorous steps to be taken in the same directions. Alto Adige's vintners are convinced that they can continue to enjoy success on the world wine market as producers of specialty wines. They are fully aware of their responsibilities and are actively seeking concrete and efficient ways through which to adapt to changing conditions, and to continue the production of quality wines in spite of shifts in climate. Martin Aurich of the Unterortl winery in Staben, for example, was one of several who expressed this view.

Luis Raifer of the Schreckbichl Co-operative and Alois Lageder, himself a vintner as well as the host of the Magrè Symposium, likewise expressed the conviction that the favorable position of Alto Adige will allow the region's vegetation to adapt in effective ways to changes in climate and environmental conditions. The need was seen for Alto Adige's vineyards to move into higher elevations. Alois Lageder raised the question of the advisability of returning to traditional, shady, arbor-style vineyards. He is also convinced that closer contact with nature, sustainable methods, and even perhaps a thorough-going use of biodynamic methods of agriculture might make an important contribution to increasing the resistance of the region's grapes, and to increasing the depth of their rooting in the ground.

The lively round of discussion between the members of the panel and the numerous vintners present defined a number of concrete strategies for dealing in the vineyard with the consequences of global warming.

- **Reconsideration of the grape varieties which each individual producer grows:** classical white-wine exposures might prove in the future to be more suitable to the cultivation of red varieties. Growers should react while they still have the time to do so, and begin today to experiment with new varieties of grapes. Alto Adige's grape growers may find it opportune to effect a major shift of the growing of white-wine grapes to higher elevations.
- **New marketing strategies:** vintners in regions which till now have depended on single-variety wines would do well to think things through again. Shifts in climate conditions will also cause a change in the character of particular grape varieties, such as Rhine Riesling, for example. The marketing of wines from regions that depend on a single variety of grape—such as pinot noir in

TÖR LÖWENGANG · CASÒN HIRSCHPRUNN



ALOIS LAGEDER

Burgundy—might grow problematic.

- **Cuvées as an alternative:** cuvée wines can react to climate change much more effectively than a focus on single-variety wines might manage to do. The composition of cuvées can be altered, and their taste can more easily be steered.
- **Specialization for small-scale growing areas:** the experts encourage small-scale growing areas such as Alto Adige to turn to a thorough-going specialization in artisanal productions of the highest quality, and also to authentic, regional grape varieties, such as Gewürztraminer or Lagrein.
- **Regional engagement:** Alto Adige's vintners and political authorities are planning to create their own climate models, as well as a long-distance system for the observation of the region's vineyards, also with a view to collecting data on levels of maturation or the spread of parasites.

It was finally clear to all the Symposium's guests that farmers and especially vintners will be among the first to be affected by climate change, and will directly feel its consequences. New directions of thought and action are indispensable. Anyone who now decides to plant a new vineyard must first of all have a concept that foresees contingencies for as much as the next half century.

Alto Adige could make itself a precursor for the whole of Europe. Political authorities and vintners' associations are already planning the creation of their own climate models, as well as a satellite system for the observation of the region's vineyards. Alois Lageder, who convened the Magrè Wine Symposium, is already now experimenting with new varieties of grapes as well as with new cuvées, and is also in the process of converting his vineyards to the exclusive practice of biodynamic agriculture. He remarks, "A meaningful reaction to climate change can't be seen to lie in still more technology, and must much more rely on a true sensibility to the laws of nature."

Sustainable procedures are the only possible watchword for the vineyards of the future. Solutions can be found by working in accord with nature, never by working against it.

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