

## Sustainability Initiative at Henschke Wines

We at Henschke Wines are deeply committed to produce ‘exceptional wines from outstanding vineyards’. Outstanding vineyards are the product of stewardship of natural resources including soil, water and biodiversity. To maintain our heritage and enhance sustainability of vineyards, we have committed ourselves to grow wine grapes using the principles of ‘ecological engineering’<sup>1</sup>.

Being a land based industry; we are intimately dependent on the services provided by healthy and functional ecosystems. These ecosystems supply essential services (known as nature’s services or ecosystem services); for example services related to grape growing are, biological control of pests, weeds and diseases, maintenance of soil health, prevention of soil erosion, capture of carbon by vegetation and soil, cultural services etc. These services which have been demonstrated to have very high economic value globally (US\$ 33 trillion per annum) are in a state of decline ([www.maweb.org](http://www.maweb.org)). Degradation of these services, biodiversity and natural resources pose a number of risks to our business operations. Our commitment to sustainable viticulture allows us to understand the connection between the health of the ecosystems and the business bottom line.

**To capture above described nature’s services and grow grapes sustainably to produce exceptional wines, we are working in partnership with the Sustainable Agriculture Flagship of CSIRO in the ‘[Vineyard Ecosystem Management](#)’ project. This project aims to quantify the economic value of ecosystem services and potential benefits of planting native vegetation in and around vineyards.**

**This project is also investigating the role of native plants in providing ecosystem services such as weed suppression, maintenance of soil health, carbon sequestration, or biological control of pests/diseases within highly modified ecosystems such as our vineyards.**

We have worked on various aspects of sustainable grape growing practices and used Ecosystem Based Business Risks Analysis Tool ([EBBRAT](#)) model developed in this project to identify risks that we pose to ecosystems and also look at the unique opportunities to develop a business model that can assist us to mitigate these risks and produce wine sustainably in future.

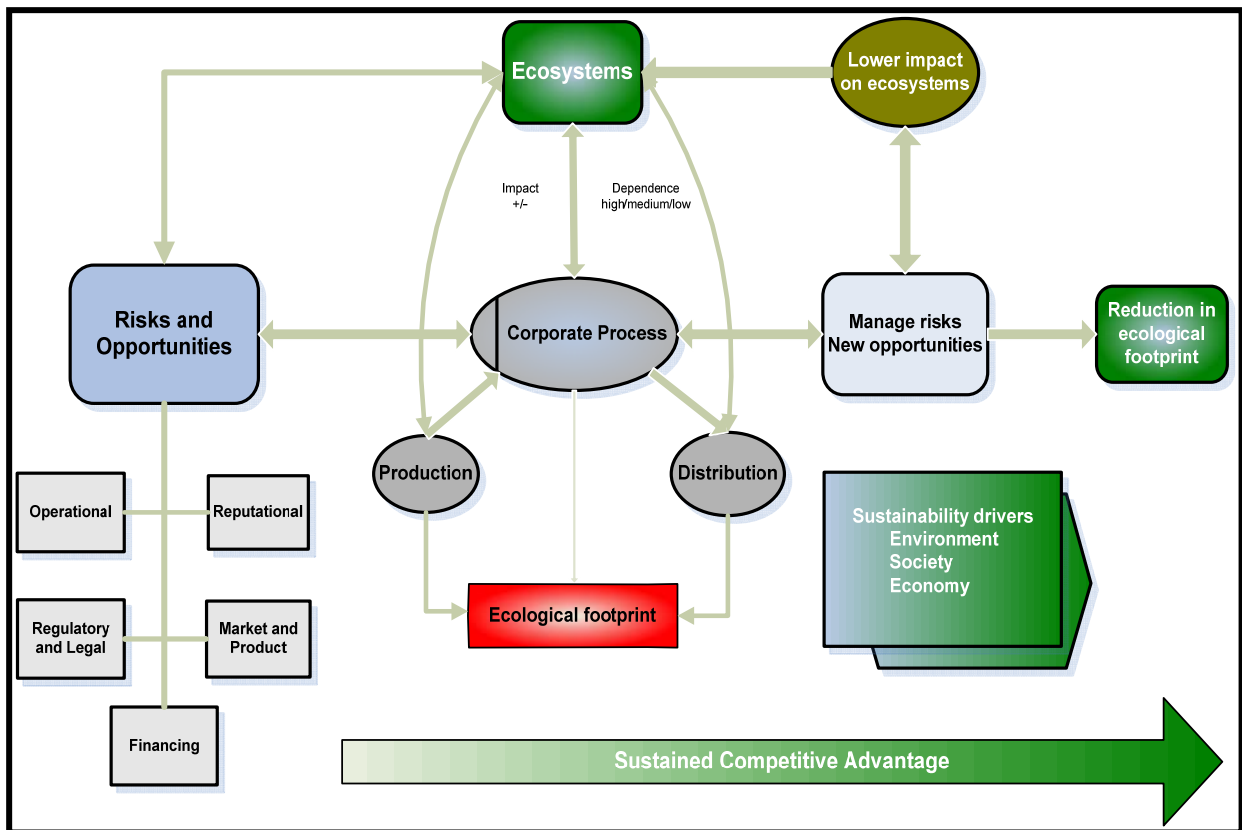
Our approach to minimise environmental impact and ecosystem based risks include the following measures (see Table 1) which are being adopted at Henschke Wines. We are utilising [ecosystem services strategies](#) to manage our vineyard operations and to reduce ecological footprints of both grape growing and winemaking (see Figure 1). Our sustainable business model incorporates [ecosystem services approach](#) advocated by the World Resources Institute, Washington DC, USA.

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<sup>1</sup> Ecological engineering uses technologies based on sound ecological principles such as using flowering plants to enhance biological control of pests and diseases, below vine management to reduce disease, increasing soil microbial activities, soil protection by cover crops (Gurr, G.M., Wratten, S.D. and Altieri, M.A. (eds). 2004. *Ecological Engineering: Advances in Habitat Manipulation for Arthropods*. CSIRO Publishing, Melbourne (Australasian publisher)/ CABI International, Wallingford (European Publisher)/ Cornell University Press, Ithaca ( Americas publisher). 244 pp. ISBN 0643090223).

Table 1 Ecosystem based risks identified by using EBBRAT and measures adopted at Henschke Wines.

<b><i>Ecosystem based risks</i></b>	<b><i>Intensity</i></b>	<b><i>Measures</i></b>
<b><i>Freshwater availability</i></b>	<b>High</b>	<ul style="list-style-type: none"> <li>• Rainwater harvesting dam extended to sufficient capacity to cater our need.</li> </ul>
<b><i>Global climate regulation</i></b>	<b>Medium</b>	<ul style="list-style-type: none"> <li>• Planning for adoption to climate variability.</li> <li>• Started operation in high rainfall zone.</li> </ul>
<b><i>Greenhouse gas emissions</i></b>	<b>Medium</b>	<ul style="list-style-type: none"> <li>• <a href="#"><u>Capturing carbon through tree (biodiversity) plantings.</u></a></li> </ul>
<b><i>Energy</i></b>	<b>Medium</b>	<ul style="list-style-type: none"> <li>• Planning to include 'green' energy sources for wine making.</li> </ul>
<b><i>Chemical pollution (Pesticides, herbicides)</i></b>	<b>Low to medium</b>	<ul style="list-style-type: none"> <li>• Adoption of organic/bio-dynamic practices for pests and disease control.</li> <li>• Integrated pest management.</li> <li>• <a href="#"><u>Ecosystem services strategies</u></a> adopted in '<a href="#"><u>The vineyard ecosystem management</u></a>' project.</li> </ul>
<b><i>Soil erosion</i></b>	<b>Low to medium</b>	<ul style="list-style-type: none"> <li>• <a href="#"><u>Inter-rows vegetative cover throughout the year by native plants (Danthonia sps and Saltbush).</u></a></li> </ul>
<b><i>Soil health</i></b>	<b>Low to medium</b>	<ul style="list-style-type: none"> <li>• <a href="#"><u>Under-vine floor management using organic compost and mulches.</u></a></li> </ul>
<b><i>Employment</i></b>	<b>Low</b>	<ul style="list-style-type: none"> <li>• Employing locals for casual and permanent positions.</li> </ul>



**Figure 1 Conceptual model to identify ecosystem based risks, and opportunities to lower ecological footprints at Henschke Wines<sup>2</sup>.**

<sup>2</sup> Sandhu, H.S., Nidumolu, U., Sandhu, S.K. 2009. Modelling risks and opportunities arising from ecosystem change in food and fibre value chains. Proceedings of the 10<sup>th</sup> International Ecology Congress, Brisbane 16-21 August.

## Research outputs from current project

1. Sandhu, H., Nidumolu, U. 2009. Identifying ecosystem based risks and opportunities: case of Henschke wines. CSIRO report.
2. Sandhu, H.S., Nidumolu, U., Sandhu, S.K. 2009. Modelling risks and opportunities arising from ecosystem change in food and fibre value chains. Proceedings of the 10<sup>th</sup> International Ecology Congress, Brisbane 16-21 August.
3. Sandhu, H. 2009. Enhancing the competitive advantage of the wine industry through ecosystem services strategies. The Australian & New Zealand Grapegrower and Winemaker 540, 26-29 (January).
4. Sandhu, H., Ouzman, J. 2009. Influence of under-vine floor management on soil biological Activity. Proceedings of the 10<sup>th</sup> INTECOL, Brisbane 16-21 Aug 2009.
5. Sandhu, H., Ouzman, J., Henschke, P. 2008. Designing vineyards to deliver ecosystem services. Proceedings of the 33rd Ecological Society of Australia Conference, Sydney.

## Further readings

1. Sandhu, H.S., Wratten, S.D., Cullen, R., Case, B. (2008) The future of farming: the value of ecosystem services in conventional and organic arable land. An experimental approach. The future of farming and the role of ecosystem services. *Ecological Economics* 64, 835-848.
2. Sandhu, H.S., Wratten, S.D., Cullen, R. (2007). From poachers to gamekeepers: perceptions of farmers towards ecosystem services. *International Journal of Agricultural Sustainability* 5, 39-50.
3. Frank, S.D., Wratten, S.D., Sandhu, H.S., Shrewsbury, P.M. (2007). The influence of habitat strata on predation of *Epiphyas postvittana* (Lepidoptera: Tortricidae) and the predator assemblages of a vineyard. *Biological control* 41, 230-236.