

May 2016

Newsletter

SAVE THE DATE

Stakeholder workshop in partnership with SBN and SBC – 14th of September 2016 – Wellington

Keynote speaker: Jason Clay, Senior Vice President, Food and Markets for WWF



OUR PROJECT

The New Zealand Sustainability Dashboard (NZSD) project's main aim is to build practical tools for sustainability assessment, auditing, reporting and learning. For more information on the project, please check the NZSD project website (www.nzdashboard.org.nz).

UPCOMING WORKSHOP SPEAKER – JASON CLAY

With the strong support of Morgan Williams, Chair of the WWF-NZ Board and leader of our Advisory Board, it is our pleasure to announce the visit of **Jason Clay, Senior Vice President, Food and Markets for the World Wildlife Fund (WWF)** to New Zealand in September 2016. He will be the keynote speaker of our annual stakeholder workshop (14th September 2016, Wellington), which will be organised in partnership with [Sustainable Business Network](#) and [Sustainable Business Council](#). Other events will be organised by SBN, SBN, AQNZ, etc. to give the opportunity to a large number of people to meet Jason.

Jason ran a family farm, taught at Harvard and Yale, worked at the U.S. Department of Agriculture and spent more than 25 years working with human rights and environmental organisations before joining WWF in 1999. Jason gets things done on a global scale. His ideas are changing the way governments, foundations, researchers, and NGOs identify and address risks and opportunities for their work. He brings people together to improve environmentally sensitive practices in agriculture and aquaculture. For more information on Jason, check [WWF website](#) or his [TED Talk](#).

“Our goal is to figure out how to produce more with less land, less water and less pollution, so we won't be the only species left living on this planet.” - Jason Clay, WWF

MBIE CONTRACT UPDATE

The annual reporting was delivered in early September 2015 and the project has received a **Green status**. We have completed 22 of the original milestones, are 'on track' for all of our remaining 21 milestones as we near the 3.5 year stage of our 6 year project.

MAIN INDUSTRY UPDATE

Wine –NZSD is working with Sustainable Winegrowing NZ (SWNZ) on delivering their new strategic plan by providing advice on global best practice in sustainability. We conducted a review of best international practice for setting targets, critical thresholds and benchmarks for sustainability to make sure that the proposed SWNZ plan incentivises continuous improvement for price premiums beyond just achieving the minimum standards that guarantee market access. As the wine sector looks at ways of increasing member engagement and interaction with the dashboard we have for the first time delivered monthly in-season agrichemical reports. Historically spray diaries are submitted towards the end of the season when wineries demand to see them. Therefore any potential insights can only be applied in the following season. By providing timelier reporting, there is now the opportunity for members to make immediate adjustments to

vineyard and winery efficiency. Developing a culture of frequently visiting of the dashboard and associated tools, like the electronic spray diary, will help overcome unfamiliarity issues when someone only interacts annually (often under tight time constraints), and encourages use of the dashboard as a management tool rather than just a compliance requirement. In-season reporting has helped propel in-season data submission to its highest level, at 45% by the end of January, compared with just 13% in 2012/13 and 34% last season. By the end of February 55% of members had submitted their partial spray diaries.

Kiwifruit – We recently completed an in-depth analysis of sustainability risks and opportunities at global, national and sector levels for the kiwifruit industry. The end-to-end analysis showed that some issues are relatively low priority or relevance for the NZ kiwifruit sector, but are highly important globally (for example biodiversity loss and climate change). A survey of growers, packhouse managers and Zespri sustainability strategists considered the relative likelihood and size of impact of 16 potential threats. This process identified the top five issues to be Biosecurity failure, Food safety failure, Lack of skilled labour, Water restrictions and Poor use of agrichemicals. A Choice Modelling (preference survey) exercise indicated that the views of Zespri strategists, customers & consumers, and growers should have a greater weighting in the development of a sustainability strategy than postharvest operators, regulators and public, or sustainability researchers and consultants. It also indicated that future sustainability targets need to be relevant and important for the kiwifruit industry, as well as aspirational rather than just being minimum standards. Next the dashboard project will help industry identify metrics and targets for each high priority issue.

Ngāi Tahu / Māori – Te Rūnanga o Ngāi Tahu has initiated a sustainability reporting initiative across its entire Te Runanga Group. The NZSD project, and more specifically the Ngāi Tahu Research Centre team, is now helping this initiative to develop reporting systems across Ngāi Tahu Holdings subsidiaries and the tribal organisation's development arm. John Reid serves on the initiative's advisory board. A focus for the team is to inform the development of sustainability reporting systems specific to farming and fishing operations. This process will involve adapting the processes and structures from *COASST (Collectively Owned Asset Sector Sustainability Assessment Tool)* developed over the past two-years in collaboration with various Māori leaders, tribal authorities, land incorporations, and trusts. The refinement and development of the COASST allows the tool to fit with the NZSD framework, and to report in NZSD and Quadruple bottom-line formats. A gap analysis identified areas where the COASST, NZSD, and SAFA, align and differ. We found that the Māori organisations are more heavily focussed on the importance of leadership, learning processes, partnerships, and stakeholder networks as key components of sustainable development than are the NZSDP, or SAFA.

Forestry – Courteney Sealey (PhD student) has received good participation rates from senior Māori leaders in the forestry sector to her survey exploring overarching goals of their forestry management. Her research suggests that there is confluence between the economic, social, and environmental objectives of Māori forest asset holders and the objectives that the Forest Stewardship Council (FSC) and Montreal Process assessment frameworks report against. She will now reflect back her results to the Māori leaders and undertake focus group discussions to identify areas of difference in emphasis, if any, between the iwi aspirations and those in international forestry sustainability frameworks. This is another example of the way NZSD is seeking to fine-tune sustainability assessment to be most relevant, practical and useful for local stakeholders and New Zealand conditions, while still matching and meeting international market requirements.

Organic – After a successful first year focusing on scoping studies, establishing partnerships with the organic industries and confirming the organic wine case study, the NZSD team has started a series of workshops to collect feedback from farmers and growers about their own definition of sustainability, expectations and hopes for the project as a whole to maintain their point of difference in food and fibre production systems. The workshops will also prioritise those aspects of sustainability considered to be the most important for their businesses and start to shape what an organic dashboard could look like. A first workshop was held with wine growers in Otago in November and the second one for Marlborough will be held in June.

Farm Environmental Plans (FEPs), to meet Environment Canterbury (ECAN) requirements for farmers. NZSD team has mocked-up an online FEP template based on the Kiwifruit Dashboards which was developed by Lincoln Agritech.

HortNZ: The NZSD team are collaborating to refine the NZGAP programme. Furthermore, Andrew Barber has just joined the NZGAP board.

Aquaculture New Zealand: on-going linkage has included Jon Manhire speaking at the AQNZ annual conference in September 2015, and now co-hosting Jason Clay for his upcoming visit in New Zealand.



RESEARCH TEAM MEMBERS

Jay Whitehead, based at the AERU at Lincoln University just presented his PhD proposal “Sharing the burden of Sustainability”, with supervisors Prof Caroline Saunders and Prof Paul Dalziel.

Kevin Collins, who attended our 2015 stakeholder workshop, has joined the team to do a study on potential linkages with Regional Councils. Kevin is a private consultant who worked for Waikato Regional Council and chaired the Regional Council Biodiversity Working Group until Dec 2014. He now chairs the EMaR (Environmental Monitoring and Reporting) group and is in charge of scoping future EMaR development. He is specialised in advocacy, strategic analysis and project facilitation. He has a strong public policy and communications background, with particular interest in connecting people with the environment.

Dr Marion Sautier, who joined the project as invited Post Doc Research Fellow, is leaving this month. She is going back to INRA, France, but still working on writing 3 papers with a focus on the wine sector sustainability assessment and reporting. Marion will also co-lead the upcoming NZSD workshop at the [International Farming Systems Association \(IFSA\) conference](#) (UK, July 2016) which attracted over 20 papers from around the world.

Dr Hugo Alrøe, independent Scholar from Denmark, is visiting us for 2 months – based at CSAFE (University of Otago). His area of expertise is philosophy of science and ethics, mainly in relation to interdisciplinary and participatory research in the field of food, agriculture and environment. He will lead a paper with our NZSD team that contrasts values-based with performance assessment-based approaches to trigger sustainability improvements. The paper will help us and our stakeholders and funders understand some of the limitations of the dashboard approach and guide investments in complementary activities to add value to our rigorous assessment approach.

RESEARCH UPDATE: WRITING RETREAT

The NZSD team organised a **writing retreat** in Dunedin (February 2016) with objectives to review and share all the main research ideas between the teams and organisations, and propose some cross-cutting themes and potential papers. A diverse and promising list of emerging papers and specific research subprojects were advanced, including:

- Dr Katherine Legun, leading a paper on multiple criteria and composite indicators that span different pillars of the NZSD framework
- Prof. Henrik Moller and Jay Whitehead and student team developing paper on ways that sustainability assessments set targets, benchmarks and critical indicator thresholds
- Dr Hugo Alroe developing a paper on the relative strengths and weaknesses of value-based and performance assessment-based approaches to triggering farming sustainability
- Dr Jayson Bengé on approaches to prioritising threats and opportunities for the kiwifruit sector
- Peter Green, applying Power Analysis of wine energy and water use; and kiwifruit soil carbon data
- Dr Andrew Gormley (LCR), developing an application of his PotCal (Point of Truth Calibration) method of combining expert knowledge across a range of measurement scales to derive composite sustainability measures (water and energy use in the wine sector).

“The New Zealand Sustainability Dashboard project is commendable for its long-term engagement, strong industry partnerships, and sensitivity to different cultures and values. It has, understandably, a strong focus on monitoring sustainability performance of exported products for overseas consumers. It also aims to underpin learning to make New Zealand agriculture more sustainable. However, recent research suggests that the goals of monitoring and learning in sustainability assessment are mutually conflicting, and that the project therefore faces a major challenge to handle this complementarity between its key goals.” Dr Hugo F. Alrøe

RESEARCH TEAM



Kevin Collins, establishing potential linkages with Regional Councils and other regulatory agencies



Au Revoir to Dr Sautier, our Post doctoral social research Fellow



Dr Alrøe, challenging us to move from sustainability assessment to sustainability transformation



REGIONAL COUNCILS AND ESTABLISHMENT OF A COMMUNITY OF PRACTICE

Over the last few months, Kevin Collins has been exploring how to initiate a ‘community of practice’ (COP) between the NZ Sustainability Dashboard research team (and possibly its industry partners) and regional councils and agencies in central government. The ultimate purpose is to enhance monitoring and reporting frameworks being developed by all of these parties.

Kevin surveyed regional councils and found a strong interest in the Dashboard, but limited knowledge of its current work. While 75% had not heard of the Dashboard project, 41% said data on the sustainability of primary industry would be “extremely useful” and 37% said “very useful.”

Similarly, 92% of respondents said they would share all or most of their own data with primary producers to help businesses improve the sustainability of their operations. However, even those who were enthusiastic about data sharing expressed some reservations. Cost was one: “...there is a big cost to us to extract data - we don't have a lot of capacity and don't need another list of requirements for data sharing from another government agency which we have to meet without any additional funding.” A second concern was noted around the difficulty of connecting data collected at very different scales: “Making links from regional datasets to farm or forest scales of attribution is not straightforward for either council or the land production sectors.” Approximately 66% of respondents believed voluntary sustainability reporting by primary industries would have no or only minor impact on the need for RMA regulations.

On the other hand, 23% felt voluntary reporting could “greatly reduce” the need for regulations, but expressed caution. One respondent stressed, “The reporting would need to result from consistently audited self-management regimes across primary sectors for RMA regulatory attenuation.” Very encouragingly, 77% said they were “very interested” in working with the NZSD “to improve its usefulness to regional councils.”

Obviously, we have a lot more work to do to get noticed out there amongst wider stakeholders, despite the strong accent on reporting and publishing noted below. However the results underscore our relevance and the wisdom of MBIE’s review and subsequent adjustment of our research contract to reach out more to two key communities of practice, covering regulatory and market drivers.

POWER ANALYSIS PACKAGE: UPDATE

Introduction This package (‘simr’) provides tools for assessing the power of different monitoring designs to detect trends or changes in monitoring data. It has been designed (by Peter Green and Catriona MacLeod at Landcare Research) to address some recurrent challenges in reporting:

- providing early warnings (e.g. overcoming difficulties with interpreting results or lack of confidence in results),
- learning for sustainability (e.g. power to detect the effect of a management intervention)
- fine-tuning monitoring (e.g. identifying cost-effective designs to meet their specific monitoring goals and needs, by evaluating trade-offs in monitoring designs)

Simr is an R package that is freely available online (via CRAN) for researchers and managers to download and use. It includes tools and tutorials for (a) running a power analysis given a model and design; and (b) calculating power curves to assess trade-offs between power and sample size.

Feedback and interest - The package has recently been publicised via online publications and conference presentations ([see here](#)), attracting great interest. It is already being applied in different areas, with over 1400 downloads (via RStudio alone)!

This package is awesome. The tutorial in the paper is really easy to follow, and it works with the models I have already created, BLISS! Thank you! Bridget Armstrong (Bridget a summer student at University of Canterbury (Maths Dept.) working in collaboration with Landcare Research).



RESEARCH UPDATE: PUBLICATIONS

The Organics paper from the OECD workshop in Long Beach (November 2015), already published in *Sustainable Agriculture Research*, is being republished as part of a new e-book under the associated 'Creative Commons' copyright agreement: Merfield, C et al. **Are organic standards sufficient to ensure sustainable agriculture? Lessons from New Zealand's ARGOS and Sustainability Dashboard projects.** Kim Etingoff (ed). *Sustainable Development of Organic Agriculture: Historical Perspectives*. New Jersey: Apple Academic Press. (In press, 2016).

Congratulations to Peter Green and Catriona MacLeod for the publication of their paper "**simr: an R Package for Power Analysis of Linear Mixed Models by Simulation**" in *Methods in Ecology and Evolution* (British Ecological Society Journal) is now available online. This paper presents a tutorial using a simple example of count data with mixed effects (with structure representative of environmental monitoring data) to guide the user along a gentle learning curve, adding only a few commands or options at a time.

The guest editorial to introduce and summarise the Multicriteria Assessment of Food systems has been published by *Ecology & Society*: Alroe, H. F., H. Moller, J. Laessoe and E. Noe. 2016. **Opportunities and challenges for multicriteria assessment of food system sustainability.** *Ecology and Society* 21 (1):38. [online]. The article features the sustainability dashboard as an innovative tool for cross-scale bridging to build the resilience of dispersed and varied layers and players that influence food and fibre supply chains. This draws to a close a Feature Issue of the journal that includes 11 papers from around the world on the dilemmas of assessing sustainability and triggering transformation. Prof. Henrik Moller and our visiting scholar, Dr Hugo Alroe were two of the four guest editors of the collection.

MAIN INTERNATIONAL CONFERENCES PARTICIPATION

1-4 November 2015, Barcelona, Spain. Global Cleaner Production and Sustainable Consumption Conference. Marion Sautier has presented the paper "Transformations of winegrowing systems beyond the audit: guideline-based sustainability programs and their radical potential" by **Marion Sautier, Katharine Legun and Hugh Campbell**. The conference was organised by the 'Journal of Cleaner Production'.

8-10 December 2015. Sydney, Australia. Eco-Stats '15: Technological advances between Ecology and Statistics. Peter Green was invited to run an international workshop for world leaders in statistics and ecology. Presenting a new statistical package (simr) developed for power analyses in the statistical software, R.

MAIN INTERNATIONAL CONFERENCES – TO COME

9-10 May 2016 - [The Worlds in a Wine Glass Conference](#) – London (UK). Marion Sautier has been accepted to present a paper at this conference.

12-15 July 2016 - [IFSA 2016 Symposium](#) - Harper Adams University (UK). NZSD team members are involved in two workshops at IFSA 2016 Symposium (International Farming Systems Association):

- **Workshop 2.2 - Sustainability assessment at farm level for catalysing practical change, co-led by Dr Marion Sautier (NZSD, INRA) and Dr Andreas Roesch (Agroscope).**
- **Workshop 2.4 - Temperate agriculture sustainability assessment beyond the individual farm level, co-led by Prof (Emeritus) Henrik Moller (NZSD) and Dr Jan Grenz (HALF).**

The following papers have been accepted from our own team:

- Choice modelling for selecting and building sustainability indicators in workshop 2.2 (Henrik Moller)
- Target Setting and Burden Sharing in Sustainability Assessment Beyond the Farm Level in workshop 2.4 (Jay Whitehead)
- Implementation of sustainability assessment and reporting in horticulture: a case study of New Zealand's wine and kiwifruit sectors in workshop 2.4 (Andrew Barber and Jayson Bengé)
- Transformations of conventional production systems beyond the audit: guideline-based sustainability programs and their radical potential in workshop 3.4 - Boundary spanning between agroecological and conventional production systems: implications for pathways towards more sustainable production (Marion Sautier)
- Sustainability auditing: a tool for governing wine production in New Zealand? In workshop 3.1 - Sustainability of food chains: contested assessments (Marion Sautier)



MAIN NATIONAL WORKSHOPS OR EVENTS PARTICIPATION, SUCCESS STORIES

28 September 2015 – Wellington. DNA National Challenge workshop. Henrik Moller provided a presentation on –“Biodiversity indicators for agricultural sustainability assessment: a needs analysis”.

15 October 2015- Cromwell. Beef + Lamb South Island Farmer Council. Henrik Moller presented “Looking after your ground: a sustainability dashboard for sheep & beef farming?”

16-19 November 2015 – Christchurch. NZES (New Zealand Ecological Society conference). Catriona MacLeod presented "Refining monitoring and reporting in production landscapes and beyond" introducing the power analysis package with an example from the kiwifruit sector. She also presented "Building trustworthy biodiversity indicators" for another project which has linkages with NZSD. The conference proceedings have been published and [abstracts are available here](#).

24-26 November 2015 – Christchurch. NZAS (NZ Statistical Association and Operations Research Society of NZ). Peter Green has presented the power analysis package (Power analysis for GLMMs by simulation) to a mixed audience of national and international professionals and academics involved in practical and theoretical statistics and operations research.

6-9 December 2015, Queenstown. Agrifood XXII Conference.

There was a strong presence of Dashboard researchers at the Agrifood XXII conference in Queenstown in December, 2015. The annual Agrifood conference is the largest gathering of social science researchers in Australasia interested in issues around agriculture, food, rural economy and sustainability. Dashboard researchers contributed to two different discussions at the conference. John Reid and Tremane Barr presented two papers on the relationship between **indigeneity, food and sustainability** and generated significant discussion about the innovative technologies and pathways being designed by the Dashboard project. A group of Dashboard researchers (Marion Sautier, Katharine Legun, Chris Rosin, Hugh Campbell) presented in sessions that discussed the **social dynamics of how alternative systems develop**. While the Agrifood group have heard many analyses by researchers in our various projects on the kiwifruit, apples, aquaculture, sheep, beef and dairy industries, what became clear at this conference was that the Dashboard is generating substantial new knowledge and developing a reputation for expertise in the social dynamics of New Zealand’s wine industry.

January-February 2016 – Balance Farm Environment Awards. Henrik acted as a judge for Ballance Farm Environment Awards (Otago & Southland). The Ballance Farm Environment Awards recognises and celebrates good farm practices which promotes sustainable land management through an annual awards programme which is now run in 10 regions throughout New Zealand. Farm visits occurred in January. Dashboard data was used by one of the applications to support their award.

16 March 2016 – Auckland. ForestWood 2016 Conference. This conference is jointly hosted by the NZ Forest Owners Association (FOA), Wood Processors and Manufacturers Association of NZ (WPMA), Forest Industry Contractors Association (FICA) and supported by Woodco and NZ Farm Forestry Association (NZFFA). Jon Manhire gave a presentation about the drivers for sustainability assessment and reporting and potential responses and including an update on the NZSD forestry case study.

OTHER INTERNATIONAL LINKAGE

FAO – SAFA update: FAO (Food and Agriculture of United Nations) - SAFA (Sustainability Assessment of Food and Agriculture systems). Last year, Nadia Scialabba from FAO, SAFA, was a keynote speaker at the NZSD stakeholder workshop. She has announced in December 2015 the release of new Sustainability Pathways (www.fao.org/nr/sustainability) products.



The Sustainable Consortium (SC)



The Sustainability Consortium is a global organisation dedicated to improving the sustainability of consumer products with a large number of members including retailers, manufacturers, NGO’s. It is a leader in the development of sustainability assessment metrics, with targets to identify hotspots by industry/sector. The SC Category Sustainability Profiles for wine 2015 – for instance– identifies 15 hotspots of key performance issues that it has identified in relation to wine production. The AgriBusiness Group, representing NZSD, is now a Tier 1 member of the [Sustainable Consortium \(SC\)](#). Jon Manhire, Programme leader of NZSD, has attended their **annual conference – 20-22 April 2016 (Washington DC, US)**.

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