

Summary of SFP purpose and position

The Smart Farming Group (SFG) are advocates for sustainable management of NZ farm land. The group are also involved in the debate around this subject and seek to develop a coherent, practical and shared approach to examining and reporting the economic, environmental and social performance of agriculture. There are a lot of systems and interests involved and it is expected this will take time and will not be easy given the range of interest involved. Given this context Smart Farming Group are looking to focus on the practical aspects rather than trying to resolve pan industry / NZ Inc type issues. The Smart Farming Programme (SFP) might concentrate on the following aspects and how those efforts might be divided.

- Promote sustainable land use via our website and popular press. Higher level discussion about the value of having defensible monitoring systems and the place of sustainably produced products on the world market (25%). Also by publishing and promoting new developments, techniques, and products in the Smart Farming sphere.
- Develop and trial simple, practical farmer level tools and process (indicators) that provide value in itself in giving farmer feedback and pathways to sustainable land management. This tool would be developed in a way that is compatible with the New Zealand Sustainability Dashboard (NZSD) and development of national initiative around wider national level performance measurement / marketing information. This role forms a significant part of the smart farming programme work (60%).
- Use information from trialling of smart farming, and other work across farms and industry to seeking out and out communicate stories (role model systems and farmers) about the value of smart farming approaches (e.g. profit not production, maintaining soils, variable rate irrigation etc etc). Demonstrate the value of the smart farming approach at an individual farmer level - and how this flows up to industry, and to export marketing. (15%)

Framework approach

The sections below begin to describe technically where the SFP might fit with NZ farming enterprises. As a lead in to this some aspects of development are not covered. These are covered as background here.

Transparency is required in monitoring the impacts and returns in the same currency. In this way alternative landuses such as dairy, beef,

sheep, horticulture, arable, viticulture, forestry and conservation can be compared objectively. Further, high risk and low risk situations (land and wider environment) can be assessed for appropriateness of landuse type. An example may be semi-continuous monitoring of dissolved oxygen and nitrate for a key waterway on a farm (or drain outlet) and/or long term return on investment/capital. An example of high risk dairy might be well drained light soils and deep? Groundwater. Low risk might be heavy soils, on-off grazing, high water table.

There is a major focus on water quality and nutrient losses in the community at present with community groups in the throes of setting local water quality limits, especially for N, P and bacteria as required / directed by the National Policy Statement (NPS) for Freshwater Management 2014. In tandem with this, nutrient losses from farms (including effluent) to freshwater bodies are estimated with Overseer® nutrient budgets. These losses are then “managed” under nutrient management plans. These budgets and plans are increasingly part of the requirements of supply agreements for NZGAP, milk and grape suppliers. In particular, Regional Councils in sensitive catchments such as Waituna, Taupo, upper Waikato, Hinds, Selwyn will require nutrient budgets and plans as part of a consent to farm. Therefore SFP need not necessarily require this. Perhaps just tick the box to “do you have a nutrient budget” and “do you have a nutrient management plan”.

Current (Technical) description of how / where SFP fits with other industry programmes.

Where does Smart Farming fit in relation to other Quality Assurance programmes?

All primary NZ food products are subject to some form of Quality Assurance (QA) before they are retailed¹. Without exception the principal focus of these QA systems is food safety, specifically invisible threats such as microbiological pathogens and chemical residues. Environmental sustainability may also feature in terms of chemical residues in soil, nutrient losses and soil losses. QA systems such as New Zealand Good Agricultural Practice or “NZGAP” and Fonterra Suppliers Handbook incorporate best practice such as Hazards Analysis and Critical Control Points (HCCAP), industry codes of practice such as Animal Code of Welfare: Dairy Cattle, standards such as BioGro and

¹ The exception to this are some products sold in farmers markets

legislation such as the Agricultural Compounds and Veterinary Medicines Amendment Act 2007. Aspects which are generally not covered include soil, water and air quality, biodiversity and Genetically Modified Organisms.

How will the Smart Farming programme make a difference?

Most farmers aim to operate sustainably and continually improve their practices and infrastructure so that they may leave their land and business in a better state than when they started farming. The principles of sustainable land management are not generally in dispute, but farmers need some effective tools so that customers can recognise this. The Smart Farming Group will develop tools for farmers to improve systems and will promote sustainable land use. The focus will be on land management as this is key to water quality outcomes.

The most practical way to demonstrate progress in sustainable land management is by using land based indicators. There may be 50 or more such indicators for a farm business. However, Smart Farming Group will initially work on tools to collect in-field information on pastoral farms for simple sustainability indicators like:

- Metres of riparian fence and / or size of retired area(s)
- number of new seedlings planted in retired areas
- growth of plants in retired areas (native or exotic)
- % soil organic matter, colour, structure, earthworms
- what flora and fauna are present in the waterway or wetlands?
- how many species of birds are present on the farm?
- how far can I see on a clear day?
- Are GMOs used on your farm?

How will the systems of the Smart Farming Group relate to our markets?

Information from the Smart Farming Group will be made available to other QA systems as required. As to just how that will work is changing in New Zealand. For example the NZ Sustainability Dashboard could provide a facility to centralise this sort of information for export markets and already does so for Sustainable Winegrowers and Kiwifruit growers (<http://www.nzdashboard.org.nz>).

High level sustainable land use discussions.

Commentary from a variety of sources and experts will be sought to create discussion on Sustainable Land Use in NZ. As we are an

independent group we can tackle issues not picked up by government or those with a commercial interest. Topics could include:

- NZ feeding the world
- Farm debt
- Volume vs profit
- International markets for NZ products
- Trends in consumer behaviour
- Etc

New technologies, products and techniques will be reported on and in some cases tested and reported on to create discussion.

The Smart Farming Group can disseminate this information through its current newsletter subscribers, website/blog and social media.