Agri-environmental Sustainability and Natural Capital Hub

A trusted provider of scientifically-validated tools and metrics to monitor sustainability and natural capital in agricultural systems.

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Overview

The Agri-environmental Sustainability and Natural Capital Hub (ASNCH) will deliver a nationally standardised framework and metric system to enable Australian producers to obtain recognition and certification of sustainable agricultural practices.

Farmers with good intentions supply public good environmental outcomes from the farm as sustainably produced food and fibre. However, in most instances, they are not recognised and remain a by-product of the production system rather than an outcome that has clear mechanisms for recognition, reward and value.

The University of New England (UNE) has established a strong leadership position and significant scientific capacity in research disciplines relating to livestock production, agronomy, natural resource management, agricultural economics and farm business development. This capacity positions UNE as a leader in agricultural sustainability teaching and research, while our extensive industry networks keep us focused on real-world applications.

The Agri-environmental Sustainability and Natural Capital Hub (ASNCH) based at the University of New England, provides an independent, harmonised approach to measurement, analysis and reporting of scientifically-credible tools and metrics of sustainability, ecosystem services, environmental stewardship and natural capital at the farm, regional and industry scale. The hub will provide the opportunity for both public and private participants in agri-environmental value chains to participate in verification and validation of data, information and derived decisions that are consistent with industry and government frameworks.

ASNCH will develop and apply tools that measure, store, analyse and validate on-farm characteristics, performance and resources. Metrics developed by ASNCH can be used to demonstrate compliance against emerging private, government and international frameworks for sustainability, natural capital and ecosystem service provision.

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Need for Independent Validation of Agri-environmental Metrics

Australian farmers and land managers need an independent, reliable, trusted source of metrics and data that are consistent with best management practices (BMP) and can be collected cost-effectively and efficiently within normal management environments.

Australian and global community requirements for responsible, resilient and sustainable agri-environmental systems and supply chains coupled with expectations of environmental stewardship are creating the necessity for Australian farmers and Indigenous or non-Indigenous land managers to be compliant with emerging standards for ecosystem services, environmental management, sustainability and natural capital.

The emergence of a vast array of sustainability frameworks and standards that are not based in science or provide compliance with legislation consistent across different agricultural industries, further complicates decision making and management.

Metrics need to be scientifically validated and practically verified to ensure consistency and credibility across industries, within domestic and international markets, and importantly, align with nationally and internationally recognised sustainability methodologies, all of which can be translated to a user-friendly farm-based system.

The ASNCH provides:

- ✔ Validated metrics within and across agricultural industries and public lands
- ✔ A single provider of metrics that underpin compliance with third party certification systems
- ✔ A system that caters for multiple requirements from commodity markets, governments, and national and international communities
- ✔ Cropping, livestock, environmental management and rehabilitation
- ✔ Data analytics, architecture and visualisation
- ✔ Machine learning and data modelling
- ✔ Software engineering

The proposed hub provides the end-user with access to independent, consistent, credible and validated metrics within and across agricultural industries and public lands, with limited government and industry intervention.

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Rationale of the ASNCH

UNE has a strong fundamental understanding and historical basis in Australian and International agricultural sustainability.

For over 70 years, UNE has had a belief that agricultural systems should not be disaggregated into separate sectors, but must be viewed in an integrated manner. In response to modern research, industry, community, government and global requirements, UNE has established an interdisciplinary focus on agri-environmental sustainability through its 'Global Agri-Environmental Futures' (GAF) strategy.

The strategy provides a collaborative framework that engages researchers and agri-environmental practitioners from numerous multi-disciplinary groups including environmental sciences, animal production, precision agriculture, remote sensing, business, law, environmental psychology, education and extension, environmental history and human geography. This collective expertise will be combined with real-world experience and application to challenges of measuring and monitoring agricultural sustainability and accountability in Australian agri-environmental landscapes.

This strategy emphasises the interactions between key pillars of production systems and forecasting, environmental positioning, social and cultural adaption, economic methodology and modelling and legislative developments in understanding the dimensions of sustainable agriculture.

ASNCH will be headquartered and operationally focussed within the University of New England (UNE), located in Armidale, NSW.

The creation of the ASNCH recognises that a clear focus on the establishment and validation of the underpinning methodologies and metrics used in ecosystem services, environmental stewardship and natural capital accounting frameworks is necessary to ensure successful development of sustainable agriculture recognition systems at the farm gate or for agricultural industries.

ASNCH will be a be-spoke virtual collaboration within the GAF strategy that develops significant partnerships with other institutions, private companies and technology providers.

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Benefits

Providing land managers from varying industries a farm and land management monitoring and evaluation framework that supports:

Standardised monitoring tools, communications and data access platforms for improved assessment of farm and land management practices

Independent, science-backed development and validation of metrics of sustainability, natural capital and ecosystem services in partnership with farmers, land managers, private and public entities

Baseline and ongoing assessment of sustainability, production, natural capital and ecosystem services against region and industry averages

Demonstrate environmental stewardship credentials of farmers, land managers, value chains and industries

Facilitating communication of farm and land management metrics to relevant financial institutions, government, the market and the community

Partners

The ASNCH will become a be-spoke collaboration through development of significant partnerships with other institutions, private companies and technology providers.

UNE recognises that creating a platform for effective and efficient monitoring and evaluation of sustainability, environmental stewardship and natural capital recognition systems with Australian farmers, land managers and agricultural industries will require a collaborative model of trusted and committed public and private partners.

The collaborative network established within the ASNCH will have the capacity to seek commercial connections and opportunities, develop and validate evidence-based tools and methodologies and seek technological innovations that empower individuals and industries to provide better sustainability and environmental stewardship outcomes. A key outcome for both UNE and potential partners will be the ability of ASNCH to inform national and global policy and provide a scientifically underpinned resource that allows industry to:

- Meet environmental stewardship requirements of both value chains and community;
- Achieve sustainable and ethical production/supply chains that improve both animal and human wellbeing, and
- Protect and enhance biodiversity and minimise impacts on natural capital

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Coordination and Contacts

To find out more about the development of the hub and the opportunity to be a collaborator or investment partner, please contact:

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