High level takeaways from the ImpactX Agriculture Forum

Agriculture contributes approximately 18% of Australia's greenhouse gas (GHG) emissions, although by 2030 we expect this to be closer to 25%. When the full supply chain is factored in (especially transportation to end users) this emissions number is much higher. In addition, the sector has a strong land and water usage footprint.

It is therefore fair that the industry seeks to reduce its greenhouse gas emissions whilst maintaining a responsible impact on the land and sea in which it operates. Moreover, there is a hope and a need that the sector will also provide major recarbonisation opportunities i.e. carbon sequestration, to support other sectors outside of agriculture and assist them with their decarbonisation efforts.

There was overwhelming alignment on the day at the forum that having healthier and happier soils was a preferred outcome. Whether through holistic management practices or regenerative farming there was agreement on the benefit of reduced inputs.

To date, much of the attention and focus on decarbonisation has fallen unsurprisingly on the energy sector. It is likely the emissions limelight will be more evenly shared going forward. Like energy, the agriculture and food sector has a complex and interlinked supply chain. There are primary producers at one end of the chain, and the customers at the other, with food processing and packaging, waste streams, distributors and markets in between. In layperson's terms, further to the direct emissions of a business (Scope 1) over which you have control, there are purchased energy requirements (Scope 2) as well as full supply chain-related emissions (Scope 3). All are relevant emission types to consider.

The term 'confusopoly' was referenced multiple times at the forum. For some stakeholders it is the terminology relating to decarbonisation that can be confusing. For example, the terms Net Zero and Carbon Neutral are often used interchangeably, and their definitions can vary by sector and jurisdiction. A reduction in emissions intensity (emissions per unit of production or revenue) a widely used metric, can disguise an overall increase in absolute emissions. So, what metric should one be using and how do you avoid greenwashing? In particular, we need to understand the potential impact of Scope 3 emissions.

Arguably there is no other sector that is as significantly impacted by physical climate risk as agriculture, in particular the producers or farmers. Reductions in seasonal rainfall (notably winter and spring) , longer term drought conditions, extreme-weather events (floods, bushfires, cyclones etc) must all be factored into the business planning and strategy.

Collaboration and partnerships are key enablers to help decarbonise. For commercial reasons entities like to keep certain information confidential, so business as usual will be challenged. Companies will need to be 'comfortable' being 'uncomfortable'. There is also the benefit, mainly untapped, to bringing in cross-sector experience and best practice i.e. do not try to solve this just within an agricultural silo.

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Whilst farming has many corporates operating in its sector, it is also highly comprised of individuals/families who have a day job. They cannot readily afford a sustainability team or expensive consultants to help navigate through the complexities of emissions reductions, the vagaries of carbon neutral vs net zero, and managing supply chain and supply partner's expectations. They need a voice and support.

The move to mandatory climate reporting from 1st January 2025 means more than just increased data measurement, reporting and validation. With legislation comes heightened legal risk. A key benefit is that Boards and Company Directors will now take the transition more seriously. The worry is where the onus and pressure will cascade down and up to i.e. up the supply chain to the producers (farmers).

As previously highlighted the supply chain for agriculture is highly complex. This complexity is compounded by climate terms and acronyms, many of which are poorly and inconsistently defined by stakeholders, including governments.

For businesses there is an expectation to state your position on alignment or otherwise to the Paris Agreement, the existence or not of a Net Zero or Carbon Neutral target (preferably Net Zero), a credible climate transition action plan (CTAP) to achieve your stated targets, as well as identified and committed funds to execute your CTAP.

Going forward there will likely be other requirements such as commitment to advocacy. Given the position agriculture finds itself in as well as the potential opportunities it might uncover, we need a strong lobby and advocacy with government to affect the best decarbonisation outcome for all.

Carbon Neutral in its simplest form is a commitment to balance your existing emissions with a corresponding carbon removal. This is often in the form of a carbon offset i.e. paying a $ amount for a tonne of CO_2 equivalent (tCO_2e) that has been sequestered e.g. tree planting.

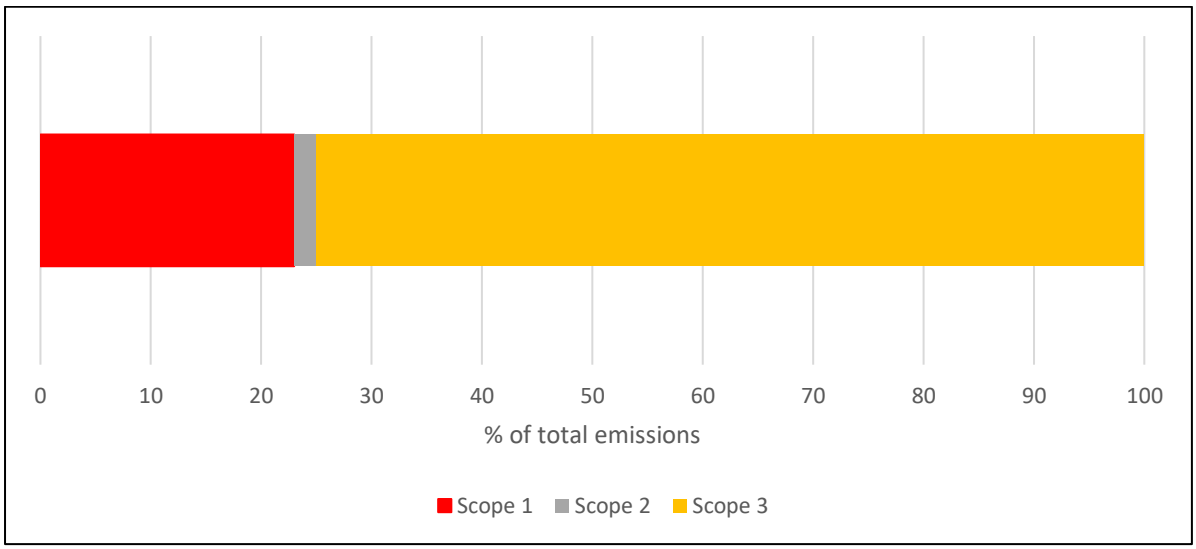
Net Zero is similar to Carbon Neutral except the emphasis is primarily on emissions reductions first (reducing as much as is reasonable) before using offsets and carbon removals to balance the remaining emissions.

The Science-based Targets Initiative (**SBTi**) has a more ambitious Net Zero that demands a 90% emissions reduction from an agreed baseline before the use of carbon removals for the remaining emissions.

These targets tend to be longer term normally by 2050 which is when the science tells us we need to be actioning these targets by to give ourselves any chance of restricting temperature increases to well below 2°C and hopefully nearer 1.5°C. We are already getting perilously close to surpassing this 1.5°C threshold hence the need to accelerate our climate ambitions.

The majority of emissions targets set by companies tend to only include Scope 1 and Scope 2 emissions. The chart below is a generalised representation of an agricultural primary producer.

Generalised scope emissions for a primary producer



Source: NXTNRG 2024

Scope 1 - are your direct emissions in this case on-farm emissions and includes combustion of fuels. It is deemed you have control over these emissions.

Scope 2 – are your indirect emissions from the fuel used to produce the electricity and heat that you use on-farm. To reduce these, you could source electricity generated from renewables.

Scope 3 – are all the other emissions where you do not have direct control but some influence. They are part of your overall supply chain. There are 15 categories defined for the GHG Scope 3 emissions and 8 are Upstream and 7 are Downstream of your farm operation.

For a farmer, the key Scope 3 emissions tends to be Category 1 (Product and Services) and Category 4 (Upstream Transportation & Distribution), and these represent the embodied GHG emissions in products and services you might buy such as feed, fertiliser and the transport to get them to your farm.

The chart also highlights the relative importance of each of the Scope emissions. It is clear to see why Scope 3 emissions are such a key discussion point. By defining Scope 3 and having responsibility for more than just your own Scope 1 and 2 emissions this provides a shared interest and common goal across the sector in solving the overall decarbonisation issue. There is the expectation that doing this will also affect a quicker outcome.

However, we need to address more than just the definition of scope emissions. A key theme at the Forum was the need for more and better data particularly in light of the move to mandatory reporting. Many companies feel ill-prepared with respect to their data measurement and capture. Furthermore, the integrity of the data is paramount hence the likelihood that the data measurement will link through to blockchain or an equivalent to ensure this.

A related issue was also the platform(s) and reporting systems which are needed to allow reporting for multiple end users. A key element of the voluntary TCFD reporting, which was the pre-cursor to the new mandatory reporting, was the scenario analysis and modelling to test a business under particular potential situations. When done correctly this allows an entity to make more meaningful decisions. It does however require quality data inputs and assumptions.

The flipside to the uncertainties that face the agricultural sector are the considerable opportunities that carbon sequestration or 'recarbonising' represents.

Nature-based solutions are a fast growing and potentially lucrative option for farmers and other agricultural stakeholders to consider. They can be segmented into Green (land), Teal (freshwater) and Blue (marine) carbon offerings.

Carbon schemes exist where emissions are avoided through Reducing Emissions from Deforestation and Forest Degradation REDD+. There are also Afforestation, Reforestation and Revegetation (ARR) projects that focus more on carbon removal and sequestration. This is a major topic in itself and falls outside the remit of this update, however, suffice to say there have been recent issues with the integrity of some of these projects, notably REDD+.

One of the blue carbon solutions involves the restoration of mangroves. The carbon sequestration potential of mangroves is significantly higher than green carbon. Furthermore, the permanence advantage of mangroves against tree plantations is marked as they are not as prone to drought, bushfires and pest issues.

The Blue Carbon accounting method for Australia Carbon Credit Units (ACCUs) in Australia was devised to account for converting agricultural land back to mangroves. This activity and related revenue could mitigate sea level rise impacting farmland as well as provide farmers with a natural hedge against inundation and increasing salinity issues.

There are numerous other carbon-related opportunities to consider including the production of biochar as well as hemp. The latter is very fast growing, sequesters significant carbon and also has a role in cleaning up contaminated soils. Biochar meanwhile is a soil conditioner and attracts a healthy carbon price using international methodologies such as Puro.earth, when the biochar is sequestered into the ground.

Way Forward

The ImpactX Forum was very timely, but it was clear there is much work to be done within the Agriculture and Land sector. The need for collaboration came through loud and clear. Some of this closer working with supply partners and even competitors involves a higher level of trust due to the sharing of commercially sensitive data. In some instances, new types of partnerships are emerging such as farmers aligning with energy players to provide energy solutions. The need for accurate, transparent and reliable data is key and we need this across the supply chain. A co-benefit that will likely result is better optimisation of the supply chain.

The 'confusopoly' is a barrier for progress, however many of the issues are shared by other sectors hence we do not necessarily need to fix this solely within the agricultural silo; we can seek best practice and solutions from other industries where relevant.

We cannot get away from the physical climate risk that impacts farmers and producers in particular. This issue is further exacerbated by climate change. Improved weather and climate forecasting will go some way to helping manage this risk.

The nature of the agricultural supply chain means we do need to manage upstream and downstream of our operations. There is the need for the larger corporate entities active in the agriculture and land sector to support the industry.

Who are NXTNRG?

NXTNRG are climate risk experts who support their customers by helping them develop tailored strategies and to navigate appropriate pathways in the transition to net zero.

The NXTZero Research team produces detailed research, analysis and data tools to provide information and insights to enable our clients make better decisions.

The NXTNRG Advisory team has a strong focus on decarbonisation and the supply chain.

Finally, NXTNRG has a projects and solutions team that operates within an ecosystem of qualified technology partners. Current technologies being deployed include dual-fuel transition solutions to significantly lower diesel emissions (trucks and stationary engines) as well as biochar projects.