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## OPINION PIECE

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# The food, fuel and global warming debate

## A look at the Walgett Wheatgrower

The interconnectivity of the food, fuel and the role of agriculture in the global warming debate can perhaps be best illustrated by looking at how it could impact on say the Walgett wheatgrower.

The Walgett wheatgrower has adapted to climate change through the use of no-till technology where the soil is not disturbed by cultivation. The residue of the previous crop is left on top of the soil to form a protective blanket of mulch.

This technology not only improves soil structure, moisture infiltration, microbial activity, reduces soil erosion from both water and wind but also has a positive impact on the soil carbon status through the natural sequestration of carbon through the accumulation of humus and organic matter.

It is recognised that this farming technique is equivalent to an additional 150ml-200ml of rainfall per annum – an extraordinary climate change adaptation which could be transferred to other dryland farming regions of the world.

With the global blowout in fuel and fertiliser costs and the impact of transport costs on climate change, the Walgett wheatgrower therefore stands at the farm gate with a dilemma. Does he grow food or fuel?

Some suggest that Australia and the Walgett wheatgrower have a moral obligation to feed the world - that agricultural land should be used for food production rather than fuel such as ethanol or biodiesel.

Others would suggest that we should encourage renewable energy – biofuels – to lessen our dependence on diminishing fossil fuels thereby replacing a finite energy resource with a renewable energy resource.

If the debate was only between these two alternatives it may keep it simple, however we now have a third factor overarching both of these – climate change or global warming of which carbon dioxide and nitrous oxide (fertiliser) play a role.

The problem we therefore face in this debate is that if we deal with each in isolation we are going to impact on one or both of the others when really each is as important as the other to achieve long term sustainability

Rather than dealing with food, energy (fuel) and greenhouse gas emissions (carbon dioxide and nitrous oxide) as separate issues with separate policies, policy makers need to address these three vital issues to our survival in the same context and develop policy that has a firm focus rather than sending mixed messages as the current policy suggests.

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So back to the Walgett wheatgrowers dilemma looking out over his paddock.

In a market driven economy, the Walgett wheatgrower is able to decide what he plants based on the economics of his situation.

The Walgett wheat grower for food will have his carbon footprint monitored and conceivably be part of an Emissions Trading Scheme. He will produce a footprint on his farm during planting and harvesting, another from his farm to silo, another from silo to port, from port to the Middle East with a product that also constitutes carbon in the grain starch, only to see those export funds used to buy oil with all the consequential carbon footprints coming back to the Walgett wheat grower to start all over again.

The Walgett wheat grower who uses his grain for fuel or energy however would have a smaller carbon footprint as the bulk grain would not be exported thereby cutting out those legs of the journey and the associated carbon footprints.

Further, if the Walgett wheatgrower changed his landuse to the production of cellulosic ethanol from grasses such as switchgrass, the capacity to naturally sequest carbon in the soil is further enhanced through non-disturbance of the topsoil and increased soil humus and organic matter.

If a Walgett grain-based ethanol plant used anaerobic digestion technology, byproducts such as electricity bagasse and nitrogen fertiliser can be produced - an additional positive in relation to reducing Green House Gas (GHG) emissions.

As well, CO<sub>2</sub> capture is a technology now available which has a range of uses including CO<sub>2</sub> injection into hothouse environments such as tomatoes to enhance yield and growth of vegetables and other crops.

If the plant uses traditional fermentation technology, the bi-product of distillers grain is a rich source of protein used by feedlotters or directly into the food chain.

So if we are serious about reducing our carbon footprint, then we should aim at becoming self sufficient in our food and energy production.

That still leaves us with the moral dilemma of contributing to feeding the world – the starving millions.

To address this part of the triumvirate, the Walgett wheat grower's knowledge and expertise in farming dryland soils could be exported to assist developing countries to be able to feed and power themselves rather than criss-crossing the world with food and fuel and contributing further to the world's greenhouse gases and global warming.

The African nation of Sudan for example has 100,000,000 acres of soil similar to Walgett with similar rainfall and could potentially produce 10% of the world's grain with Australia's dryland farming technology.

Australia produces 1.75% of world grain production in a good year.

What's the old Biblical saying? "Give someone a fish and you feed them for a day. Teach someone how to fish and you feed them for a lifetime" and we may just save the earth at the same time.