

## Submission to the Inquiry into food pricing and food security in remote Indigenous communities

In this submission, I intend to address the following terms of reference:

- 1- The environment in which Remote Community retailers operate;
- 3- The governance arrangements for Remote Community stores;
- 5- Barriers facing residents in Remote Communities from having reliable access to affordable fresh and healthy food, groceries and other essential supplies;
- 6- The availability and demand for locally produced food in Remote Communities.

I start with solutions to the problems around 5 and 6, which will have strong implications for 1 and 3.

Currently, Aboriginals in remote communities have to depend for their food supplies upon a system loaded with factors which are not beneficial or empowering to them. Food has to be trucked in from great distances, and that food has been sold often by unscrupulous retailers who mark up the prices of their food and other items to levels way beyond which would be tolerable even for employed people living in Australia's large urban areas, let alone for unemployed people in remote areas, as many of the Aboriginals living in these communities are.

It is my purpose to present solutions which will not only partially address these issues, but also provide sustainable income-producing jobs for these remote communities, and even eliminate a major cause of illness and disease which has long been a characteristic of these remote communities.

Firstly, a solution which will enable these communities to produce large quantities of livestock feed for flocks of chickens they can then keep on their lands. This will provide a sustainable local source of meat and egg protein that will assist greatly in providing good nutrition, as well as eliminate a major source of disease.

Many years ago a study was carried out which showed that 37% of 155 such communities in Western Australia had no rubbish disposal, and that even those communities which did often had rubbish tips full of rotting organic waste which became an insect-borne vector for infectious diseases. The study link is below.

<https://onlinelibrary.wiley.com/doi/pdf/10.1111/j.1467-842X.1997.tb01744.x>

As it turns out, all the filthy fly-breeding rotten organic waste can be used to create jobs. All that is needed is to take the waste and feed it to the larvae of a fly species called the black soldier fly. These larvae are extremely efficient at converting waste into useful biomass which can be sold as high protein feed to poultry, fish and pigs, and the residue is a good organic fertiliser. Fish will actually play a large role in the next aspect of my submission below.

Companies around the world are being set up to use these larvae to dispose of waste which would otherwise go to landfill and attract all kinds of disease carrying vermin including rats.

<https://www.abc.net.au/news/2017-07-09/melbourne-millennials-breeding-flies-to-tackle-waste/8688692>

<https://www.goterra.com.au/about-us>

The next two links below shows just how large these black soldier fly larvae operations can become. A company in South Africa called AgriProtein processes a hundred and ten tonnes of organic waste

and grows twenty two tonnes of larvae per day, as well as producing large amounts of organic soil fertiliser. Of course, tiny remote communities do not and cannot generate such amounts of waste. However, it is entirely possible that such a community can generate enough waste so that it would be feasible for them to have a local business which produces enough livestock feed to sell to customers outside their community.

<https://edition.cnn.com/2018/09/27/business/agriprotein-fly-farming/index.html>

<https://agriprotein.com/wp-content/uploads/2017/02/agriprotein-magsoil.pdf>

Another bonus is that black soldier flies are not known vectors of infectious diseases, and as the adults do not feed on any waste, are not attracted to areas of human activity. As their numbers multiply in an area, they will displace populations of ordinary disease carrying species of flies and thus eliminate a major source of disease. This is because while the larvae are voracious feeders, the adult flies do not have mouths, and cannot feed. Their only interest is to breed and make new larvae, as can be seen in the next link below.

[https://www.nswfarmers.org.au/NSWFA/Posts/The\\_Farmer/Business/Maggots\\_The\\_livestock\\_feed\\_no-one\\_saw\\_coming.aspx](https://www.nswfarmers.org.au/NSWFA/Posts/The_Farmer/Business/Maggots_The_livestock_feed_no-one_saw_coming.aspx)

So instead of being forced to live near garbage tips fully of rotting organic waste which spreads disease to these communities, they can eliminate the waste in a way which will not only help provide them with a local food source, but also prevent any disease-carrying species of flies from spreading disease by eliminating their food source.

Perhaps instead of garbage trucks coming to take away their rubbish, which does not now happen in many cases, there may come a time when garbage trucks travel to some remote communities to GIVE them organic waste for processing in their local black soldier fly farming operations, thus creating lasting jobs, affordable food, sustainable income and hope for the locals who currently have little of any of those to look forward to.

Black soldier fly compost bins can be and are often designed to take advantage of an aspect of the fly's life cycle which makes them very easy to operate. By giving the sides of the bins a slope instead of a vertical wall, the larvae climb out of the bin under their own volition when they are ready to pupate and turn into adult flies. Harvesting containers can then be placed next to the sloping walls of the bins where organic waste is deposited. Therefore the operation of such a farm would need basic training which could be easily delivered to those in remote communities.

<https://www.aquaculturealliance.org/advocate/black-soldier-fly-larval-production-in-a-stacked-production-system/>

This, however, is just the beginning of what can be done.

Earlier I mentioned how the larvae could be eaten by fish.

Aquaponics is a system where edible fish are grown in tanks, and their waste water is pumped through into grow beds for edible plants. These plants in taking up the waste clean the water which can then be returned to the fish tank in a closed loop process, resulting in very little evaporation and thus preservation of water.

It can easily be imagined how this would benefit remote Aboriginal and Torres Strait Islander communities which currently do not have ready access to good quality nutritious food. Many nutrition programs for these people already exist, and I feel the innovation of aquaponics would

eagerly be taken up by many in these communities as there are already people on the ground working to improve this aspect of their lives.

<https://healthinonet.ecu.edu.au/key-resources/programs-and-projects/?id=3320>

<https://www.mja.com.au/journal/2009/190/10/improving-aboriginal-and-torres-strait-islander-nutrition-and-health>

<http://www.health.gov.au/internet/publications/publishing.nsf/Content/oatsih-evidence-socialhealth-toc~nutrition>

<http://healthbulletin.org.au/articles/review-of-nutrition-among-aboriginal-and-torres-strait-islander-people/>

Remote Aboriginal communities are often located in areas with extremely low rainfall, where water is precious. Therefore planting and growing food crops, many kinds of which need copious amounts of water to grow, is not a viable option. An aquaponics system will use only a tenth of the water that is needed for conventional farming, and will produce a large amount of food in a small area.

<https://www.permaculturenews.org/2016/05/30/what-is-aquaponics-and-how-does-it-work/>

These systems are suitable for smaller kinds of edible plants such as leafy herbs and vegetables as well as capsicums, tomatoes, beans and the like. Large amounts of food can be grown either for community consumption or for sale to nearby towns, in which case an aquaponics system will be instrumental in creating local jobs for Aboriginal people.

<https://aquaponics.com/recommended-plants-and-fish-in-aquaponics/>

There are many, many guides online with instructions on how to build and maintain aquaponics systems.

<https://www.greenandvibrant.com/aquaponic-plans>

<https://www.instructables.com/id/Building-an-Aquaponic-System/>

<https://www.instructables.com/id/Build-a-vertical-aquaponic-veggie-fish-farm-for-/>

While the growing and harvesting of black soldier fly larvae would be particularly easy for relatively unskilled people in remote communities to practice, setting up and operating an aquaponics system in a remote area would require far more advanced training. Fortunately there are already several established training courses which focus on training Aboriginals in remote areas the art of aquaponics farming, including the Purple Garden Project in Alice Springs and a South Australia Community Development Program for indigenous people.

<http://www.remoteindigenousgardens.net/2014/01/aquaponics-in-alice-supporting-the-purple-garden-project-from-rig-news-sept-2013/>

<https://www.indigenous.gov.au/news-and-media/stories/aquaponics-pilot-taking-remote-south-australia>

Also in South Australia, a large aquaponics farm is growing native Australian foods as well as fish and training indigenous people to do the same:

<https://www.sbs.com.au/food/article/2019/07/10/native-bush-foods-are-growing-swimmingly-pundi-produce>

Here are two short videos of this farm's operation:

<https://www.youtube.com/watch?v=BJK6w-RSGs8>

[https://www.youtube.com/watch?v=FZ-ML6Xsk\\_0](https://www.youtube.com/watch?v=FZ-ML6Xsk_0)

When placed together, the growing of black soldier fly larvae and the growing of fish and vegetables in an aquaponics farm represents a great opportunity to enable remote Aboriginal communities to significantly improve their abilities to become self-sufficient in the growing of their own food, which will reduce their current dependency upon the exploitative grocery businesses in their communities which sell grossly overpriced and low quality food to them.

Beyond that, programs which implement this will give those communities job and business ready skills which will provide them with sustainable and continuing employment for years to come, as well as empowering these communities and giving them much needed hope for their future. As well, by removing a major cause of illness in these communities (rotting garbage dumps), the health of the people living in them will be improved in yet another powerful way.

I therefore strongly recommend and endorse the use of the above solutions which will not only drastically improve the level of nutrition available to remote Aboriginal communities, but will also greatly improve their capacity and ability to seek gainful employment and significantly improve their living conditions in general.

Rick Pratchett

YAGOONA NSW 2199