AMP GRAZING SOUTHEAST U.S. – FUNDERS OF THE RESEARCH AND DOCU-SERIES

Research Modules: 1) soil carbon, nitrogen, water infiltration; 2) greenhouse gas cycling; 3) vegetation; 4) soil microbes; 5) bugs; 6) grassland birds; 7) animal well-being; 8) farmer well-being & 9) docu-series

(In chronological order of funds received by Arizona State University Foundation)

FUNDER	AMOUNT	MODULE(S)
McDonald's	$4.5m	All (matching all other grants)
FFAR	$1.25m	1,3,4,6
Rodel Foundation	$100k	5
Private Family Donation	$300k	9
Private Family Donation	$200k	9
VF Foundation	$100k	8
Wrangler	$25k	8
Timberland	$25k	8
Windward	$300k	Scouting, 9
Michigan State Uni	$25k	2 (cow burps, aka enteric emissions)
Uni of Illinois	$25k	2 (all greenhouse gases)
ExxonMobil	$400k	2 (nitrous oxide measurements)
Cargill	$200k	9
TOTAL DIRECT FUNDING	$7,450,000	
Shell Oil	$1.0m	2, Direct funding to Uni of Exeter
ASU	$1.5m	All (in-kind funding)
TOTAL PROJECT FUNDING	**$9,950,000**	

History of how we funded AMP (adaptive, multi-paddock) Grazing Southeast Research

The following is a slice of the 100's of meetings we had over a 9 year period (2013-2022) to secure the funding for this research, which includes the funding for the docu-series, *Roots So Deep (you can see the devil down there).* It is basically the story of individuals at big corporations and foundations who were brave enough to put their jobs on the line to help us find the money to pay for this large project.

Contract Independence

All of the funding went through the Arizona State University Foundation, a 501c3 non-profit organization. There were no restrictions on the funding; the funders saw our proposals, with our science team members in place, and chose to fund based on what we were planning to do. The funders had no control on the research methods or locations, what we published, where we published, when we published – and they had no control of the content of the docu-series. All that said, we were grateful for our funders' support and we kept them completely in the loop on

progress, set-backs and, finally, data once the scientists had done their analysis.

How it Got Started
Our AMP Grazing Southeast US research project all started with my first conversation with Allen Williams in December, 2012 – which led directly to our short film: *Soil Carbon Cowboys*, starring Allen Williams, Gabe Brown and Neil Dennis. That film was funded by the Sara and Ev Williams Foundation, the World Bank, and Paula & Jim Crown. This was my initial on-the-ground research of AMP grazing. It was filmed in the summer of 2013 and had its World Premiere in Dec, 2013 in Johannesburg, South Africa. This short film led to a total of 10 shorts on AMP grazing: carboncowboys.org.

Putting the Science Team Together
This project also started with a phone call between Russ Conser (then head of Shell GameChanger) and me, organized by Philip Payne, who had been a great supporter of *Carbon Nation*. I said to Russ: "You all are spending $1b for a carbon capture and storage facility in Alberta, called Quest (designed to capture some of the CO_2 emitted from upgrading tar sands into usable oil). What if you spent that money educating ranchers to do AMP grazing, and share in the carbon they'll be storing in their soils, you could even sell gas as carbon neutral because of that carbon, and you could be a good citizen." Russ was intrigued, already knew about AMP grazing – he'd switched to grass fed, grass finished beef for his health and had just a few weeks before seen Allan Savory speak on the subject at TED. Russ asked: "Do you have any data?" I didn't. It didn't exist. Or so I thought. Turned out, Richard Teague did have a paper from 2011. Russ then dug into Teague's supporting data and realized that the data showed that AMP grazing drew down and stored perhaps 3 tons of carbon per hectare per year more than the conventionally grazing neighbor. Through connections I made, Russ got some data supporting similar outcomes from Christine Jones in Australia. That all got Russ' mind spinning. Russ and I began a great friendship – and, after Allen Williams, he was the next member of the research team.

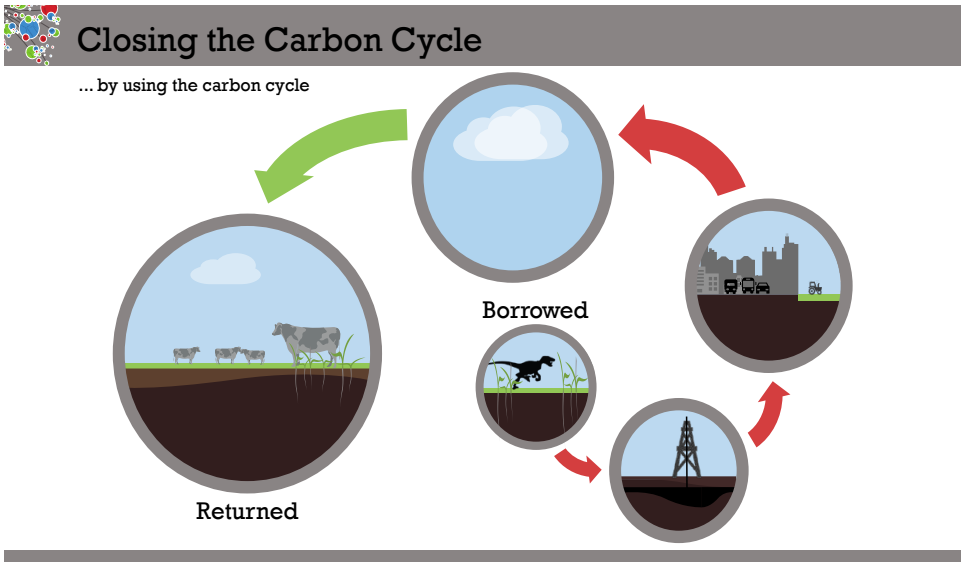
Shell
We presented our request to fund AMP grazing research to Shell GameChanger in August of 2013 – the week before Russ retired from Shell, after a 30 year career there. The GameChanger folks were skeptical that AMP could be a material (big enough) solution to climate change, but they gave us a grant to do the research to make the business case. I said the business case was clear: it would cost Shell, after the $1b outlay for the Quest plant, $150 to capture and store a ton of CO_2. AMP farmers could capture and store a ton of CO_2 for a profit, and would be very interested in getting paid $10-20 a ton per acre. The delta between $150 and $10-20 was the business case.

Shell still wanted more data – so we formed our team, which Russ dubbed Project Meadowlark. The internal Shell Meadowlark teammates were Christian Davies, a soil scientist (check), Rick Marriner, a retail and logistics expert and Henk Mooiweer, our GameChanger lead. The external teammates were Russ (now retired), me, and ecologist Steve Apfelbaum, our next member of the science team. Our grants from GameChanger for business case research totaled $500k over the next 2 years – and we met with thought leaders around the US and the UK, digging into the viability of the combination of grazing and soil as a way for Shell to take care of some of its carbon emissions.

In 2015, GameChanger then granted us $500k to do some initial field research in Alberta – on 4 pairs of farms – AMP on one side, conventional on the other. We made a short film on this work, *The Luckiest Places on Earth*; it's $50k budget came from part of the $500k for field work. In this work, we learned that getting AMP ranchers to say yes to research was easy, and getting

conventional neighbors to say yes to research was more work, but doable, and that making a film on field research need not be boring.

This slide was our pitch – to close the carbon cycle by using the carbon cycle.



Sidebar: Concurrent to all this work, we were also putting together our large research team to develop the proposal for the systems science research; we were hoping to measure 4 regions in the US – with a budget of $17m. The story of how the team formed is in the first 10 minutes of *Roots So Deep (you can see the devil down there).* The proposal development process took from January 2014 to July 2016. Our goal was to have Shell fund this behemoth.

During that development period, we asked scientists at USDA to vet our proposal – to make sure our methods were sound. Our methods got a thumbs up.

Throughout the summer of 2016, Shell vetted our proposal by engaging scientists in their network. Even though many of those scientists didn't think AMP would be a climate solution, they approved our proposed research methods.

On November 30, 2016, Shell turned us down. Four years of work, 1000s of miles traveled, 1000s of hours of work, 100s of hours away from home, and our big project was left unfunded.

McDonald's

My experience with McDonald's began in the fall of 2012, when I met Francesca DiBiase (who was VP of Global Supply Chain at the time) at the BSR conference in San Francisco. I was presenting clips and stories from my film *Carbon Nation*. Francesca invited me to McDonald's HQ that December, and I presented the initial idea of studying what we would call AMP grazing – and see if it could be a help to solving climate change.

We kept in touch over the years and then in 2016, we heard McDonald's was looking for grazing projects to fund. With the help of Nicole Johnson-Hoffman, the McDonald's lead at Cargill, we got a proper meeting in the summer of 2016. Richard Teague and I were in person, the rest of our team virtual, and we presented our research plan.

The next morning we met with Townsend Bailey (who was Director of US Supply Chain

Sustainability) and Susan Forsell (VP, Sustainability – and about to retire to start making pies). Townsend asked me what if the research showed AMP was a benefit to the land, to the farmers and to the climate – what then? I told him we would be making a film about the research, and hopefully it would be 1) good, 2) get lucky enough to be seen by many, and 3) our team was forming a plan to help scale AMP grazing to as many farmers as would choose to change.

We gave McDonald's our 120-page proposal we had worked up for Shell – we had just finished it days before – and I heard later that they were impressed that we had it in-hand; a gift from our campaign to get Shell to fund us.

Susan recommended we hold a 2-day conference where scientists and NGOs McDonald's respected could meet with our team and really dig into the proposal. She arranged for this to happen at the Noble Foundation, in Ardmore, Oklahoma. In September 2016, the conference was held – and our research proposal was – yet again - vetted, poked, prodded, dissected. We thought it was a good meeting, but we didn't know for sure.

Months went by.

Then, on Dec 1, 2016, less than 24 hours after Shell turned us down, Townsend called: McDonald's had approved $4.5m as a matching grant; to use any McDonald's money, we had to find money from other funders as well, dollar for dollar. Looking at the $9m total (just about ½ of our original $17m dream budget), it would be enough (we thought) to do two of the four regions we were angling for: the Southeast US, and the Northern Great Plains. In the end, we focused on the Southeast US. [Our research in the Northern Great Plains began in the spring of 2023.]

From our perspective, there were 3 major reasons for McDonald's support: 1) the need to create a resilient beef supply chain, 2) answering customers' need to feel good about where their food comes from, and 3) showing its investors that McDonald's had a thoughtful, doable and profitable approach to mitigating climate change.

Foundation for Food & Agriculture Research (FFAR)

In November of 2016, I met Sally Rockey and LaKisha Odom at the Tri-Societies conference in Phoenix. Sally was the Executive Director of the Foundation for Food and Agricultural Research, and LaKisha was the Scientific Program Director, heading up their soil health work. FFAR was pretty new and was just starting to give out grants. The 3 of us had lunch on the last day of the conference, and I spelled out the AMP grazing research game plan, the amazing scientists on our team, and our hope that Shell and McDonald's would be coming on board. FFAR required a dollar for dollar match from industry sources, so the potential of Shell and McDonald's participation was a good fit. Sally said she was very interested, and we started the formal process of applying for a grant that winter, and by the fall of 2017, we were granted $1.25m. This freed up the same amount from our McDonald's matching grant, and we were, after 4 years of planning and fundraising, ready to hit the fields in the spring of 2018.

Wrangler, Timberland and VF Foundation

When *Carbon Nation* played in San Diego in 2011, I met Roian Atwood, who was working for a surf clothing company that had a focus on sustainability. In February of 2015, I ran into Roian again (at a GreenBiz conference) – this time he was working for Wrangler Jeans, out of North Carolina. I told Roian about our AMP grazing research, and he was interested in our social science module. Wrangler had done its own social science research on American farmers who, their research showed, were under great financial stress. Wrangler thought if AMP grazing could be proven to help relieve these farmers, aka their customers, of this stress, it would be good for everyone.

Roian brought in Zach Angelini from Timberland – at the time, both companies were owned by the VF Corporation. Combined with the VF Foundation and the two apparel companies, we raised $150k to cover the farmer well-being (socio-economic) budget. It took 3 years and many meetings (in-person and over the phone) to close the deal for this funding.

ExxonMobil
In 2019, a year after our field research was in progress, we got connected to ExxonMobil (XOM) via one of our former Shell colleagues, Henk Mooiweer. Erin Tullos, who was a green-house gas (GHG) expert at XOM, took a liking to our research plans and goals. After a field trip to the Woodville, Mississippi farms, a bunch of phone calls and in-person meetings in New Jersey and Berkeley, CA – XOM offered $400k for our GHG research, helping us get methane and nitrous oxide measurements.

Cargill
In the summer and fall of 2020, Cargill came on board, putting $200k towards the completion of the docu-series. Courtney Hall was running their Beef-Up program at the time and made this funding request incredibly easy.

Scientists' Universities
The University of Illinois and Michigan State University each put in $25k to support their scientists on our project.

Private Family Foundations
The rest of our funding came from private donations from individuals and family foundations.