**Bacon in the Atmosphere – Diet and Sustainability**

by Annette Dehalt for “Camosun Talks” Sustainability: 9/23/15 (10 min)

As an ecologist, I am infinitely intrigued by food chains. I spent years in field and lab trying to figure out just how much krill it takes to sustain a humpback whale, and how much *more* krill if the whale feeds instead on *herring*, who feed on krill. Spoiler alert if you haven’t suffered through my favorite lecture yet – it’s around 10 times more, as in most food chains. It’s called the “rule of 10” even though it can range from 5-20 depending on species and a bunch of variables. But it’s not a rocket science math concept at its core: 1000 tons of micro-algae feed 100 tons of krill feed 10 tons of herring feed 1 ton of whale – more or less.

In my *other* life, as a ranch hand, I worked all day with close relatives of whales: even-toed ungulates in the same order, called cows. Unlike with whales, back then I thought nothing of eating their flesh at the end of the day, and I was a good little cowgirl *cog* in the huge machinery of industrial animal agriculture. - It took me too *many* long lonely rides on the range, that sea of sage brush, to make the connection and realize that quite possibly there could be a conflict of values between my two occupations…

Who knewthat beef – and dairy, and pork, and poultry, and eggs etc… - that animal agriculture worldwide is responsible for over *half* of global greenhouse gas emissions? No, really, who *knew*? I’m a food chain junkie, and I had no *idea*. How can such a large number, 51%, published by scientists at the World Watch Institute in 2009, remain such a well-kept secret? This number itself is a careful revision – by incorporating a fuller lifecycle analysis - of an earlier estimate of *18*% of global greenhouse gases attributable to the livestock sector; *that* number was already published in 2006 by the UN’s Food and Agriculture Organization or FAO – equally under-reported.

By comparison, the IPCC (International Panel on Climate Change) lists the entire *transport* sector as contributing “only” (quotation marks!) 13% of global emissions – and *their* figure even *includes* all transport related to animal agriculture, such as feed crops, animals destined for centralized feedlot and slaughter operations, and the distribution of animal *products*. Transport emissions for moving people and other goods would thus be considerably *less*.

So…less than 13 percent of greenhouse gases from human *transportation* choices compared to 18 to 51 percent from human *dietary* choices… but somehow no one is talking about the *latter*. It’s been said that a vegan in a car is better for the environment than the average meat eater on a bicycle. By the way, the “average meat eater” in Canada translates to 100kg meat/year – we rank 9th in the world for meat consumption (India ranks last with 3 kg – or should I say ranks *first* with regard to sustainability?).

Bike to Work week is a great initiative, but joining the Meatless Monday movement would make a greater contribution to climate mitigation. And to the cycling vegans in the audience – you are my absolute heroes! We should invent some kind of Camosun Carbon Credit to acknowledge your efforts!

Oh, and while we’re talking Meatless Mondays – why not add Waste-free Wednesdays? Not just with regard to food *packaging*, but food itself. Did you know that one-third of food for human consumption is *wasted?* It adds up: trashed surplus production, stuffed garburators, unwanted left-overs, that forgotten, fungus-covered “*What WAS That?”* at the back of the fridge…

The perhaps unexpectedly high percentage of CO2 equivalents from animal agriculture begins to make sense when one considers that the livestock sector contributes to the atmosphere some 60%1 of human-induced nitrous oxide (think manure management) – and nitrous oxide gas has a Global Warming Potential of close to *300* times that of CO2!

In addition, the livestock industry is generating around 40%1 of all human-induced methane (think microbial fermentation in cattle’s fore-stomachs) – with methane’s Global Warming Potential roughly 25 *times* that of CO2. At least methane has a relatively short atmospheric life time, so giving up beef in particular would not only make a *large* contribution to climate control – like any meat-free diet - but could also lead to a relatively *quick* reduction in atmospheric levels*.*

We humans have dedicated 30% of the world’s ice-free land base to animal agriculture – a lot of it for growing feed crops like corn and soy to channel into the bacon burger food chain. 30% of land - talk about habitat loss! Actually, make that *70*% with regard to all *agricultural* land. *And*: using an estimated 30% of available freshwater resources in the process – mainly to water those feed crops.

In a practice the World Watch Institute understatedly calls an “inefficient use of grain” – and I’d call blatant disregard for the ecological rule of 10, up to 50% of the world’s corn harvest and 80% of the world’s soybean harvest is fed to chickens, pigs and cattle. Meanwhile, 1 billion out of 7 billion humans go hungry.

It would be nice to avoid a prophesy on food sustainability by *Socrates* – quote: “If we pursue our habit of eating animals, and if our neighbor follows a similar path, will we not have need to go to war against our neighbor to secure greater pasturage, because ours will not be enough to sustain us…?” end quote.

This need not happen. In 2013, the Institute of Environment at the University of Minnesota concluded that if feed crops – or tastier alternate crops I suppose - were fed directly to humans instead, *4* billion *more* people could be fed …This goes *not* to encourage even more rapid human overpopulation – a huge sustainability issue in itself – but to demonstrate the power of the rule of 10, and *our* power of cutting out unnecessary steps in our food chain.

That’s right – *unnecessary*. “Meat is not an essential part of the diet.” That’s a quote from the FAO. We may *crave* the *taste* ofbacon or chicken wings or, in my case, long-forsaken Bavarian white sausage. But a craving constitutes neither a dietary need nor a human right. Quote – from the American Academy of Nutrition: “…vegetarian diets, including vegan diets, are healthful, nutritionally adequate and may provide health *benefits*…” end quote. And a 2013 article in the medical journal The Lancet cited a diet *high* in red meat as one of the key contributors to *early death* worldwide.

As unnecessary as the consumption of animal *products* is the suffering of the tens of billions of *animals* we eat or exploit for their reproductive resources (like eggs and milk) every year. For this purpose, we subject them to the most inhumane factory farm and slaughter conditions - just so we can use ever *more* food animals, ever *more* unsustainably… Check out any of the recent W5 documentaries that managed to peak behind the industrial barn door, for the gory details. I would like to argue that one of the 3 pillars of sustainability, *social responsibility*, needs to be expanded to include concern and respect for animals *other* than just *Homo sapiens -* for a triple bottom line of environment, economics and *ethics.* By the way, a group of Camosun students has recently formed an Ethical Eating Club on campus – I believe new members are welcome.

Ok… but where am I gonna get my protein?! - Did I read your mind correctly? ☺ You mean all *55* *grams* a day recommended by Health Canada? Well, that’s easy. Your average peanut butter sandwich packs over one-fourth of that daily protein allowance, and a bowl of bean soup another fourth. You can’t avoid that stuff. Even *broccoli* is 3% protein!

Everybody has to eat. Everybody here is likely lucky enough to do it 3 times a day. We have plenty of healthy, sustainable choices of eating lower on the food chain. And we really *can* change the world one meal at a time.

So what are your *PLANTS* (with a T!) for dinner tonight? ☺

Thank you.