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A "Real" UCI Dining Experience:

A Food Systems Assessment for the University of California, Irvine

Toward a Just and Sustainable Food Plan

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Toward a Just and Sustainable Food Plan

After decades of environmental activism and debates about climate change, it seems clear that sustainability has finally become a national priority: Consumers everywhere feel the burden of rising fuel costs, and businesses and political candidates alike compete to appear the most "green." In light of this increased awareness for environmental issues, it seems strange that our food system is largely ignored in the national arena; the agricultural sector demands 19% of our nation's fossil fuel use, making it the second largest consumer of nonrenewable energy in the country. Additionally, our food system is the single largest contributor of greenhouse gas emissions, with some estimates reaching 37% of total emissions. This state of affairs has led one journalist to comment that "we are eating oil and spewing greenhouse gases" (Pollan, 2008).

Our current agricultural system depletes far more of our resources than just our fossil fuel reserves, however. Conventional agricultural methods erode soil faster than it can be replenished, pollute soil and water with synthetic pesticides, reduce biodiversity through monocultures, and use water at unsustainable rates (Cleveland, 1995; Horrigan, Lawrence, & Walker, 2002). Unfortunately, these environmental losses have a direct impact on consumer health. Massive nutrient losses in the soil have resulted in food crops that contain fewer nutrients today than they did just fifty years ago (Davis et. al, 2004). With food costs rising, many low-income families can afford to eat only highly processed, nutritionally bankrupt foods—foods which remain cheaper than so-called "whole" foods only because of large government subsidies (Halweil, 2004). This influx of processed food into the American diet has been linked to the sharp increase in many diet-related and chronic illnesses, including cancer, coronary heart disease, and Type II

diabetes (Bray, 2004; Gross, Li, Ford, & Liu, 2004; Hu, 2000). For the first time in human history, many people are overfed yet undernourished. Clearly, the way our food is produced, processed, and distributed has vast implications for both the environment and consumer health.

An Alternate Approach

Sustainable food production nourishes, rather than depletes, available natural resources. By transitioning to sustainable and organic food management practices without use of synthetic inputs such as pesticides and herbicides, yields increase up to 180 percent compared to current food production levels (Badgley, et al., 2007). Additionally, sustainable food production uses ten times less energy and water than corporate practices (Shiva, 2007). The rich soils in ecological agriculture have been found to be far more productive and less prone to disease and insect pests (Altieri, 1995, 1999; Tilman, 1999; Wolfe, 2000). Finally, sustainable agriculture works with natural processes through biomimicry, utilizing known environmental services such as predation, pollination, photosynthesis, and soil nutrient cycling (Scialabba, 2007).

Sustainable food production provides the most optimal nutrition to consumers. One study found that forty-three American crops lost at least 50% of their nutrients (including protein, calcium, phosphorus, iron, riboflavin, and ascorbic acid) from 1950 to 1999; these findings were attributed to conventional and monocultural methods of food production (Davis et. al, 2004). Meat and eggs from sustainable and humanely raised animals have been shown to contain less total fat, less saturated fat, and more omega-3s than that of animals raised in Concentrated Animal Feeding Operations (CAFOs) (Pollan, 2006).

A more ecological and community-based food system supports local economies. When consumers use their purchasing power to buy the most ecological, humane, and fair-treated food from local food producers, they strengthen their local economy rather than multinational

corporations. To date, 92 cents of a consumer's food dollar are directed toward food processors, middleman, and retailers, leaving only eight cents with actual food producers (Pollan, 2006). United States subsidies, which are amended every five years by the Farm Bill and amount to nearly $90 billion a year, create policy incentives to overproduce crops (e.g. corn and soy) that are integral ingredients in high-fat, high-sugar, processed, and inexpensive foods. Thus, the supply of local and community-based food producers, growers, and farmers have few, if any, economic incentives. Additionally, consumer demand for locally based economies is minimal (Imhoff, 2007). Today, American citizens spend a tenth of their disposable income on food, a 20% decrease from fifty years ago and less than any other industrialized nation (Halweil, 2004). Paying for the "true cost" of ecological and local food provides incentives for local production and sustains the livelihood of local communities.

"Real" Food

When food is produced, processed, and distributed in a just and sustainable way, it supports the health of consumers, producers, communities, and the environment. Some people have even adopted a name for food that attends to each of these aspects of sustainability: "real." The Real Food Challenge, a national student movement aimed at increasing the amount of sustainable food in campus dining facilities, explains "real" food in the following manner:

> Real food is food that is ethically produced, with fair treatment of workers, equitable relationships with farmers (locally and abroad), and humanely treated animals. It's food that is environmentally sustainable, grown without chemical pesticides, large-scale mono-cropping, or huge carbon footprints. Real food is food that is healthy, tastes good, builds community, and has the potential to inspire broad-scale social change. (What is Real Food?, 2008)

Institutions and Food Systems

Just as many social movements in the last century began on college campuses, so too is the movement for sustainable food gaining momentum at universities today. Students at over 300 universities have joined the Real Food Challenge in order to advocate for sustainable food at their respective campuses (Real Food Challenge, 2008). Sustainable food systems are also gaining support from college administrators and staff; many universities have established farm-to-school initiatives, campus gardens, and curriculum in sustainable agriculture. Several universities have published campus food assessments in order to analyze current dining practices and draft recommendations for more sustainable alternatives. These assessments, conducted by universities such as New York University and the University of California at Berkeley, have focused on improving food options, purchasing, energy efficiency, waste reduction, and student education (UC Berkeley, 2005; UC Santa Cruz, 2007; Rojas, Richer, & Wagner, 2008; Greening Urban Campus, 2008). Indeed, many argue that universities play a pivotal role in reshaping our food system when they choose to shift their own dining plans toward sustainable practices:

> Institutions are major players in the food system and their operations often provide producers with significant volume, as well as predictable and stable demand. Institutional purchasers have the ability to leverage their buying power to encourage multiple stakeholders in the food system to participate in developing local, sustainable food systems. (Nield, 2008)

In order to most effectively harness their buying power to shift local food systems, institutions such as the University of California, Irvine and the internal infrastructures that handle their food systems (e.g. UCI Dining) must have a thorough understanding of their current procurement practices in order to effectively make progress. All institutions, food-associated or

not, must assess their current food systems and inquire about the nature of their internal and external food communities. Institutions of higher education, in particular, are key to this process, providing the questions, research, experience, energy, and potential answers for progress.

However, few, if any, of the existing campus food assessments examine procurement data. Rather, these assessments make a broad overview of procurement, looking into such subjects as differences between organic v. non-organic campus food, food miles, food facilities' energy conservation, waste reduction, and student education (UC Berkeley, 2005; UC Santa Cruz, 2007; Rojas, 2008; Greening Urban Campus, 2008). Our study seeks to provide a more holistic approach to quantifying procurement data and assessing its implications to greater food systems and sustainability. By determining the extent to which our food is "real," we can empower stakeholders in the campus, local, and global community to act progressively in food systems education, research, policy, and application.

Objective and Methods

We aim to assess UC Irvine's food procurement data for October 2007 and October 2008. By comparing data for these two months, we will be able to examine two full, four-week menu cycles and assess any changes that have occurred in the last year. UC Irvine is home to nineteen dining locations, but we chose to limit our study to the three residential dining locations on campus: Mesa Commons, Pippin Commons, and Brandywine Commons. We do not have the necessary resources to assess all of the dining locations on campus, so we decided to focus only on those locations that serve as students' main food sources throughout the year. These three facilities serve all of the freshmen living in the Mesa Court and Middle Earth Housing Communities as well as the upper classmen who purchase voluntary meal plans. Each of these

dining facilities is operated by ARAMARK, and their Resident District Manager has granted us permission to review their procurement data for the purposes of this study.

We aim to evaluate the sustainability of each food item served in these three facilities. In order to consider the welfare of every stakeholder in our food system, we chose to evaluate food sustainability in terms of four categories: ecological soundness, community based, humaneness, and fairness. The justification for these four categories is clear: Ecologically sound food protects the planet's resources, addresses climate change issues, and provides consumers with necessary nutrients. Community-based food reduces our fossil fuel demands for transportation and supports local economies. Food that is fair and humane ensures that food producers and animals alike are treated with respect and dignity.

In order to quantify these categories of food sustainability, we will use the Real Food Calculator, a metric devised by the Real Food Challenge to evaluate institutional procurement (see Appendix). The Real Food Calculator uses existing third party certifications to evaluate each food item on the basis of the four categories mentioned above. While many third party certifications for food sustainability already exist (e.g. organic, fair trade, cage-free, etc.), none address the needs of all of the stakeholders in the food system; the Real Food Calculator is the first tool to incorporate many certifications in order to holistically evaluate a particular food system. The calculator divides foods into ten different subdivisions (e.g. produce, dairy, baked goods, etc.) and provides criteria for determining if each of these foods can be considered "real" according to the four categories we established. For example, a tomato can meet criteria for ecological soundness by being certified organic, but it can also meet criteria for being community based by being grown close to campus. Foods that meet criteria for one category are considered "real," but foods that meet criteria for more than one category are given a special

distinction. The calculator evaluates procurement in terms of purchasing dollars, and our goal is to determine the percentage of total purchasing that is directed toward “real” food. For a more detailed description of the calculator, see the Appendix.

Expected Results

Because very little research exists about university food procurement, it is especially difficult to make predictions for our study. Last year, doctoral candidate Candice Carr Kelman published a sustainability assessment for UC Irvine that included a chapter on campus dining. In her assessment, she estimated that UCI Dining spends roughly 18% of their total food budget on local food, 10% on certified organic food, and 3% on fair trade coffee (Kelman, 2008). However, we believe these percentages might overestimate the university's sourcing of "real" food; these estimates were based only on personal interviews and not on empirical data, and national projections for American universities are much lower than these estimates. The Real Food Challenge estimates that American universities spend, on average, only 2% of their total food budget on "real" food (Real Food Challenge, 2008). In light of the broken state of our global food system, we believe that UC Irvine's procurement practices are better represented by the national estimate than the figures published in Kelman's assessment. Therefore, we hypothesize that UC Irvine spends 2% of its total food budget on "real" food.

Implications

The implications for this assessment are vast. By critically examining our current food procurement practices, UCI Dining will be better equipped to make clear recommendations for progress. Additionally, this assessment will establish a baseline measure from which the university can measure its progress toward the goals of the UC Sustainability Policies; while the policy for campus dining is still under development, it is reported that this policy will contain the

Real Food Challenge goal of 20% "real" food by 2020 (University of California Office of the President Sustainable Food Systems Working Group, personal communication, August 21, 2008). Finally, this assessment will allow UC Irvine to emerge as a leader in the campus food sustainability movement. By supporting this innovative research, UC Irvine will set the standard for future procurement evaluations around the country.

Student Responsibilities

Each undergraduate researcher will be responsible for the following duties:

- Designing the study.
- Receiving mentorship from official faculty sponsor (Professor Joseph DiMento, School of Social Ecology) and meeting with him weekly during the academic year.
- Drafting the research proposal and submitting it for UROP consideration.
- Collecting the data.
- Analyzing the results.
- Writing a UC Irvine Food Assessment using the results of the study.
- Presenting findings at the California Student Sustainability Coalition in April 2009.
- Presenting findings at the Southern California Real Food Summit in May 2009.
- Presenting findings at the Center for Unconventional Security Affairs Luncheon in May 2009.
- Presenting findings at the UC Irvine Undergraduate Research Symposium in May 2009.
- Presenting findings at the UC/CSU/CCC Sustainability Conference in June 2009.

IRB/IACUC Protocols

IRB and IACUC protocols are unnecessary because our research contains neither human subjects nor live vertebrate animals.

Project Timeline

Fall 2008

- October: Draft research proposal for UROP fellowship.
- November
    - Complete and submit research proposal by November 3.
    - Begin collecting procurement data for October 2007 and October 2008.
- December: Collect all procurement data for October 2007 and October 2008.

Winter 2009

- January: Input purchasing data into Real Food Calculator metric to determine Real Food percentage.
- February: Complete analysis and begin drafting UCI Food Assessment.
- March: Continue drafting assessment.

Spring 2009

- April
  - Write Discussion, analyze sustainability implications, and provide policy and practice recommendations.
  - Present early findings at California Student Sustainability Coalition Spring Convergence, Location TBD.
- May
  - Present at Southern California Real Food Summit, UC Irvine.
  - Present at Center for Unconventional Security Affairs Luncheon, UC Irvine.
  - Present at UC Irvine Undergraduate Research Symposium.
- June
  - Present at UC/CSU/CCC Sustainability Conference, UC Santa Barbara

Itemized Budget

ITEM	COST
Research	
Reference Materials and Books	200
Phone calls/faxes to food producers/distributors ($25/month X 6 mo.)	150
Travel to and accommodation/food at food production sites*	800
Total	1150
Presentation	
Bound copies of completed UCI Food Assessment (20 pages, .05/page = 1/copy; 100 copies X 1/copy)	100
Posters, food display, and other presentation materials	50
Total	150
Conferences/Symposiums	
California Student Sustainability Convergence (Spring 2009, So. CA)	
Registration Fees Waived – Free	--
Estimated Travel, Accommodations, and Food	200
W.K. Kellogg Food & Society Gathering (Spring 2009, San Jose, CA)	
Estimated Travel, Accommodations, and Registration	350
Southern California Real Food Summit (Spring 2009)	
Facilities Rental (rooms, projectors, etc.)	50
Food Lunch and Snacks (~20 people)	200
UC/CSU/CCC Sustainability Conference (June 2009, UCSB)	
Registration Fees (75/student X 2 students)	150
Travel to UC Santa Barbara	150
Food and Accommodations (50/night X 2 nights)	100
Total	1200
Total Requested	**2500**

*Assessing UC Irvine's food system requires determining where ("community-based") and how ("ecologically-sound)" its food is produced. The majority of UCI Dining's budget is appropriated towards meats, eggs, and dairy. How "humane" are the animals providing such amenities being treated? Travel is rationed at four weekends during the academic year with average automobile rental rates ($100/weekend, 4 weekends, $400). Accommodation is at standard hotel weekend rates ($100/weekend, 4 weekends, $400)

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Appendix

Real Food Criteria

Legend
Italics = there is strong, third-party verification of claim
Plain text = no independent verification of claim
Underlined = issues with specific food products/categories
* = claim occurs in more than one column

In order for a food item to be counted as local, fair, ecologically sound, or humane, it must meet one or more of the criteria in the "Green Light" or "Yellow Light" sections for that category.

	Local	Fair	Ecologically Sound	Humane
Green Light *A clear fit* **YES**	-Scale and ownership of businesses taken into consideration -Campus has defined "local" sourcing based on regional characteristics Grown within 75 miles -Grown within the county or adjacent counties	-*Fair Trade Cert.* * -*Domestic Fair Trade Certification* (Agriculture Justice Project)	-*USDA Organic* -*Protected Harvest Cert.* -*Marine Stewardship Council* -*Biodynamic certification* -*Rainforest Alliance Cert.* * -*Food Alliance Cert.* * -*Fair Trade Cert.* * -Seafood Watch Guide "Best Choices" *	-*Certified Humane Raised & Handled* -*Food Alliance Cert.* * -Seafood Watch Guide "Best Choices" *
Yellow Light *Use caution* **YES**	-Grown within 250 miles -From the foodshed -From the bio-region -Processing done by a locally owned business	-Food Alliance Certified" -Workers belong to a union -Business/farm operates as a cooperative and/or has a profit sharing policy for all employees -*Rainforest Alliance Cert.* * --Business/farm has a social responsibility policy that includes: --Union or prevailing wages --Transportation and/or Housing support --Health care benefits for Workers	-Transitional Organic -Seafood Watch Guide "Good Alternatives" -*Salmon Safe* -Coffee: Shade-Grown, *Bird Friendly* -*Beyond Organic*	- AGA Grassfed -Pasture Raised -Grass-finished/100% Grassfed -USDA Organic -Cage-free
Red Light *No way* **NO**	-Grown more than 250 miles away -Traveled more than 250 miles away during distribution **→Up for more debate**	-Child labor -Indentured servitude -Slave labor	-Natural -GM Free/ GMO Free -Seafood Watch Guide "Avoid" -Confinement/Battery Cages	-USDA Grassfed -Raised Without Antibiotics -Natural/ Fresh -Grassfed/Grain-finished -Vegetarian Diet -Hormone Free
	-Distant ingredients locally processed -Meat raised in local confinements -Business ownership model and scale			-rBGH-free/ -rBST-free -Confinement/ Battery cages
Health Concerns If any of these ingredients are present, the food item does not count in any category.	high fructose corn syrup, hydrogenated vegetable oils, MSG, rGBH/rBST, sodium nitrate, sodium nitrite, trans-fats			

Real Food Challenge
www.realfoodchallenge.org
Developed by The Food Project and the California Student Sustainablity Coalition's Foods Initiative

food [food] n 1. something that nourishes, sustains, or supplies.
real [ree-uhl, reel] adj 1. true and actual; not artificial

Rationale for Real Food Criteria

Most of the claims and certifications listed above are discussed further in Appendix A.

Local – reduced transportation and supporting a local economy	
Green	There isn't one definition of local that will work for every region. See "Local Claims" in Appendix A below for further discussion.
Yellow	Using locally owned businesses for processing supports a local economy, even if the ingredients were purchased from a distant location. Processed items include baked goods, coffee, meat, and canned or frozen produce.
Red	Yes it is food, however we are trying to reinvigorate regional food and farming economies with this category

Fair – workers have safe conditions, reasonable hours, and fair compensation	
Green	These claims are verified by a 3rd party and do ensure that the product was produced in a socially just manor.
Yellow	Though a union usually provides better working conditions, overall union representation is a possible step for greater worker rights and protection, however we can reach further. The Food Alliance and Rainforest Alliance Certifications may not be enough to ensure that the product was produced in a socially just manor, so use caution.
Red	Unfortunately, these labor practices still exist today.

Ecologically Sound – environmentally sustainable production methods	
Green	These claims are verified by a 3rd party and do ensure that the product was produced/caught in an ecologically sound manor.
Yellow	Claims of "Beyond Organic", "Transitional Organic", and "Shade Grown" are not verified by a 3rd party, so use caution. See Appendix A below for further discussion.
Red	Claims of "Natural" or "GM Free/ GMO Free" are not 3rd party certified and are not enough to ensure that the product was produced in an ecologically sound manor.

Humane – animals can express natural behavior in a low-stress environment with no hormones or unnecessary medication	
Green	These claims are verified by a third party and do ensure that the animal was raised humanely.
Yellow	AGA Grassfed standards ensure that animals are treated humanely, however the claim is not verified by a 3rd party so use caution. The other claims listed are not verified by a 3rd party, so use caution. See Appendix A below for further discussion.
Red	These claims are not enough to ensure that the animal was raised humanely. See Appendix A below for discussions of most.

Health Concerns	These ingredients are harmful to human health.

How To Use The **Real Food Calculator**

The Real Food Calculator is designed to determine how "real" an institution's food is. Though designed for colleges and universities, this tool can be used by any institution, such as a hospital, corporation, or municipality. If you have any questions not answered by this document, please contact Amie Frisch (amiefrisch@gmail.com), or Anim Steel (asteel@thefoodproject.org).

For the purpose of this calculator, we have divided "real food" into 4 attributes: local, fair, ecologically sound, and humane. Local and fair refer to *who* produced the food, and ecologically sound and humane refer to *how* the food was produced.

Instructions

In order to use the calculator, you will need to know certain information about the food the institution purchases. First, you will need to know how much money is spent in each of the 10 different food categories, such as baked goods, meat, and produce in the past fiscal year. Second, you will need to know *who* produced the food and *how* it was produced. This information can be found either by a certification that the food carries, or by asking the distributor or farmer.

The Real Food Calculator is an excel spreadsheet with 5 tabs. The first one, titled "Worksheet" is where all the data is entered. Once the dollar amounts are filled in, the spreadsheet automatically fills in the percentages and generates the tables and graphs which are located on the tabs labeled "Tables," "Graph (1)," and "Graph (2)."

Entering Data Into the Worksheet

In the "Total" column, enter the total dollar amount that was spent in each food category in the past fiscal year. For each Real Food Attribute column (local, fair, ecologically sound, humane), enter the total dollar amount that was spent on food that qualifies for each attribute. Food items may qualify for more than one attribute. For example, an institution might purchase $1,000 total of produce. If $700 of it was both local and organic, then you would enter $700 in the local and ecologically sound columns for produce. In the conventional column, enter the dollar amount spent on food that doesn't qualify for any Real Food Attributes.

Is it "real food" or not?

For a food item to qualify for a Real Food Attribute, it must meet one or more of the criteria listed in the "Green Light" or "Yellow Light" sections in the Real Food Criteria. The criteria listed in the "Green Light" section are generally verified by a 3rd party, and easily get a yes. The criteria listed in the "Yellow Light" section are generally not verified by a 3rd party, and are open to more uncertainty. More investigation may be needed to determine if the food item should qualify for that Real Food Attribute.

Calculations

The "Calculations" tab contains the math used to generate the tables and charts. See Appendix B for a visusl explanation of the calculations used.

Understanding the Results

The calculator generates several tables and graphs. In these results, Real Food is divided into Real Food A and Real Food B. Real Food A includes food items that qualify for 2 or more Real Food Attributes, while Real Food B includes food that qualifies for just one Real Food Attribute. This distinction is made in an effort to recognize various levels of success. While the items included in Real Food B have room for improvement, it is important to recognize that progress is being made. See Appendix C for a visual example of this principle.

Frequently Asked Questions

What if I can't figure out where a food item comes from?

Sometimes it might be impossible to trace a food item back far enough to know for sure if it qualifies for any Real Food Attributes or not. In this case, assume that it falls into the "Red Light" category.

Do I have to include ALL the food that my institution purchases?

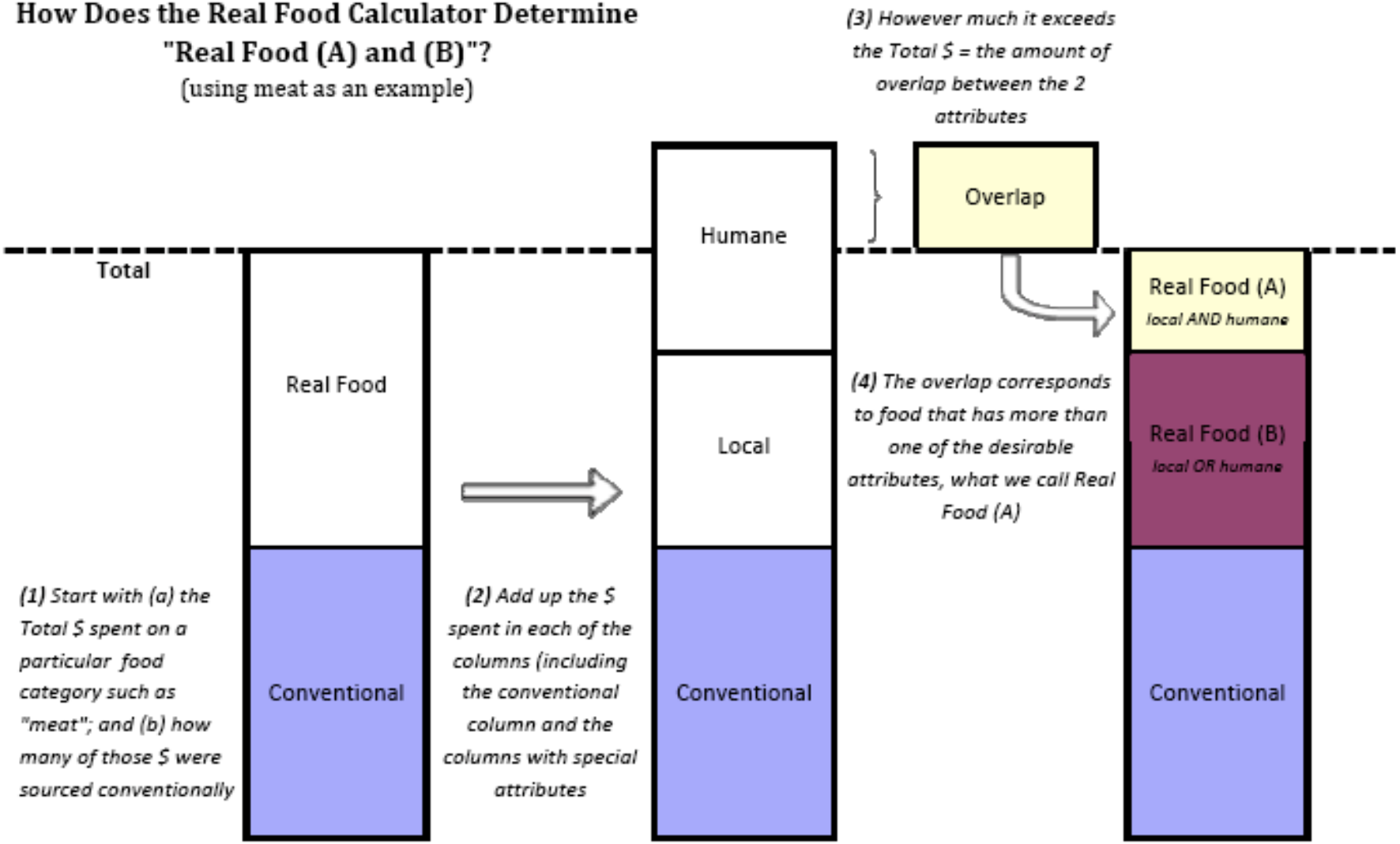
Without including all food purchases, it is impossible to accurately determine the percentage that is Real Food.

What if I have a certification or situation that is not covered in the Real Food Criteria?

We have done our best to ensure that the Real Food Criteria covers as many situations as possible. Of course, there are always individual situations that defy categorization. In this case, use your best judgment to go along with the "spirit" of the criteria. Also, please let us know what your situation is so that we can try to improve the criteria in the future.

How Does the Real Food Calculator Determine "Real Food (A) and (B)"?

(using meat as an example)



<u>What we need to know:</u>

Total $ spent

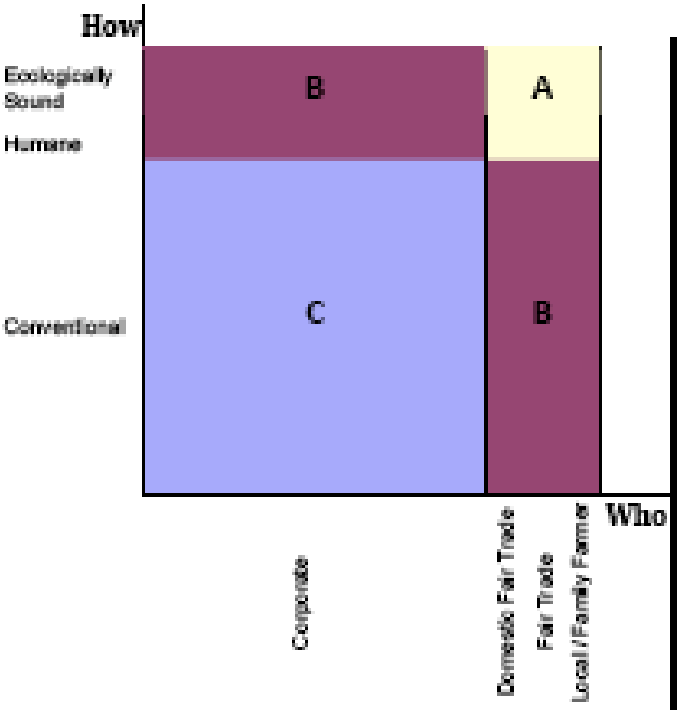
$ spent on conventional

$ spent in each of the special attributes (ex: local, humane)

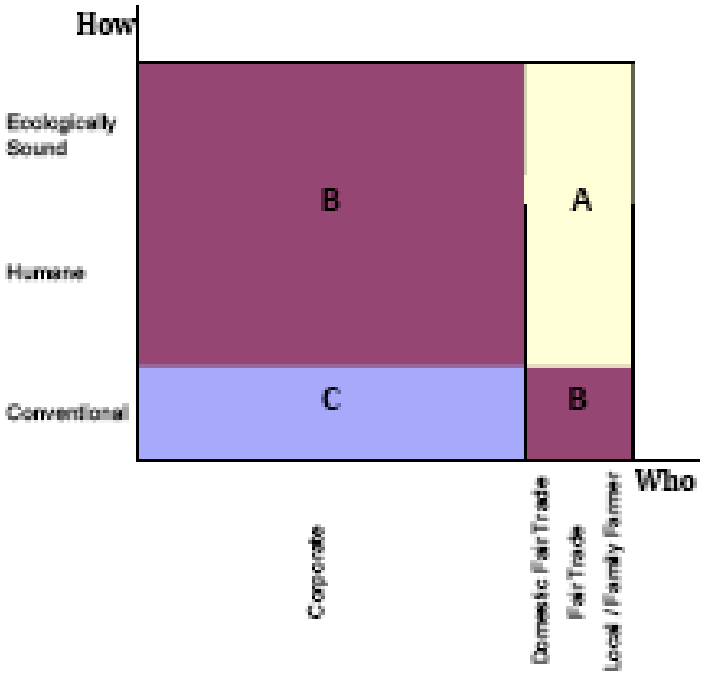
<u>The Principle:</u>

Let's not make the perfect the enemy of the good.

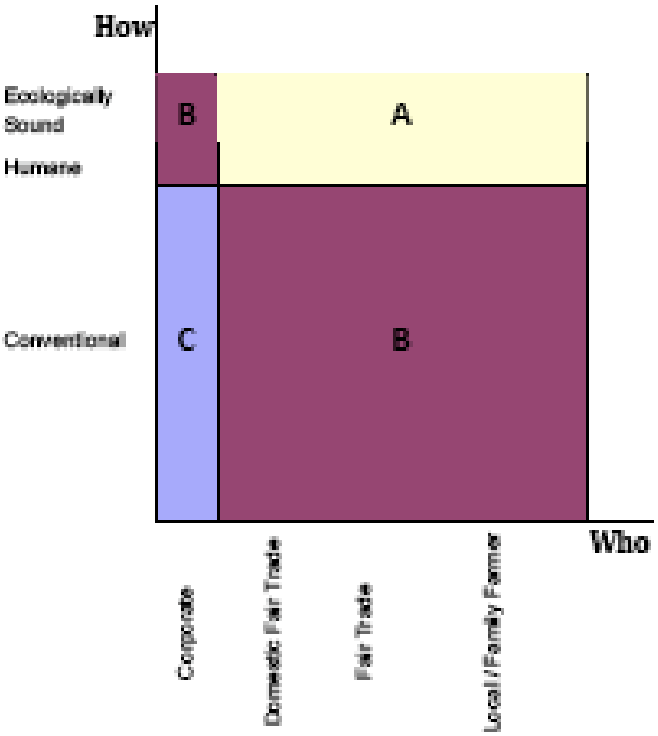
But let's not mistake the good for the perfect, either.



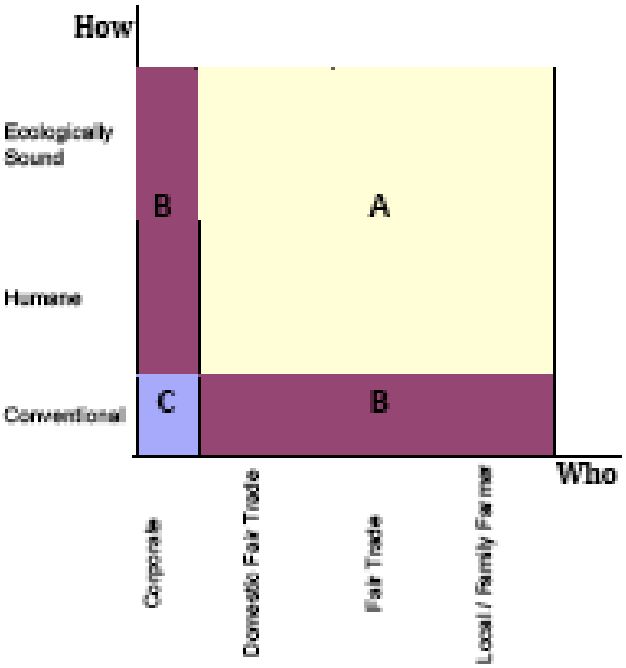
(1) The current situation.



(2) Better, but far from ideal....



(3) Also better, but not ideal.



(4) Best – what we're shooting for in the near-ish term: prioritize A, appreciate B, and accept that there will be some C. It may not be the ultimate goal, but it is more realistic over 10 years.