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Toward a Sustainable Food System *Considerations for the University of Oregon*



A report prepared by the University of Oregon
Environmental Studies Graduate Students

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Introduction



Photograph by Megan Kemple

This report was prepared by four second-year graduate students in Environmental Studies at the University of Oregon to aid Dining Services in its on-going transition to a more sustainable food system.

When we began this project, our impulse was to suggest that Dining Services focus its energy on buying seasonal, local, organic food. We soon realized that this is not an easy-to-achieve directive. Furthermore, the University was already making great strides in purchasing these types of items. Much of

the difficulty in buying seasonal, local, organic food, we learned, is that these terms are not easily defined and food systems are vastly more complex than can be encompassed in three seemingly simple words. We attended a “Local Food Connection” conference, met with food distributors in the area, interviewed individuals involved with sustainable food policies at other educational institutions, and learned firsthand about the Dining Services operations at the University of Oregon. Our conclusion is

that *there is no prescriptive means by which to achieve, let alone define, a sustainable food system.* Rather, guiding principles and key relationships can be identified to create the “web” of a food system that strives to be more sustainable. We have, therefore, compiled our research into this report to serve as an educational resource and a guide to action for the University of Oregon. Hopefully, other institutions will learn from our example and research as we have learned from others before us.

What is a Sustainable Food System

Defining a sustainable food system...

is a process that engages ethical, social, environmental, economic, and health concerns. Simply put, it is a food system that can be maintained indefinitely while nourishing the ecological well-being of individuals and ecosystems.

Growing produce and raising farm animals with the health of the ecosystem in mind is at the heart of a sustainable food system. **'Ecologically-grown'** food, such as organically-grown, is considered more sustainable because it does not degrade the soil for future uses or egregiously pollute the environment. Since 2002, the U.S. Department of Agriculture (USDA) has created a set of

standards that all domestically sold food must meet in order to be labeled organic. **'Organic food'** is defined by the USDA as food produced by farmers who emphasize the use of renewable resources and the conservation of soil and water to enhance environmental quality for future generations. Organic meat, poultry, eggs, and dairy products come from animals that are given no anti-



biotics or growth hormones. Organic food is produced without using most conventional pesticides; fertilizers made with synthetic ingredients or sewage sludge; bio engineering; or ionizing radiation.¹

It is important to note that not all farmers who use sustainable practices are labeled 'organic'. The certification process is expensive and therefore prohibitive for many smaller farmers who still remain committed to sustainable practices. Also, not all certified organic farms support the necessary components of sustainable agriculture such as crop diversity. Food Alliance, a Portland-based organization, certifies food as 'sustainable'. Their criteria for **sustainably-grown** food are guided by the following principles:

- providing safe and fair working conditions;
- consideration for the treatment of animals;
- reducing pesticide, hormone, and antibiotic use;
- avoiding the use of GMO's; protecting water and soil resources;
- protecting wildlife habitat; and
- continually improving practices to better meet the definition of sustainable.²

A sustainable food system also takes into account the rights of the people who grow food, including a fair wage and safe working conditions, along with the treatment of the animals involved in its production. It also prioritizes the health of the consumer. Furthermore, it is concerned with reducing “food miles”, or how far food travels from farm to plate. In addition, all inputs in a sustainable food system should be non-toxic and reusable or recyclable so as to minimize unnecessary waste. The following section discusses these elements and their impacts in more detail.

...Produce travels an average of 1300 to 2000 miles from farm to consumer...



Photograph by Shannon Tyman



Yale University

The Yale Sustainable Food Project was established in 2001 to gather people around shared food, work, and inquiry with the intent of fostering a culture that draws meaning and pleasure from the sustainable connections among people, land, and food. Their efforts in promoting and establishing a more sustainable food system has involved:

- directing Yale’s sustainable dining program, which includes a sustainable menu for all of the college’s dining halls;
- working closely with local farmers to support and increase the sustainable farming practices;
- developing detailed sustainable food purchasing guidelines that incorporate prioritizing the complexity and reality of the modern food system;
- managing an organic farm on campus where the community can gather to eat, work, and learn, as well as be more involved with the local farmer’s market through selling the farm’s harvest;
- running diverse programs that support exploration and inquiry related to food and agriculture.

For more information go to:

<http://www.yale.edu/sustainablefood/index.html>

Elements of Sustainable Food Systems

Though the term “sustainable” has recently emerged as a trendy buzzword...

the principles that drive efforts in sustainability are timeless. A sustainable food system has effects that resonate far and wide. Some of the main concerns that sustainable food systems address are highlighted below.

FOOD SECURITY

Food security, as defined by the Rome Declaration and World Food Summit Plan of Action, “exists when all people, at all times, have access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life.”³ The USDA calculates that, at a minimum, food security includes:

- The ready availability of nutritionally adequate and safe foods.
- The assured ability to acquire acceptable foods in socially acceptable ways (that is, without resorting to emergency food supplies, scavenging, stealing, or other coping strategies).⁴

According to the USDA, 11.9% of Oregon’s residents were considered ‘food insecure’ as of 2004.⁵ Sustainable food systems enable food security by promoting the conditions necessary to provide food for the current and future populations.

INDUSTRIAL AGRICULTURE

Michael Pollan’s discussion of the American corn industry in The Omnivore’s Dilemma popularized the problems associated with industrial agriculture. Industrial agriculture is large-scaled agriculture primarily concerned with profit. It is likened to a factory model and monocropping (single crop production) is common. Pollution associated with heavy pesticide and fertilizer use has been associated with this style of agriculture. Reduction of native biodiversity in wildlife

has also been noted where large areas of land are devoted to the production of only one crop. While some organic products are grown using

industrial agricultural models, “sustainable foods” are produced organically or use other ecological techniques that avoid these environmentally-destructive effects.

DISTRIBUTION

According to the National Sustainable Agriculture Information Service, produce travels an average of 1300 - 2000 miles from farm to consumer.⁶ Sourcing food closer to home is important to reduce pollution associated with the use of fossil fuel. Researchers at the University of Iowa found that non-local foods in the grocery



Photograph by Stacy Vynne

store can have 27 times the amount of ‘food-miles’ associated with them.⁷ Depending upon where you live in the U.S., apples produced even within the country can require 1 cup of gasoline per apple to transport, while one bunch of grapes can use up to 4 cups.⁸ Interestingly, though, a recent study found that importing apples from New Zealand to New York can have a lower environmental impact than apples grown just fifty miles away. Researchers demonstrated that New Zealand has a more conducive climate for apple production, along with energy that largely is generated by renewable resources.⁹ The controversy associated with buying local versus buying sustainably-grown foods will be further discussed in Purchasing Considerations. Here, it suffices to say that sustainable food systems attempt to take all these factors into account when sourcing food so as to make the most ecologically-friendly choice.

HEALTH

Farm worker and consumer health is impacted by the pesticides and fertilizers used to grow food. Though ‘conventional’ food items have not been conclusively linked to



Portland State University

Portland State University’s commitment to expanding their efforts in sustainability throughout their campus has enabled their food services to establish a contract with their food distributor that includes detailed sustainability requirements, including:

- maintaining minimum annual levels of Northwest food procurement, with an emphasis on foods sourced within 150 miles of the campus;
- maintaining minimum annual levels of organic food purchasing, along with increasing this purchasing by 1% each year;
- coordinating educational efforts on campus to promote understanding of sustainable food systems and health;
- adhering to the food procurement, labeling, and marketing standards developed by the Food Alliance and Monterey Bay Seafood Watch;
- participating in all PSU recycling and composting programs;
- using compostable packaging materials and non-toxic cleaning products;
- providing annual and quarterly reports on local and organic food purchasing.

For more information go to:

http://www.pdx.edu/sustainability/cs_co_food_services.html

poorer health, there is ample evidence hinting at such a link (e.g. low-levels of pesticides and cancer) and fairly solid findings which correlate soil health with plant nutritional quality.¹⁰ The United States mandates labor standards through the U.S. Department of Labor and health standards through the Occupational Safety & Health Administration. Buying food from growers who do not use inputs that are unhealthy for human or environmental health is imperative to sustainability.

Fair wages for farm workers are also a concern of sustainable food systems. Though there is a minimum wage in the U.S., farm workers are often paid per pound or bushel rather than by the hour. Therefore, it is once again important to know where food is sourced and how laborers are treated. Fair trade labels, especially relevant for long-distance sourced goods such as coffee and bananas, guarantee certain standards of farm worker rights. Fair trade is defined as: “a trading partnership on dialogue, transparency and respect, that seeks greater equity in international trade. It contributes to sustainable development by offering better trading conditions to, and securing the rights of, margin-

alized producers and workers especially in the South.”¹¹



Photograph by Shannon Tyman

ANIMAL RIGHTS

Sustainable food systems consider the rights of non-human animal life as well. Farm animals are particularly vulnerable to deplorable living conditions in Confined Animal Feeding Operations (CAFOs). Organizations such as Food Alliance include concern for both farm and wild animal welfare in their certification process. Transparency regarding the living conditions of the animals promotes ethical treatment. Farms can also offer homes to migrating and other native wildlife. In fact, 90% of threatened wildlife species are known to spend some part of their lifecycle on private agricultural land. Consumers can make a difference by supporting farms that treat animals well and provide increasingly rare habitat for other wild creatures.

The USDA estimates that 25% of American’s food waste, about 25.9 million tons, ends up in landfills every year.

FOOD WASTE

The USDA estimates that 25% of American’s food waste, about 25.9 million tons, ends up in landfills every year. Not only does this trash quickly overflow landfills, but the rotting food releases methane, which is 20 times more damaging to the environment than carbon dioxide (CO₂), according to the U.S. Environmental Protection Agency (EPA).¹² This waste can be avoided by composting food scraps, donating food to soup kitchens, and using biodegradable utensils and to-go containers. Efficiently using food and recycling waste contributes to the cycle of a sustainable food system.

COMMUNITY

A strong movement is building that promotes eating more locally grown foods. This movement has spawned a variety of approaches to doing so, such as the 250-mile diet, the 100-mile diet, and the 'one-day's-leisurely-drive' diet, along with a new lifestyle label in Webster's dictionary, the 'locavore'.¹³ The local foods movement is based on the idea that eating foods that are locally grown and processed has less impact on the environment, greater freshness, better taste, and supports the local economy, community, and culture. However, **possibly the most important reason to eat locally is the intimacy it can provide between food, community, season, and ecosystem.**



Photograph by Stacy Vynne



The Farm to College Program at the University of Montana will be celebrating its 5-year anniversary this May. Since inception in 2003, UM University Dining Services has been quite successful in its mission to support agricultural economic development through the purchasing of local and regional food. Their efforts have resulted in the following:

- hitting the \$2 million mark of locally and regionally sourced food purchased, redirecting that money back into the local economy;
- purchasing 18% of its budget from local vendors with a fiscal year-end goal of hitting 20%;
- working to change definitions of local foods to feature only Montana food producers and regional producers will be categorized as "University of Montana Sustainable" in relation to their proximity to the UM and their business practices;
- drafting the University Dining Services Sustainable Future Initiative;
- purchasing green cleaning products, fully compostable to-go containers, coffee cups, napkins, toiletry products in addition to more recycling accessibility;
- starting the 'Trayless' pilot project in an all-you-can-eat venue to help curb food waste;
- working to open a new building called 'The Think Tank' which aims to be the model for learning and living sustainable.

For more information go to:

<http://ordway.umt.edu/SA/UDS/index.cfm/page/917>

Sustainable Food & Institutions

Environmental concerns are increasingly making front-page news. With scientific research, such as the IPCC (Inter-governmental Panel on Climate Change) reports on global warming, increasingly pointing to anthropocentric causes of environmental changes, it is apparent that the decisions and subsequent actions of humans have a profound impact on the ecosystem. Institutions can play a significant role in initiating positive environmental change by directing their substantial buying power towards sustainably-produced goods, educating their employees and customers about food systems, and encouraging community involvement in sustainability initiatives.

Universities and colleges have been among the first institutions to adopt such practices. Administrations have demonstrated commitment to sustainability by signing doc-



Photograph by Shannon Tyman

**...as Brilliant
-Savarin
famously ob-
served, we are
what we eat.**

uments such as the American College & University Presidents Climate Commitment and joining organizations such as the Association for the Advancement of Sustainability in Higher Education. Students at these institutions play a pivotal role by initiating campaigns and educating their peers. Food, specifically, has played a central role in the shift towards sustainable lifestyles as more people become aware that, as Brilliant-Savarin famously observed, we are what we eat. As a result, universities around the country have begun developing exemplary food programs, a few of which are highlighted in the right margin text boxes positioned throughout this guide. These examples are but a few of the many university food systems that can inspire additional positive changes at the University of Oregon.

As an educational community, the University of

Oregon has the responsibility not only expose students to classic texts and algebra, but also to teach them how to be responsible members of society. **Just as the University educates students about gender, sex, and ethnic equality, it must incorporate a concern for our environment, health, and community into the general curriculum.** It is indeed essential to inform students of the conscientious choices Dining Services makes when purchasing and preparing food, and encourage them to get involved in their food community. Students are then much more likely to think carefully and critically about the food system in their greater community both throughout their college years and after they graduate.



Photograph by Megan Kemple



Bowdoin College

The Bowdoin Dining Services has aligned their purchasing decisions and menu preparation to the College's environmental mission statement. Their approaches to making their food system more sustainable include:

- developing their own environmental mission statement;
- working closely with over 50 local farmers and producers;
- helping to build the College's organic garden project;
- supporting pre- and post-consumer composting;
- donating excess food to local nonprofits.

*For more information go to:
<http://www.bowdoin.edu/dining/sustainable-dining.shtml>*

UNIVERSITY OF



itutional setting is challenging, yet the potential is realistic and rewarding.

Dining Services is a part of University Housing which is a self-sustaining, self-liquidating agency of the University that does not receive tuition or tax support for its operating budget. With Dining Services spending over \$5 million dollars annually on unprocessed food, the potential to be an important component of the

regional economy and contribute to students' well being through healthy and sustainable food purchasing is significant.

Dining Services currently uses many locally and regionally sourced items. These products include (but are not limited to):



University Housing Dining Services operates residential dining, catering, and conference services on campus. These include seven dining locations, a small grocery store, a catering kitchen and a central commissary kitchen. Their staff consists of three chefs, six managers, 90 full time classified staff and over 300 part-time student staff. The University residence halls house approximately 3,500 students and Dining Services prepares over 9,000 meals daily, primarily for resident students. Close to 90% of students using Dining Services use pre-purchased food plans. With this volume of customers, there is a clear need to provide quality food at affordable prices. To integrate more sustainable food policies and purchasing into this large inst-

- Allann Brothers Coffee (Albany, OR)
- De Casa Fine Foods (Eugene, OR)
- Glory Bee Foods (Eugene, OR)
- Golden Temple Granola (Eugene, OR)
- Hay Bayles Farm (Loraine, OR)
- Humble Bagel (Eugene, OR)
- Lockmead Dairy (Junction City, OR)
- Marsee Bakery (Portland, OR)
- McKenzie Mist Water (Springfield, OR)
- Northwest Natural Foods (Gresham, OR)
- Shepherd's Grain Flour and Whole Wheat Flour (Harrington, WA)
- Springfield Creamery, Nancy's Yogurt (Eugene, OR)
- Strawberry Mountain Nancy's Yogurt (Eugene, OR)
- Strawberry Mountain Natural Beef (John Day, OR)
- Surata Soy Foods (Eugene, OR)
- The Muffin Mill (Eugene, OR)
- Toby's Family Foods (Springfield, OR)
- Umpqua Dairy (Roseburg, OR)
- Wild Time Foods (Eugene, OR)
- Williams Bakery (Eugene, OR)

OREGON PROFILE



In addition to food purchasing and preparation, the following projects improve the sustainability of Dining Services operations. These include:

- Using recycled content non-bleached paper napkins in lieu of bleached products.
- Donating unused foods to Food for Lane County, the local food bank for families in need.
- Sending unusable vegetable scraps (“pre-consumer waste”) and coffee grounds to the Urban Farm where they are composted in an “Earth Tub”.
- Collecting spent fryer oil for conversion to Bio Diesel.
- Testing the use of compostable plastic ware, plates, and cups, made from corn or other products to replace traditional paper and plastic goods with the goal of creating a fully compostable waste stream in the future.
- Recycling of water in washing dishes.¹⁴

In addition to buying locally and regionally, Dining Services has also made great efforts to provide healthy foods that are sustainably produced. Some highlights include:

- Almost all of the beef purchased is raised locally at Strawberry Mountain Ranch in eastern Oregon. It is grass-fed with no hormones and no antibiotics.
- Milk and butter are purchased from local dairies and is free of antibiotics and Bovine Growth Hormones.
- Hydrogenated oils are not used for frying; instead, the University uses 100% rice oil, which is trans fat free and high in anti-oxidants.
- Both vegan and vegetarian options are offered daily and over 10,000 pounds of tofu are purchased annually.
- Cage-free eggs are offered at breakfast daily at the Fire and Spice Grill.
- All baking flour comes from Shepherd’s Grain and is locally grown wheat that is direct tilled in Oregon.
- The coffee served by Dining Services is locally roasted, organic and fair-trade certified from Allann Brothers Coffee.



Photographs by Stacy Vynne

Our Foodshed: Regional Availability of Food

The location of the University of Oregon...

in the Willamette River Basin places it squarely in an area that is often touted for its agricultural productivity. Dan Armstrong describes it in this idyllic light:

“The bioregion defined by the Willamette River watershed is one of the most bountiful in the United States. The Willamette Valley is a hundred mile long, two-million acre stretch of prime cropland bordered by a dense, eco-rich coniferous forest. The climate is mild; wet in the winter, dry in the summer.

It is excellent for raising livestock and farming, with soil particularly suited for many types of grasses and legumes. There is tremendous flexibility in what can be grown and the way that the various field crops can be rotated for the health of the land. Home to a variety of fish and other wildlife, the Willamette River basin is essentially a garden valley, Oregon’s own little piece of Eden.”¹⁵ Eugene’s bioregion thus has the potential to provide a significant amount of the produce needs of Dining

Services. The term ‘local’ is frequently delineated by an often arbitrary 100-250 mile circumference relative to a location. Yet, it is impossible to sustainably grow all crops locally during all times of the year. Dining Services will need to source from a region larger than the Willamette Valley to meet consumer

demand for products not locally available (like citrus). The map on page 13 depicts the area from which the University of Oregon might expect to regionally source food by prioritizing proximity. Later we discuss other factors that may need to be considered to maximize efforts towards sustainability such as seasonality.



Photograph by Shannon Tyman

FOODSHED APPROACH

Rather than having regional purchasing boundaries exclusively determined by proximity we prefer to use the term 'foodshed' to conceptualize the local region in which Eugene, Oregon resides. The concept of a "foodshed" is analogous to a watershed by describing the flow of food from the area where it is grown into the place where it is consumed.¹⁶ Determining appropriate boundaries of this regional purchasing system is influenced by a variety of considerations, including: soil type, climate, seasonality, accessibility, and local culture. Taking a foodshed approach can facilitate opportunities to access a variety of products, support sustainable farming operations, and define a community food network including growers, distributors, and consumers.



Photograph by Nick Koehler

**The Willamette Valley
...prime cropland
bordered by a dense, eco-
rich coniferous forest. It
is excellent for raising
livestock and farming...**

The following chart depicts the regional and seasonal availability of the top produce items sourced by UO Dining Services. It explains what is available “locally” in several ways. The blue segments represent items that are available for distribution almost exclu-

sively in Oregon. The yellow segments show items that are mainly grown in Washington and California during those months. The green segments depict items that are produced in Washington, Oregon and California at that time. Therefore, the chart illuminates the

different options for procuring food as locally as possible throughout the year. One can get tomatoes in Oregon from June through October, but must rely on sources from Washington and/or California for the extended season until December through February when they are not available in the region.

<i>Top 35 Seasonality Chart</i>												
<i>Pacific Northwest</i>												
(i.e. Northern California, Oregon, Washington)												
Product*	J	F	M	A	M	J	J	A	S	O	N	D
Apples												
Beets												
Bell Pepper												
Cabbage												
Celery												
Cucumbers												
Grapes												
Green Beans												
Leaf Lettuce												
Mushrooms												
Onions												
Oranges												
Peppers												
Potatoes												
Spinach												
Summer Squash												
Sweet Potatoes												
Tomatoes												
Winter Squash												



Purchasing Consideration

The modern food system is incredibly complex...

Consumers attempt to balance convenience, affordability, taste, freshness, and intimacy. This can lead to great confusion when trying to decide what foods to buy.

In addition, the current supermarket mentality leaves many people as far removed from the life-history of the fuel that goes in our body as the gas that goes into our cars. To further complicate matters, many of us have started to engage ethical and pragmatic concerns for the sustainability of our environment, health, and local communities in our food choices. These concerns will always be difficult to fully realize and often encourage conflicting efforts, making consumer choices even more complex. The difficult choices faced by eaters are exemplified by the current debate over the sustainability of local versus organic foods.

THE DEBATE OVER ORGANIC VS. LOCAL

Earlier in this report we mention that the organic food movement is a reaction to the use of synthetic chemicals in agriculture and livestock production, which it considers a detriment to the health of individuals (human and non-

human) and the environment. *Yet, the limited practice of organic food production in combination with industrialization has resulted in many types of organic foods being transported long distances to reach widely dispersed consumers. This has led some to accuse the organic food system to be less sustainable than locally sourced foods in terms of the carbon dioxide emissions.*

However, this contention has been countered with the rationale that associating sustainability solely with transportation distance (i.e. 'food miles') is far too simplistic, because it doesn't take into account land-use practices (e.g. water-use, cultivation and harvesting methods, quantity and type of fertilizer), energy source, type of transportation, climate, weather, or soil-type.¹⁷ Some proponents of the organic food movement also argue that the industrialization and centralization of organic food production can allow for greater effi-

ciency in food production and distribution, increased affordability and accessibility to the organic market, and ensure a considerable reduction in the impacts of conventional food production.

Though much of local food is not certified organic, some 'locavores' argue that the amount of gas to get non-local organic foods from the farm to the plate is not trivial and results in them being less sustainable than locally sourced food. Transporting foods long distances is also believed to reduce the quality and nutrition of the food. Furthermore, buying foods that are locally-produced on small farms supports the local economy and culture, which results in a stronger community. Though many of these small farms may not be organic, it is commonly argued by the local foods movement that small scale food production practices are often much more sustainable than industrial scale agriculture (organic or

conventional) and that many of them are not certified organic primarily due to the fees associated with the certification process. To locavores, a sustainable food system requires more than just replacing synthetic with organic chemicals, as often practiced in industrial organic food production. It requires a holistic approach to changing farming practices and food consumption.

This debate is not inclusive of all the ‘conflicting’ practices that could be encountered when striving for a more sustainable food system, nor does there appear to be a conclusive practice that can be considered definitively “sustainable”. Though the local vs. organic debate is considered important by some because it adds to critical discussion of what sustainability is, author Samuel Fromartz says the debate provides “false-choices”. He feels that what is important is to just be conscious of how your actions affect your health, your community, and the environment; he argues that it is essential to do anything to support sustainable practices because the “equation” that has been too long dominated by remarkably unsustainable considerations.¹⁸ These efforts shouldn’t be per-

ceived as necessarily conflicting, but exposing and transitioning us to a more sustainable lifestyle.

THE PRICE OF ORGANIC

The ‘true’ cost of food is rarely fully incorporated into the price the consumer pays. **It cannot be denied that conventional food production allows for greater efficiency at lower economic cost when measured in food quantity and time expenditure, but these metrics do not fully encompass the economic impacts of a food system.** When taking into account the externalities of industrial agriculture that result in the degradation of our environment, health, and local culture, Americans are ultimately paying a higher price for food than we see at the checkout counter. The costs associated with organic agriculture exemplify the enigma of food pricing. It is commonly thought that organically-grown food

is substantially more expensive than conventionally-grown food. To a certain extent, this is true. One of the most obvious reasons for this price difference is the cost associated with the certification process. To receive the USDA Organic Label, the ingredients of a product must be at least 95% organic according to government standards. The entire operation must qualify for organic certification by meeting certain equipment, handling and storage requirements. Organic growers and the companies that process organic foods are subject to frequent



Photograph by Shannon Tylan

inspection by certifiers and must continuously meet the strict standards set by the USDA.¹⁹ There is also a cost for applying for certification. While these costs are already inaccessible for many farmers, according to the National Sustainable Agriculture Information Service: Certification costs can be expected to rise. Certifiers must now bear the added costs of USDA accreditation. In some instances, certifying bodies have had to undergo serious reorganization to continue providing certification services. These costs will be passed on to producers and handlers in the form of higher fees. The NOP [National Organic Program] initially estimated that certification costs would average approximately \$750 per farm. However, fees charged for certification vary among agents. Fees also vary with the size and complexity of the farm operation, the costs of inspection, and other factors.²⁰ Cost-share programs have been created in some states to offset the price tag of organic certification. None has yet been implemented in Oregon, Washington or California, and there is concern that, due to the steep costs, it

will be increasingly difficult for farmers to become USDA-certified organic.²¹ Nonetheless, the cost of buying organic foods is decreasing and with demand on the rise, organic prices are expected to become more competitive with conventional products.²² This price drop is attractive to the consumer, but makes it even more challenging for organic farmers to profit from their work.

According to the USDA, “in relation to total per capita personal consumption expenditures, Americans spend the least on food” when compared to other countries.²³ This suggests that people in the United States could spend more money on food in order to account for the “true” costs and to defray the costs of certification associated with ecologically-sound growing techniques, and the economic challenges faced by small, local family farms. Transitioning to a more sustainable food system may require a financial commitment to farmers. The University of Oregon can support this transition by choosing to buy more organic and locally grown produce. The cost of produce varies dramatically with variety, season, and yearly

IT CANNOT BE DENIED THAT CONVENTIONAL FOOD PRODUCTION ALLOWS FOR GREATER EFFICIENCY AT LOWER ECONOMIC COST WHEN MEASURED IN FOOD QUANTITY AND TIME EXPENDITURE, BUT THESE METRICS DO NOT FULLY ENCOMPASS THE ECONOMIC IMPACTS OF A FOOD SYSTEM.¹⁷

weather conditions, making it difficult to offer definitive price comparisons between conventional, organic, and local produce. None-the-less, using sample produce prices from past years we have made rough estimates of expected price changes. We calculate that purchasing produce from

an organic distributor will cost an average of 41 cents more per pound. Organic prices range widely from 8-80% higher than conventional produce prices, but we estimate that the University can expect to pay approximately 33% more for organics. Purchasing from

a local distributor is expected to increase costs by approximately 14 cents per pound. If the University were to arrange to pre-order or forward contract with farmers or distributors, buy in bulk or purchase only when certain produce is in season, these prices may drop dramatically.



Photographs by Shannon Tyman

One option for making the transition to more sustainably grown food more economically feasible is to focus on foods that show the highest level of pesticides when produced conventionally. Food For Thought has generated a list of the most toxic and least toxic foods:²⁴

Top Ten Most Toxic Produce (High to Low)

1. Peaches
2. Strawberries
3. Apples
4. Spinach
5. Nectarines
6. Celery
7. Pears
8. Cherries
9. Potatoes
10. Bell Peppers

Top Ten Least Toxic Produce

1. Avocado
2. Pineapple
3. Cauliflower
4. Mango
5. Sweet pea
6. Asparagus
7. Onions
8. Broccoli
9. Banana
10. Garlic



Photographs by Stacy Vynne

In addition to prioritizing the most toxic produce, the University of Oregon could focus on buying organic produce that is more ‘cost-effective’ than other organic food items. By price and quantity, the following items offer the most “bang for your buck” when purchased organically:

- | | | | |
|---|--------------------------|----|--------------------|
| 1 | Whole Beets | 9 | Red Potatoes |
| 2 | Sweet Potatoes | 10 | Yellow Onions |
| 3 | Yukon Potatoes | 11 | Fresh Oranges |
| 4 | Lettuce Baby Mesclun Mix | 12 | Fresh Whole Apples |
| 5 | Fresh Cabbage | 13 | Baker Potatoes |
| 6 | Red Onions | 14 | Fresh Carrots |
| 7 | Broccoli Fresh Florettes | 15 | Bananas |
| 8 | Mushrooms | 16 | Romaine Hearts |

Recommendations

SOURCING

As indicated in the introduction of this report, when considering the inherent complexities to making a food system more sustainable it is not feasible to prescribe specific purchasing guidelines that can achieve complete sustainability. Many institutions have developed guidelines that intend to simplify and maximize this effort. For instance, Yale University utilizes a tier system that guides purchasing for their dining services by prioritizing foods based on proximity and ecologically conscious agricultural practices. Though such an approach is simple, practical, and rewarding, it doesn't fully engage the variety of factors that influence the sustainability of our modern food system. Ultimately the consumer decides what to prioritize on the path towards sustainability. We suggest that the Food Advisory Committee (see below) at the UO recommend a set of values of principles to guide purchasing choices for Dining

Servives. Here we present a few suggestions to assist Dining Services in making sustainable purchasing choices:

- The presence of diverse agriculture in Oregon allows the University to source many products locally. The UO should undertake a more definitive inventory to determine what products are already sourced locally and organically.

- Dining Services should evaluate its ability to buy large quantities of local and organic produce in the summer months when they are locally available and relatively inexpensive and then process and store items for use during the academic year.

- In response to the complicated nature of the local versus organic dilemma, we suggest that the University buy as much as possible from local growers whose practices are sustainable and focus on buying organic for:

- The most potentially toxic foods.

- The most economically-viable organic produce.

- Dining Services should evaluate its options to require current distributors to buy from local and sustainable producers or seek alternative distributors who are willing to do so. Dining Services could investigate the services other distributors provide with the intent of substituting or supplementing products that are purchased from its current distributors with ones that may be more sustainably procured.

- Forward contracting from local, sustainable farmers and/or distributors may dramatically increase the cost-effectiveness of buying local and organic produce while also creating a more personal relationship between the University of Oregon, the community, and the environment. The University should, therefore, explore opportunities for developing a few such relationships on an experimental basis.

FOOD ADVISORY COMMITTEE

We recommend that Dining Services create a Food Advisory Committee (FAC). The FAC would build on the current Dining Services student advisory group, but the goals and purpose of the committee would stretch beyond those of the existing group. The purpose of the FAC is:

- To educate the university community about sustainable food systems and what the UO is doing to support them;
- To provide feedback and advice from the community to Dining Services; and
- To conduct research on behalf of Dining Services.



Photograph by Steve Mital

Such an entity ensures that the interests of the residential community are conveyed, shares the responsibility of weighing difficult choices (e.g. local conventional v. organic international), and breaks up roles (e.g. individuals responsible for research, education, maintaining relationships with farmers, etc.) to enable a faster transition to a more sustainable dining experience.

The FAC should be composed primarily of students living on campus with some spaces reserved for students who no longer live in the Residence Halls. An employee of Dining Services and a faculty member should communicate frequently with the FAC, but does not necessarily need to be an

active committee member. Administrative responsibilities could fall to the Office of Sustainability.



Photograph by Megan Kemple

Ultimately
the
consumer
decides...

The chart below shows the results from an on-going on-line survey begun in fall 2004 by the Community Food Security Council (CFSC).²⁵ It highlights the importance of including a diverse group of participants in the creation, implementation, and continued management of a sustainable food system on campus.

The first steps FAC should take are to:

1. Establish a mission statement for the University of Oregon's food system;
2. Define a vision which clarifies the role of the committee and enables the group to act in accordance with an agreed upon set of principles;
3. Develop a set of achievable goals: both short- and long-term in tandem with Dining Services. It is expected that these goals will be reevaluated periodically and will continue to change as the needs of the community change. From the priorities embedded in the goals, individual roles and responsibilities can be defined;
4. Work with Housing's Living-Learning programming to create opportunities for students

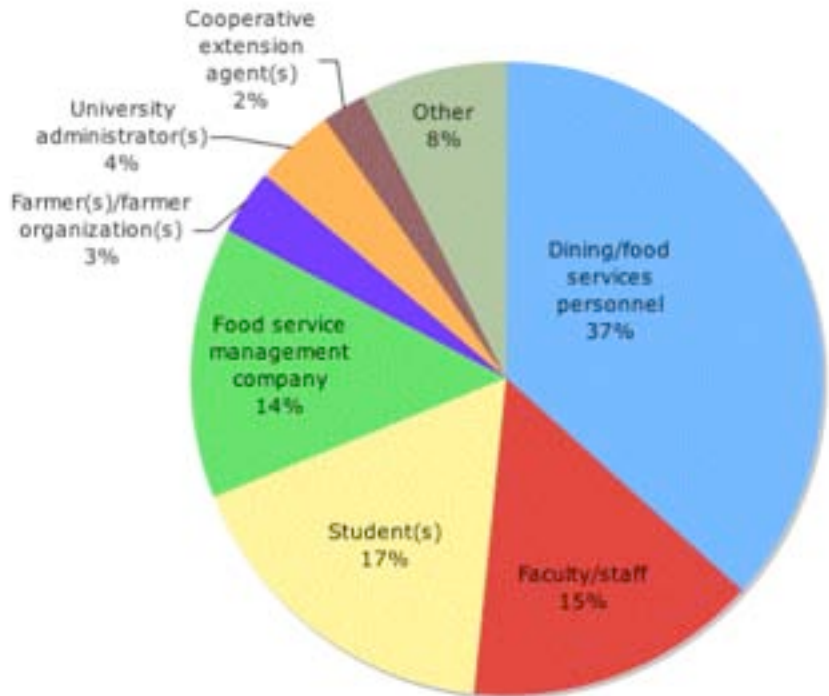
living in the Residence Halls to learn about sustainable food systems and what the UO is doing to support it.

5. Implement a monitoring and evaluation plan that will enable FAC to learn from experiences and adapt. Continuous open communication and transparency with students and the community are extremely important throughout the process to prevent misunderstandings and invite feedback.

SEASONALLY BASED MENUS

A key step in transitioning to a more sustainable food system centered on seasonal and regionally produced foods is reviewing current menus. Dining Services is striving to incorporate more seasonal items into menus, and we encourage them to continue to do so. Simple substitutions of ingredients can often have an enormous impact on the environmental footprint of a meal.

Who was most responsible for initiating your farm-to-college program?



While certain seasons may prove challenging for sourcing foods from our foodshed, the University can process foods (e.g. canning, freezing) during the time of year they are plentiful so that they can be used throughout the year (see section on food preservation below).

Students may demand products that aren't available at certain times; therefore it is essential to instigate an education and awareness campaign for students about the importance of regional and seasonally based diets. We advise that dining staff promote the efforts they are already taking and advertise menu items that feature regionally sourced, seasonal foods. As has happened at other schools around the nation, students will soon become enthusiastic about trying seasonally-based foods such as winter squash on pizza as a replacement for fresh tomato.

Dining Services currently hosts a "What's Cooking" night, in which recipes are sent in by parents and featured in the dining halls. Parents are invited to join their children for an evening of

recipes from home. The University could also host a "local farms" night in which they feature products sourced from local farms and invite the farmers in to meet with students. Such an event could educate students on the importance of sourcing food close to home, while also helping to build relationships between farmers and the University.

FOOD PRESERVATION

Currently, there are ample dry storage and freezer facilities on campus to accommodate long-term storage. Produce, such as tomatoes, could be purchased in season, processed into pasta sauce and stored to make it available throughout the year. Other opportunities for canning, freezing, and long-term preservation (such as for jams, soups, and sauces) should be explored.

In conducting research on regional food purchasing, it became apparent that the canning industry historically provided a valuable way to extend the seasonal availability of produce in the Eugene area. In the past twenty years, the canneries have closed and so local produce is no longer locally processed.

Support from the University and other local institutions and individuals could rein-vigorate this vital industry.

ON-CAMPUS FOOD EDUCATION CAMPAIGN

It is our belief that an on-campus education campaign about the Dining Services' sustainability efforts is essential to raise both the awareness and support of the student body and community at large. Dining Services is currently doing many things to be proud of, including buying locally produced foods, providing healthy options in food choices and menus, making many food items from scratch on campus to ensure freshness and quality, and considering where the meat and dairy products come from and how the animals are treated. The efforts and dedication of Dining Service go fairly undetected due to a lagging promotional or educational campaign. A sustainable food education campaign could take place both informally and formally across campus. At the very least, we feel that this information should be communicated to students through labels on food (this hummus is made fresh daily at

at a UO kitchen”), labels on menus (“cage-free eggs” or “grass-fed beef”) and perhaps posters or placards in the dining areas.

Furthermore, the University could take a more formal approach through inclusion of Dining Service efforts or issues in classes across disciplines. As mentioned above, this need could be met through Living Learning programs. In addition, Landscape Architecture’s popular course on Urban Farming teaches students to be conscious consumers as well as to grow food, and therefore could be a strong ally in the food education campaign. The Farm already uses the compost created by the raw vegetable scraps from Dining Services and requires students to eat local during part of the course. Universities such as Yale and UC Santa Cruz have used on-campus gardening/farming programs to raise awareness of food issues and to give students hands-on experience. The University of Oregon has the infrastructure in place with the Urban Farm to do so as well and it is recommended that Dining Services take advantage of this unique place.

Landscape Architecture’s popular course on Urban Farming teaches students to be conscious consumers as well as to grow food, and therefore could be a strong ally in the food education campaign.

RE-CONFIGURE CURRENT POINT SYSTEM

Dining Services currently uses a point system that doesn’t accurately reflect the actual price of an item. A point roughly translates to \$1.60 in value. Since items can only be assigned full points, they may not reflect the actual cost. A candy bar may be worth \$.75 but can’t be assigned less than a point. Cage-free eggs were introduced for an additional point over conventional eggs. They are not a popular item. We assume that students feel a full point is too high a premium to pay. Dining Services could assign higher point values to some popular conventional items (like soda) and use the additional revenue to subsidize the cost of sustainable food items. We support a re-configuration of the point system to accurately represent the price of all food items.

the price of all food items. We believe this would reduce the cost for sustainable food choices and increase their popularity.

COMPOSTABLE CUTLERY

Plastic cutlery is produced using crude oil, natural gas and a variety of other chemicals.²⁶ While regulated by the USDA for contact with food, plastic cutlery is a huge draw on the earth’s resources. In addition, plastics never fully decompose in the landfill. Biodegradable, compostable materials are becoming more accessible for institutional purchasing. However, given the range of products that are available, Dining Services needs to consider what type of product to buy (e.g. soy, potato, corn or sugar cane-based) based upon the availability of the products and which products are compatible with the planned composting system.

A critical step prior to selecting a particular product is identifying what products will work in the University's composting system. Portland State University (PSU) has conducted research on a variety of biodegradable/compostable items that work in their system. (see Appendix for approved compost items from PSU.) Rexus, a local company that composts food on a large scale has tested and approved the following products as compatible with their composting system:

- Biosak Compostable Brown Bags
- Marshall Plastic Film
- Comp-Lete™ Plastics from Fortune Plastics
- Compostable Trash Bags from Fortune Plastics
- Nature Friendly™ products
- Cereplast products
- EcoFilm/EcoWorks products
- BioTuf products.

Nature Friendly™ offers the widest range of products, all of which are compatible with commercial composting systems. (Please see the Appendix for Nature Friendly™ information) Sysco, another distributor

with a current relationship with the UO, does offer some compostable cutlery. They currently stock Eco-Product™ cutlery, which is a corn and vegetable-based product. This product is certified by the Biodegradable Products Institute as a product that will compost and biodegrade satisfactorily in an actively managed system.²⁷ The product is made from US-grown corn.

While the corn used in the Sysco products is U.S. grown, this is an issue of growing controversy. Non-food related uses of corn (example: biofuel) are

driving up the cost of corn world wide, making it increasingly difficult for the poor to afford it. The majority of products approved by PSU and Rexus, are corn based. We recommend that Dining Services pursues a transition to corn based compostables, but continues to work with Sysco to identify alternative cutlery options in the future as they become more widely available. In order for Dining Services to take advantage of compostable cutlery and cups, the composting program must be expanded to accommodate post-consumer food waste.



Photograph by Stacy Vynne

Appendix

SUSTAINABLE FOOD PROGRAMS

Berea Local Food Initiative

www.berea.edu/localfoodinitiative/

Bowdoin College

<http://www.bowdoin.edu/dining/sustainable-dining.shtml>

University of California-Santa Cruz Farm to College

<http://casfs.ucsc.edu/farm2college/index.html>

University of California-Santa Cruz Statewide Sustainable Foods Initiative

http://casfs.ucsc.edu/farm2college/foods_initiative.html

University of Montana-Farm to College

<http://ordway.umt.edu/sa/UDS/index.cfm/name/Overview>

Yale Sustainable Food Project

<http://www.yale.edu/sustainablefood>

SUSTAINABLE FOOD POLICY

Ecotrust Food and Farm Program

<http://www.ecotrust.org/foodfarms/index.html>

Food Alliance-Sustainable Food Certification

<http://foodalliance.org/certification/index.html>

Sustainable Food Policy Project

www.sustainablefoodpolicy.org

Willamette Food and Farm Coalition

www.lanefood.org

OTHER RESOURCES

FOOD for Lane County

www.foodforlanecounty.org

Locally Grown Directory - Where to find Lane County Foods and Wines

<http://www.lanefood.org/content/cp-3-fooddirectory.htm>

Portland State University

Goals for Sustainable Food System Practices

- 1) Utilize sustainable, “green” cleaning products
- 2) Coordinate education efforts, each Academic Term , to promote awareness and understanding of sustainable food systems and nutrition.
- 3) Maintain minimum annual levels of local food procurement (local to be defined as products grown and processed in the Northwest (Oregon, Washington, Idaho, and Northern California) with an emphasis on Oregon and Washington grown and processed products within a 150 mile radius of the campus). We strive to exceed these minimums to the fullest extent economically possible:
 - i) 30% annual average of total cost of sales, increasing at a rate of 2% per year
 - ii) 39% annual average of fruits and vegetables purchased, increasing at a rate of 2% per year
 - iii) 100% milk and dairy products
 - iv) 100% eggs
 - v) 50% flour purchased, increasing when economically viable
 - vi) 50% beef purchased, increasing when economically viable
 - vii) 15% poultry, increasing when economically viable
 - viii) 30% pork, increasing when economically viable
 - ix) 100% salmon and tuna procured in accordance with the Monterey Bay aquarium “seafood Watch” sustainable fisheries guide.
- 4) Meet the standards equivalent to the Food Alliance in regards to food procurement labeling, and marketing of all locally grown and organic foods.
- 5) Provide annual and quarterly reports documenting the actual percent of total cost of sales that are local and the average percentage of locally sourced fruits, vegetables, dairy, flour, eggs, beef, pork, chicken, and fish.

- 6) Provide annual and quarterly reports documenting the actual percent of total costs of sales that are organic, maintaining minimum, annual levels of organic foods procurement of 10%, increasing at a rate of 1% per year.
- 7) Comply with the participate in all present and future campus recycling and composting programs.
- 8) Assist and comply with City of Portland's 50% waste reduction requirements by placing a strong emphasis on waste reduction.
- 9) Assist in participating in City of Portland's pre- and post-consumer food waste diversion polices and programs.
- 10) Work in tandem with PSU Recycles! (PSU's campus recycling program) to quantify and characterize the waste stream through periodic waste sorts.
- 11) Provide and collect materials from recycling bins for all catered events that serve beverages or other items in recyclable containers.
- 12) Use earth friendly "to-go"/catering food containers:
 - i) Use paper "to-go" food containers (which are unbleached and contain high levels of recycled content) or biodegradable containers at all food service locations.
 - ii) Prohibit the use of plastic and Styrofoam in the form of cups, plates, bowls, and other to-go food containers.
 - iii) Strictly limit the use of plastics to "to-go" flatware utensils only, with a commitment to explore the future use of biodegradable flatware options.
 - iv) Take efforts to maximize opportunities to reduce overall packaging required for food (i.e. use of paper wraps rather than traditional "to-go" containers that are bulkier and take longer to compost).
 - v) Use paper napkins made with high levels of post-consumer recycled content.

Produce Seasonality Chart												
Pacific Northwest												
(i.e. Northern California, Oregon, Washington)												
Product	J	F	M	A	M	J	J	A	S	O	N	D
Almonds												
Apples												
Apricots												
Apriums												
Arugula												
Asian Pears												
Asian Greens												
Asian Vegetables												
Asparagus												
Avacado												
Basil												
Bamboo Shoots												
Beans												
Beets												
Bell Pepper												
Blackberries												
Blueberries												
Boysenberries												
Bok Choy												
Broccoli												
Brussel Sprouts												
Burdock												
Cabbage												
Cactus Pads												
Cactus Pears												
Cardoons												
Carrots												
Cauliflower												
Celeriac												
Celery												

Product	J	F	M	A	M	J	J	A	S	O	N	D
Chard												
Cherries												
Cherimoyas												
Collard Greens												
Corn												
Cranberries												
Cress												
Cucumbers												
Currants												
Dandelion Greens												
Dates												
Eggplant												
Endive												
Fava Beans												
Fennel												
Figs												
Garlic												
Goose Berries												
Gourds												
Grapefruit												
Grapes												
Green Beans												
Green Garlic												
Green Onions												
Guava												
Hazlenuts/Walnuts												
Herbs												
Horseradish												
Jerusalem Artichokes												
Jujubes												
Kale												
Kiwi												

Product	J	F	M	A	M	J	J	A	S	O	N	D
Kumquats												
Kohlrabi												
Leaf Lettuce												
Leeks												
Lemons												
Limes												
Loquats												
Mandarins												
Marionberries												
Melon												
Mulberries												
Mushrooms												
Mustard Greens												
Nectarines												
Nettles												
Okra												
Olives												
Onions												
Oranges												
Parsnips												
Peaches												
Pears												
Peas												
Peppers												
Persimmons												
Pistachios												
Plums												
Pluots												
Pomegranates												
Pomelos												
Potatoes												
Pumpkins												
Purslane												
Quince												

Product	J	F	M	A	M	J	J	A	S	O	N	D
Radishes												
Rapini												
Raspberries												
Rhubarb												
Rutabagas												
Salsify												
Shallots												
Spinach												
Strawberries												
Summer Squash												
Sunchokes												
Sweet Cherries												
Sweet Corn												
Sweet Potatoes												
Tangerines												
Tayberries												
Tomatillos												
Tomatoes												
Turnips												
Walnuts												
Winter Pears												
Winter Squash												

Produce Seasonality Chart

Oregon

Product	J	F	M	A	M	J	J	A	S	O	N	D
Apples	■	■	■	■	■			■	■	■	■	■
Apricots							■	■				
Apriums							■	■				
Arugala				■	■	■	■	■	■	■		
Asian Pears	■	■	■								■	■
Asian Greens				■	■							
Asian Vegetables				■	■							
Asparagus			■	■	■							
Basil						■	■	■	■			
Beans												
Beets	■	■	■		■	■	■	■	■	■	■	■
Bell Pepper							■	■	■	■		
Blackberries							■	■	■			
Blueberries							■	■	■			
Bok Choy				■	■	■	■	■	■	■		
Broccoli						■	■	■	■	■		
Brussel Sprouts								■	■	■	■	
Burdock	■	■	■						■	■	■	■
Cabbage						■	■	■	■	■	■	■
Cardoons								■	■	■	■	■
Carrots							■	■	■	■	■	■
Cauliflower			■	■	■		■	■	■	■	■	■
Celeriac	■	■	■	■	■							
Celery									■	■	■	
Chard					■	■	■	■	■	■	■	
Cherries						■	■					
Collard Greens			■				■	■	■	■	■	■
Corn							■	■	■	■	■	
Cranberries										■	■	
Cress				■	■	■	■	■		■	■	

Product	J	F	M	A	M	J	J	A	S	O	N	D
Cucumbers												
Dandelion Greens												
Eggplant												
Endive												
Fava Beans												
Fennel												
Garlic												
Goose Berries												
Grapes												
Green Beans												
Green Garlic												
Green Onions												
Hazlenuts												
Herbs												
Horseradish												
Jerusalem Artichokes												
Kale												
Kiwi												
Kohlrabi												
Leaf Lettuce												
Leeks												
Marionberries												
Melon												
Mushrooms												
Mustard Greens												
Nectarines												
Onions												
Parsnips												
Peaches												
Pears												
Peas												
Peppers												

Product	J	F	M	A	M	J	J	A	S	O	N	D
Persimmons										■		
Plums								■	■			
Pluats								■	■			
Potatoes	■	■	■				■	■	■	■	■	■
Pumpkins										■	■	■
Radishes				■	■	■	■	■	■	■		
Raspberries						■	■	■	■			
Rhubarb				■	■	■	■	■				
Rutabagas	■	■	■							■	■	■
Salsify	■	■	■							■	■	■
Shallots							■	■	■	■	■	■
Spinach					■	■	■	■	■	■	■	
Strawberries						■	■	■	■	■		
Summer Squash						■	■	■	■	■		
Sunchokes	■	■	■							■	■	■
Sweet Cherries						■	■					
Tomatillos								■	■	■	■	
Tomatoes						■	■	■	■	■		
Turnips	■	■	■							■	■	■
Walnuts	■	■	■	■	■	■	■	■	■	■	■	■
Winter Squash										■	■	■

Notes

¹ U.S. Department of Agriculture. Agricultural Marketing Service. <http://www.ams.usda.gov/nop/Consumers/brochure.html>.

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¹⁰ *Time Magazine* <http://www.time.com/time/magazine/article/0,9171,1595245,00.html>

¹¹ This is currently the most widely recognized definition of fair trade and was created by FINE, an informal Association of the four main Fair Trade networks (Fairtrade Labeling Organizations International, International Fair Trade Association, Network of European Worldshops and European Fair Trade Association). Fairtrade Labelling Organizations (FLO) International. http://www.fairtrade.net/faq_links.html?&no_cache=1.

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UNIVERSITY OF OREGON