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Joan E. Gross Garry O. Stephenson

As recent interest has grown in the connections between how food is produced, distributed and consumed, and the overall health of food systems for people and the environment, a movement toward localizing food systems has emerged. In Lincoln County, Oregon, citizens, restaurateurs and university extension faculty, among others, have started to examine ways a more locally based food system can be encouraged and strengthened. However, this research assessing the current Lincoln County food system quickly indicated that very little food consumed in Lincoln County was produced there. Where are the farmers of Lincoln County?

This research uses qualitative and historic data to analyze Lincoln County's present and past farming and food system. The analysis indicates there are two major types of farmers extant in the area: the "old pioneers" with large acreages and family connections dating back to the homesteading period, and "new pioneers" with smaller acreages who grow food either for subsistence or for specialty markets. This typology arises from adaptive strategies: one to the conditions of an increasingly industrializing food system in rapid transition at mid 20th century, and the other adapting to new niches created as a result of gaps in a large-scale, globalizing food system.

Historic records show a much stronger local food system during the first half of the 20th century, complete with processing capacity such as creameries and canneries. To illustrate the change that has occurred, this analysis uses Iowa as a paradigm-setting place of agricultural perfection with which a distinctly *un-Iowa* place like Lincoln County could not compete. Smallholding farmers either consolidated landholdings or left farming due to economic pressures resulting from the industrialized feedback loop of increasing production and declining value of food commodities which came to characterize the trajectory of American agriculture post World War II. Therefore, planning a localized food system in Lincoln County in the present ought to more properly be considered relocalization. The past conditions of agricultural production and processing in Lincoln County may provide a useful frame of reference for the transition from a cheap energy large-scale food system to one that is thriftier and smaller-scale.

Reclaiming Space for Small Scale Agriculture in Lincoln County, Oregon

by

Kimberly A. Gossen

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APPROVED:

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Co-Major Professor, representing Applied Anthropology

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Co-Major Professor, representing Applied Anthropology

_____

Chair of the Department of Anthropology

_____

Dean of the Graduate School

I understand that my thesis will become part of the permanent collection of Oregon State University libraries. My signature below authorizes release of my thesis to any reader upon request.

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Kimberly A. Gossen, Author

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We had entered an era of limitlessness, or the illusion thereof, and this in itself is a sort of wonder. My grandfather lived a life of limits, both suffered and strictly observed, in a world of limits. I learned much of that world from him and others, and then I changed; I entered the world of labor-saving machines and of limitless cheap fossil fuel. After that, it took me years of reading, thought, and experience, to learn again that in this world limits are not only inescapable but indispensable **(Wendell Berry, Renewing Husbandry, 2005:1104).**

CHAPTER 1: FARMING IN LINCOLN COUNTY?

The tentative nature of farming in Lincoln County seems to invite the question that serves as the title for this introduction. In Lincoln County, at the western edge of the North American continent, commercial farming is not very noticeable. This is especially true along the coastline where the majority of residents live. This question became a theme for me because soon after beginning my research on the food system of Lincoln County it became apparent that there were very few people farming in the county as a serious livelihood.

Then, why study farming in Lincoln County? From a practical standpoint, this research project was part of the resetting of priorities of agricultural outreach efforts to promoting connections between local farmers and restaurants by the new staff chairperson of the Lincoln County office of the Oregon State University (OSU) Extension Service. This research was initially intended to assess the function of the current food system, particularly related to local agricultural production. I began by conducting interviews with many actors in the food system from grocery store managers to restaurateurs, with a focus on farmers, the people who grow and sell or share food with others. That phase of the research indicated local agricultural production was at low ebb. Consequently, the study shifted to include a strong historical component to look at what the food system once was; this led in turn to trying to answer the obvious question that emerged, why are there not more farmers *now*?

An assumption underlying this research is that agriculture is important, wherever, or however it is practiced, even in places that some might consider marginal for agriculture. Because the paradigm of successful farming in the United States is conditioned by the kind of large-scale agriculture practiced in the Midwest, that is, by commodity-oriented agriculture, I see a need to reclaim and defend an ideological space for small-scale farming. Smallholder agriculture is not sprawling, it is intensive and *small* in scale. Scale is important and need not be seen as an impediment to strong production. I offer present-day examples in Lincoln County of such intensive small scale agriculture that demonstrate surprisingly large yields. The high yield intensive

small farming system seems counterintuitive, perhaps, if one is under the sway of prevailing notions biased in favor of commercial operations that are large in scale; as if bigger and better were synonymous. Such prevailing paradigms of industrialization in the 1940s led at that time to the marginalization of smallholders in Lincoln County and all over the world. What were the changes in farming techniques that led from small scale intensive farming as the dominant form of agriculture to industrialized agriculture?

When and why settled agriculture arose in human history are the subjects of debate, however there seems to be little disagreement that the practice of settled intensive agriculture makes possible higher levels of human population than strictly hunter-gathering societies could ever support (Vasey 1992). The invention of techniques such as irrigation, use of implements, and selective breeding for desirable characteristics by early agriculturalists resulted in higher yields from crops and domesticated animals. In that sense, industrial based agriculture fueled by the Green Revolution can be viewed simply as another instance of changing techniques leading to increased food production overall.

In discussing industrial agriculture I am taking that term to approximate Thomas Lyson's definition of what he calls "conventional/commodity agriculture," which he says,

> Represents a set of practices, procedures, and techniques that are designed to produce as much food and fiber as possible for the least cost. The underlying biological paradigm for conventional/commodity agriculture is experimental biology, while the underlying social science paradigm is neoclassical economics (Lyson 2007:20).

Taken from this perspective, industrial agriculture is not just a set of practices on the farm but is also connected to economic conditions and calculi far beyond the farm. Because of the 'fluidity' of both fuel and capital, industrial agriculture renders capital and energy partly synonymous because it is through capital that fossil fuel enabled inputs are purchased (Vasey 1992).

Through the use of fertilizers and pesticides, high input, industrial agriculture actually increases the net primary productivity of an ecosystem. Irrigation also has this

same effect of increasing the relative metabolism of a system toward higher levels of productivity (Vasay 1992). Yet this example of increased water availability, in contrast to petroleum availability, highlights the point that one of the most fundamental divisions between preindustrial and industrial agriculture is that the former utilizes resources *from within* certain geographic boundaries while industrial agriculture is not similarly limited to resources within a certain physical space. Unlike in preindustrial agriculture where reliance was on human labor and solar energy, and perhaps draft animals, industrialized agriculture uses energy captured outside of the system, most commonly in petroleum, to do work within it.

Cultural ecologist Robert Netting describes intensive agriculture as the increased supply of "naturally existing sources" of nutrients, water and sunlight in support of biotic growth and the maintenance and replenishment of good growing conditions over an extended period of time (Netting 1993:28). While industrial agriculture is characterized by intensivity – the increased use of inputs in order to increase productivity – it is not necessarily by way of sources existing in proximity to the farm. Netting also makes the point that the progression from digging stick to plow to John Deere Tractor does not necessarily represent stages in increased intensification:

> One can use each of these tools either in a manner that economizes on resources and energy or for food production that is extensive and wasteful. Intensification, as I shall suggest, is alive and well, and it does not require a technological breakthrough to introduce it to a waiting world (Netting 1993:29)

In fact examples of intensive agriculture have been found all over the world at various times, thus negating a unilineal model of technological development (Netting 1993).

A modern irrigated wheat field is one example then of industrial-style agricultural intensification. Because the water and watering equipment are expensive, more fertilizer tends to be applied in order to recover the watering costs. In such systems, intensification thus leads to more intensification "because of the need to maximize the return on the first set of inputs, and because the removal of one limiting factor generally makes some other factor limiting and subject to alleviation" (Vasey 1992:45). This phenomenon of one change acting to amplify another change is an example of positive feedback to which Vasey, an ecologist, likens "revolutions" of all

kinds, such as the Green Revolution. Convincing examples of this kind of feedback are provided by Kramer's insightful descriptions of three different American farming systems in the 1980s: a successful New England dairy, a conventional Iowa corn-soybean-hog family farm and a large corporate California farm. Of the Iowa farmer Kramer writes:

> Joe is interested in good land. He is hurting financially, and for modern large-scale farmers, the way past financial troubles is further expansion. Since 1950 the average Iowa farmstead has increased its acreage by more than 50 percent. To survive is to get bigger. Growth, in farming, comes via a sort of economic rocking motion. Bigger equipment increases the acreage, bulk of crop, number of animals that each farmer can handle. The big rigs can cover more ground; and they also demand more ground to amortize their high cost (Kramer 1987:114).

Positive feedback appears to be built into these systems: to be successful, farmers must keep up with the "improvements" made by their neighbors; if one's neighbor breeds his cows for higher milk-production, the next had better do the same. In essence, conventional farmers have been the victims of their own success since demand, at least until recently, has not kept up with supply, resulting in a decline in real prices for agricultural commodities since the mid 1940s (Gardner 2008). The domestic farming situation has, at least since World War II, been characterized by competition, ever-increasing production, ever-increasing mechanization and high inputs from outside the system. Of course, "ever-increasing" is a relative term and there are many critics of these intensive, energy hungry farming systems who point out their inherent unsustainability (Odum and Odum 2006, Kimbrell 2002, Matson, et al. 1997, Kloppenburg et al. 1996).

Lincoln County, by virtue of its geographic 'edginess' and modest amount of flat land suitable for agriculture, has not kept pace with the changing farming times. Farmland in Lincoln County does not produce even as much food as it did *before* the Green Revolution began. How industrialized agriculture's positive feedback loop of increasing production in distant places has affected Lincoln County is the major theme of this thesis. Chapter 2 provides a summary of the ecological and human demographic aspects of Lincoln County related to food consumption, distribution and production. It

offers a present-day profile of Lincoln County from the perspective of food resource availability and utilization. This chapter provides a modern context for the following chapters which describe in greater depth the current and historic conditions of food production in this place on the Pacific coast of Oregon which, from the beginning, had been an outlier of sorts, distant from any major metropolitan areas even by Oregon standards. Chapter 3 details the research methods I used to assemble and analyze all of the information gathered while conducting this study.

Chapter 4 offers a characterization of present and past agriculture in the county, relying mainly on official statistics provided by US censuses of agriculture and the Oregon Agricultural Information Network as well as photographs and archival newspaper accounts about the local area provided by the Lincoln County Historical Society. As a place on the outer edge of the west, European-American pioneers only arrived here after the 1860s. There are accounts of homesteading going on until at least the early part of the 20th century. Originally a portion of adjoining counties, Lincoln County was not established until 1893. While other places in the US were well-established, Lincoln County was still becoming a bona fide place on the map in the early part of the 20th century and was perhaps particularly sensitive to outside influences on its development. Today Lincoln County's main agricultural products are timber and nursery stock. Beef cattle production remains one of the few noticeable forms of food production in the county because many rural residences maintain a few cattle.

Based on interviews, Chapter 5 offers present day qualitative descriptions of 24 modern-day Lincoln County farmers. These interviews revealed two main types of farmers: larger "old pioneer" landowners whose forebears homesteaded land in Lincoln County and smaller "new pioneers" who arrived more recently. The large landowners have family roots in the county and mainly raise beef and sell timber episodically as an adaptation to the transformation of agriculture around the middle part of the 20th century. These larger farmers mainly find markets for their beef at auction in the Willamette Valley or from a wholesale buyer; in either case the destination is likely the same, the cattle are shipped via rail to Midwestern slaughterhouses. More of the farmers I interviewed have smaller acreages and tend to be, if not newcomers to

farming, at least newer to it in the area than the large landowners. These smaller farmers intensively manage their small acreages and find outlets for their production in local niche markets such as restaurants and farmers' markets. Notably, these marketing niches themselves are relatively new additions to the food system.

Chapter 6 discusses the four main themes I believe help explain why agriculture in Lincoln County declined following World War II. These interdependent factors are a mixture of biophysical and socio-cultural limitations, such as low summer temperatures, the comparative advantage of growing conifers as opposed to food crops and distance travelled to market. All of these factors existed from the beginning and all continue to challenge would-be commercial food producers in Lincoln County. However, evidence for a stronger local food system in the early to middle 20th century is compelling. According to the 1940 Census of Agriculture, the number of farms in Lincoln County peaked at 972 (U.S. Department of Commerce 1943). A land use study of Lincoln County conducted in the early 1940s stated, "Agriculture and grazing are the oldest industries of the county and, at present, are second only to forestry in importance" (Wakefield 1942). Conditions arising in the 1940s and 1950s brought about major changes in agriculture in Lincoln County, but unlike many other regions of the United States, this process of decline in farming was not related to strong land use pressure from urbanization.[1] Though the biophysical and social factors intrinsic to Lincoln County are important, they are only part of a larger story that unfolded in the past century to create the type of agricultural pattern seen in Lincoln County in 2007.

Chapter 7 continues the investigation, turning the lens outward to focus on the paradigm that underlies the transformation of agriculture in Lincoln County and beyond. The form and origin of that paradigm are written in the history of Iowa, a paragon and then paradigm of industrialized agriculture. As the tangible results of the 'growth without limits' mindset manifested: as economies of scale, comparative advantages, and Green Revolution technologies yielded the efficiencies and

[1] Although some farmland was converted to the zoning category of rural residential over time, the important point here is that farmland, crop or pastureland with the potential to grow food or raise livestock, has not been lost from the agricultural base in Lincoln County to a significant extent.

concomitant growth in production desired, it became the obvious choice, the de facto paradigm for agriculture all over America and then the world. As discussed earlier in this chapter, cheap petroleum makes possible this inherently unsustainable model of industrial agriculture. Increasing production in places amenable to large-scale systems of agriculture, such as Iowa, united with industrial scale processing and transportation systems, allowed products from farther and farther away to squeeze out local competition in various localities. Local smallholders, whether in rural Africa or rural Oregon, were displaced from subsistence farming in this process; here in Lincoln County they may even have died out completely for a time.

By all appearances, however, the smallholder is back! As of the year 2008 it seems that small farmers have found new opportunities and new markets for selling in Lincoln County; and for growing. In addition to a desire for fresh food, grown sustainably, it is the dawning on the modern consumer's consciousness of the inextricable link between the farmer's activities of production and sale that has fueled the rising local food tide which lifts all boats. Voting with their pocketbooks, consumers are actively fostering a local food system.

CHAPTER 2: ENVIRONMENTAL AND SOCIAL SETTING OF LINCOLN COUNTY'S FOOD SYSTEM

Justifying a County Level Food System Analysis

A food system is a nebulous concept, therefore, various authors have offered terms to help better imagine what, particularly a local food system, actually is or could be. Kloppenburg et al. introduced the concept of the *foodshed* as a useful unit of analysis similar to a watershed:

> We offer the term "foodshed" to encompass the physical, biological, social, and intellectual components of the multidimensional space in which we live and eat. We understand the foodshed as a framework for both thought and action. If our use of the term has any virtue, perhaps it is to help people see the relatedness of apparently disparate elements, and to perceive the complementarity of different but parallel initiatives for change. We also think it is useful to make a clear semantic distinction between where we are now and where we wish to be in the future (1996:41).

While I appreciate the reasoning behind introducing such a term, I prefer simply "food system" to foodshed because of the imagery evoked. A food system seems more akin to an ecosystem whose boundaries are flexible and occur gradually, unlike a watershed, which is really quite a discreet entity due to the nature of water and the action of gravity on water. That is not like humans or our interactions with food – we and our food move around frequently, and over vast distances these days. Whether we call it a foodshed or a food system, the concept of ecology, and therefore interactions between things, is important. In the case of this particular study, Lincoln County was chosen as the unit of analysis arbitrarily in the sense that county boundaries are arbitrary. Making an arbitrarily chosen boundary for a food system seems appropriate since the only true boundary to the food system writ large is the earth: the sum total of all production, distribution and consumption of food by humans on earth. And yet a county, and therefore a county food system, has a legitimate reality as a result of political allegiances and structures organized at the county level which serve to channel resources in certain ways and not in others. For example, Lincoln County Food Share brings emergency food to the people of Lincoln County, and not to Polk County. In

addition, information that I used to analyze the food system of Lincoln County was aggregated at that level; not only Census of Agriculture data but also literature on the history of the county.

That the food system has become a globally integrated system particularly in the last 60 years is the source of increasing concerns from many quarters as issues of energy and attendant pollution from using nonrenewable energy sources become more obvious through the effects of global warming and sticker shock at the gas pump. When I refer to Lincoln County's food system, I am thinking of it as an odd sort of biological cell – stuff moves in and out all the time, but there is also an internal coherence. For example, farms tend to have some integration with the community wherein the food they produce tends to go to those nearer than farer. Due to its geographic isolation, Lincoln County is perhaps slightly more self-contained than a lot of counties in this way; it just happens that its metabolism is at low ebb. It is currently not producing as much food in general or for locals as it once did. The vast majority of food is coming into the system from other places due to forces of industrialization and modernization of the food system in the past century. As Kloppenburg et al. point out, "What is eaten by the great majority of North Americans comes from a global everywhere, yet from nowhere that they know in particular" (1996). It is from a flexible cell frame of reference that I present the information in this chapter on the structure and function of the food system of Lincoln County. Subsequent chapters focus in progressively on the terrestrial production side of the food system.

Environmental Setting of Lincoln County

Lincoln County occupies an area of 992 square miles on the central coast of Oregon. This western edge of Oregon is dominated by the conifer forested mountains of the Coast Range and bounded to the west by the Pacific Ocean. These features--mountains and ocean--interact to create the unique physical conditions and abundant microclimates of this area affecting farming and other land uses. Soil scientists have classified over 65 different soil types in the area of various textures, capacities for drainage and susceptibility to compaction (Shipman 1997). Soils are generally deep but

many are subject to the limitations of wetness and coolness characteristic of this region. The change in elevation from ocean headlands to interior mountains creates a gradient in precipitation, increasing from some 90 inches at Cape Perpetua annually to 120 inches eastward in the mountains. The rugged northeastern part of the county has one of the wettest climates in the continental United States with nearly 200 inches of rain in some years. Ample precipitation, maritime temperatures, topography and soil parent material have combined to form ideal conditions for fast-growing Douglas fir, hemlock, and spruce trees. Douglas fir is a particularly important timber species to the local economy but also has international significance in the wood products market. About ninety percent of the county is used for timber production (Shipman 1997).

Ocean breezes moderate summertime temperatures causing distinct variations from cooler on the coast to more continental in the valleys of the Coast Range (Shipman 1997). Twenty to thirty degree differences in the summer between the coast and the Willamette Valley are not uncommon. This difference in summer temperatures matters to farmers in the area because plants have species-specific cumulative temperature requirements; these requirements can be calculated and are known as “heat units.” Farmers in Lincoln County frequently mention cool temperatures in the spring and low heat units as a limiting factor in production. Winter temperatures are less distinct between the coast and interior but average temperatures are lower with increasing elevation in the mountains, which also receive more precipitation in the form of snow.

Most of the farmland in the county lies on floodplains and terraces along the major rivers that drain directly to the Pacific Ocean, in particular: the Salmon, Siletz, Yaquina, Alsea and Yachats Rivers. High quality farmland is not abundant in Lincoln County according to the soil capability classification system (Shipman 1997). There are no “Class I” lands, considered of highest potential for agriculture, and a relatively small amount of class II and III lands in this area. The Siletz River Valley near the town of Siletz has the most land area suitable for crop cultivation. Ninety percent of Lincoln County’s 635,000 acres is forested; two percent of the county is zoned for farming (14,000 acres), two percent rural residential (13,000 acres), three percent urban (18,500 acres) and the remaining three percent is in the category “other” (roads, water, etc.)

(Central Coast Economic Development Alliance 2007). While the region has ample winter rain, summers are generally quite dry. Since there is very limited snow accumulation in the Coast Range (Saddleback Mountain at 3,350 feet is the highest peak), summer irrigation can be a problem for farmers.

Food and Demographics

Though it makes ecological sense that a place with 46,000 residents would create abundant demand for food from nearby farmers, in fact Lincoln County's current population level, when compared to terrestrial food production, highlights the disconnection between human population and physical resources tied to a particular place. This phenomenon is emphatically not unique to Lincoln County. However, Lincoln County provides an interesting example of a place that has higher potential for agricultural production that is nonetheless being suppressed by other factors. These "other factors" will be explored in some depth in subsequent chapters.

There are several demographic indicators that relate to food demand. Lincoln County has seen steady population growth over the past several decades, from about 15,000 residents in 1945 to 46,000 as of 2005 (US Department of Commerce [USDC] 2007). Newport, the county seat, is the largest city at approximately 9,800 residents as of 2005. The state of Oregon's population grew at a similarly steady rate during the past several decades to 3.7 million as of 2005 (USDC 2007). Two-thirds of the recent population increase at the state and county level is due to in-migration from other parts of the US as well as international migration.

Fifty-eight percent of the county population (aged 16 years and older) was considered part of the labor force in the year 2000 (USDC 2002). At least one-third of households in the county received income from Social Security. In fact, 2005 data from the US Census Bureau showed the number of persons age 65 and over to be 19.2% of the total population for Lincoln County compared to the US average of 12.4%. Lincoln County's large number of retirees per capita not only receive Social Security payments but also access other retirement benefits and assets, contributing significantly to the local economy.

Given the ecological setting of Lincoln County with its logging, fishing and agricultural traditions, natural resource occupations represent a surprisingly small percentage of overall employment (Table 1). As of the 2000 Census, only 2.9% of the employed adult population in Lincoln County worked in farming, fishing, and forestry occupations.

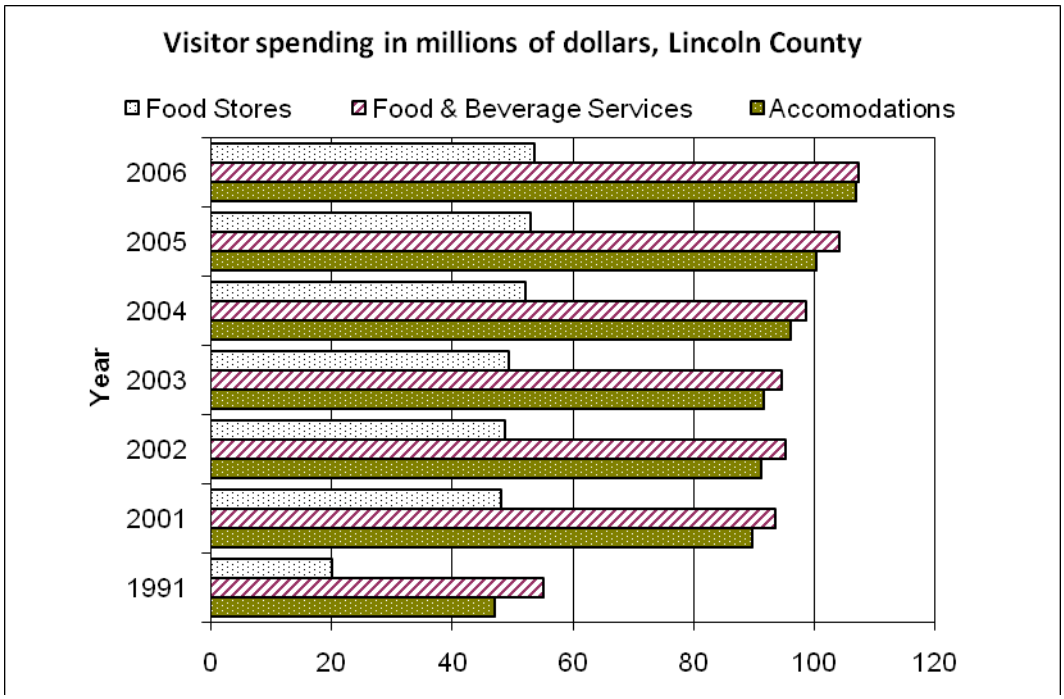
Table 1. Lincoln County employment (US Census: Profile of Selected Economic Characteristics: 2000)

EMPLOYMENT IN 1999	Number	Percent
Employed civilian population 16 years and over	19,263	100
OCCUPATION		
Sales and office occupations	5,302	27.5
Management, professional, and related occupations	5,264	27.3
Service occupations	4,223	21.9
Construction, extraction, and maintenance occupations	1,995	10.4
Production, transportation, and material moving occupations	1,912	9.9
Farming, fishing, and forestry occupations	567	2.9

Tourism, on the other hand, occupies a very significant place in the economy of Lincoln County in sales from food services and accommodations (USDC 2002). According to Oregon's 1997 "Travel Profile" (Dean Runyan Associates 2007), 43.5 million trips were taken to Oregon in 1997. Relative to other regional destinations, Oregon's coast is the most popular with 26% of total nights spent there. Tourists visiting Lincoln County spent approximately $107 million on food and beverage services (restaurants) and $58 million at food stores in 2006 (Dean Runyan Associates 2007) (Figure 1), showing strong growth since the early 1990s. Statistics from the Census Bureau and Oregon's tourism commission suggest that tourism is extremely

important to Lincoln County's economy. Tourists, however, are only one component of overall food and beverage sales, a broader trend concerning restaurants that is true for visitors and residents alike, is that Americans are eating away from home more frequently than they used to (Cozad et al. 2002).

Figure 1. Visitor spending in Lincoln County (Oregon Tourism Commission, Lincoln County Travel Impacts, 1991-2006).



Food Consumption and Expenditures

National averages for food consumption by pound and calorie are tracked by the USDA's Economic Research Service. Currently, the average American eats about 1,950 pounds of food per year equating to 2,757 calories per day (US Department of Agriculture 2006). Based on this figure the population of Lincoln County consumes around 246,000 pounds of food per day (123 tons per day). This figure does not include the significant tourist population visiting the county. Therefore, the actual amount of food demand would greatly exceed 123 tons per day during the peak tourist season.

Food Distribution

Clearly there is no lack of demand for food in Lincoln County with its 46,000 residents and millions of tourist visits per year. How is food distributed to them? Restaurants, grocery stores and other institutions are the main outlets for the vast majority of food. The Lincoln County phone directory lists over 250 restaurants, 7 retirement and assisted living centers, 48 food stores, 13 primary and secondary schools in the Lincoln County School District, and a regional hospital and a county jail.

Through an interview with a representative of the Oregon Restaurant Association, I found that restaurants receive the bulk of their food by truck from the major wholesale food delivery companies such as Sysco Corporation, Food Services of America and McDonald's Wholesale. Ocean Beauty, a wholesale seafood distributor based in Seattle is a commonly named supplier of seafood to local restaurants. Other smaller, regional distributors supplying local restaurants are Pacific Fruit Company (Portland) and Carlton Meat Company (Carlton, OR). I also found through informal meetings and interviews with Lincoln County restaurateurs that some restaurants also buy direct from local fishers, farmers and gatherers.

Unified Western Grocers, Inc. is a supplier to independent grocers in Waldport and Newport (Personal communication with store managers). Large chain stores like *Fred Meyer* and *Safeway* are their own suppliers, whereas, small stores get their supplies mainly from wholesale dealers. Beverages of some large brands often have their own bottling companies in the local area and so they deliver to all stores. The manager of a small natural food store said that most of their food was purchased from United Natural Foods, Inc. (Currently of Rocklin, CA; building a warehouse in Portland as of 2007), Organically Grown Cooperative (OGC), and many small distributors such as local producers and food processing businesses in the Eugene area. It was clear from conversations with grocery store managers that the natural food store had a greater commitment to buying from small and local producers and processors whereas the larger mainstream stores lacked the motivation or flexibility to make such purchases from outside their normal supply chains. Lack of access to the channels (or chains) whereby food is mainly distributed has real consequences for small farmers and is an

observable phenomenon linked to vertical integration of production processes characteristic of a globalizing food system (Phillips 2006)

A Sodexho representative in Lincoln County informed me about food service for the Lincoln County School District. Currently all public school food service in the county is provided by Sodexho, Incorporated, which according to its website is, "a leading integrated food and facilities management services company in the US, Canada and Mexico, with $7.3 billion in annual revenue and 125,000 employees." Current district enrollment (2006-2007 school year) is about 5,800 students. All 13 schools provide meals, which are served every school day. During the 2005 – 2006 school year, the average daily count for breakfast and lunch combined was 4,759 meals served per day in the district. All food for the district enters through a central point of distribution in the Portland area, serving as another example of a large corporation, in this case a transnational corporation, effectively blocking access by local farmers to a captive audience of school cafeteria eaters.

In addition to these institutions are direct market outlets for regional food producers such as farmers' markets, community supported agriculture schemes and roadside stands. As described in Chapter 3, Lincoln County has four farmer's markets open once per week roughly from May to October in Lincoln City, Newport, Toledo, and Yachats. Community Supported Agriculture (CSA) exists thus far at a low level in the county with deliveries made to drop sites in Newport and Yachats by one Willamette Valley organic farm. Members of the community, such as the grassroots group calling themselves the Lincoln County Sustainability Coalition, have expressed interest in creating more CSA-style programs in the area and there is also a Slow Foods convivium actively promoting agriculture at the local level. More about such efforts will be discussed in Chapter 8: Rebuilding a Community Centered Food System.

Poverty and Food Security

According to the USDA's Economic Research Service, Lincoln County had a poverty rate of 15.3% in 2004 (percent of total population in poverty). This is higher than the Oregon statewide average of 12.9% for the same year. It is also higher than the

2000 census estimate for individuals below poverty of 13.9% (US Department of Agriculture 2002, US Department of Agriculture 2006).

In recent years Oregon has ranked poorly compared to other states in food insecurity and hunger. Food insecure households are defined as those that have experienced difficulty purchasing food due to a lack of financial resources in any given year. Food insecurity with hunger is a more serious and chronic level of food insecurity whereby hunger occurs more frequently than in the food insecure category (Nord et al. 2004). Relative to the other 50 states, Oregon is now in 19th place in food insecurity, and 16th in food insecurity with hunger. Lincoln County Food Share, in operation since 1981, serves as the main food bank in the county. An interview with the food bank's director revealed that LCFS continues to expand services due to increased demand, receiving one semi-truckload of food per week as of December 2006.

Food Production in Lincoln County

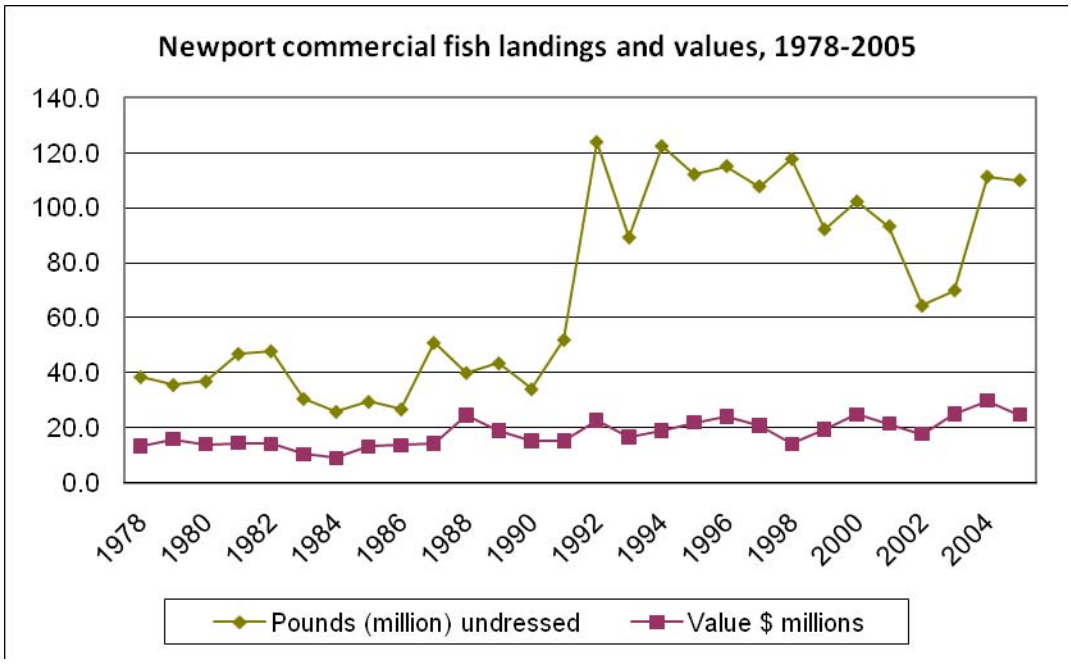
As mentioned previously, employment in natural resource occupations is less than three percent of overall employment in Lincoln County, however, in terms of the actual quantity of food harvested, that which comes from the sea is quite impressive. On the other hand, the terrestrial production of food is now relatively low.

Fishing and fish processing

Lincoln County's fishing industry is a major supplier of fresh and processed fish to other regions. The majority of fish caught by Newport fishers goes to Astoria for processing and distribution (about 120 miles north). The Port of Newport ranked 11th in the nation in 2004 for the quantity of commercial landings and 21st in the value of those landings (Oregon Department of Fish and Wildlife 2005). The fishing industry on the Oregon Coast is subject to major fluctuations due to natural and manmade influences. Ocean conditions, land use, technology, hatcheries, harvest quotas; all of these affect the catch from year to year. However, the value of the fishery has remained fairly constant despite fluctuations, as the chart of fish landings and values at Newport from 1978 to 2005 shows (Figure 2). Waldport and Depoe Bay have facilities to support

sport fishing only. The graph below (Figure 2) shows that while the overall quantity of fish caught rose sharply in the 1990s, the value of those landings remained relatively constant, most likely because of the lower value of the kind of fish caught.

Figure 2. Newport commercial fish landings and values (Oregon Department of Fish and Wildlife 2005).



Several restaurant owners and managers interviewed reportedly buy seafood from regional wholesale suppliers but many have relationships with local independent fishers. In general, it seems that a significant amount of locally caught fish is served in local restaurants based on existing personal networks.

Local processors include Oregon Oyster Farm, Trident Seafood Corporation and Pacific Seafood Group. Interestingly, a report conducted by the fisheries division of the National Oceanic and Atmospheric Administration in 2000 noted several additional seafood processors active on the Yaquina Bay that I could find no evidence of in 2007 (Norman et al. 2008).

Pacific Seafood Group purchased the Pacific Shrimp Company in July 1996, located on the Bay Front of Newport, to procure and process fresh seafood in one of the

largest fishing ports in Oregon (Pacific Shrimp Company 2006). The same company also acquired Depoe Bay Seafood in 2000, another processing facility in Newport, as well as several buying stations along the Oregon coast. Their stores also service tourists by offering a restaurant serving fish, chowder, shrimp and crab. In addition:

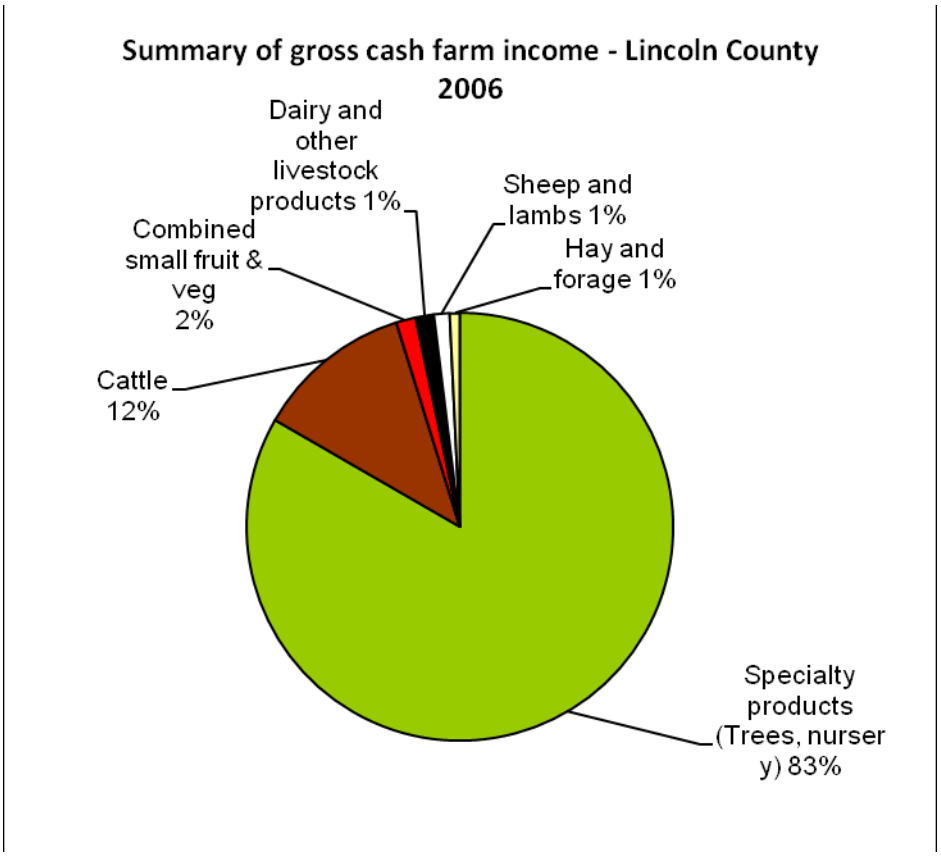
> Pacific Shrimp helps link The Pacific Seafood Group's coverage on the west coast which extends from Westport, Washington to Fort Bragg, California with processing plants in Westport, WA, Warrenton, OR, Bay City, OR, Newport, OR, Charleston, OR, and Eureka, CA. Pacific Shrimp is one of the largest producers of Whiting Fillets on the west coast, and is a leader in Groundfish, Shrimp, Crab and Salmon in the port of Newport (Pacific Seafood Group 2006).

Pacific Seafood Group is a good example of the consolidation, vertical integration and consequent economies of scale that have transformed food-related industries over the past several decades (Phillips 2006).

Agriculture

In contrast to the fishing industry, Lincoln County agriculture produces relatively small amounts of food. According to the OAIN, Lincoln County's gross cash farm income for the year 2006 was $12.6. Figure 3 shows categories of crops for 2006. The category "specialty products" includes nursery crops, bulbs, greenhouse crops, turf, miscellaneous specialty crops, farm forest products (timber from small woodlots), Christmas trees, hybrid poplars, and fee hunting and recreation. Interestingly, of $12.6 million, only 17% is attributed to food production, or about $2.1 million. This chart simply illustrates the low level of food production occurring in Lincoln County at this time.

Figure 3. Summary of gross cash farm income, Lincoln County (OAIN county reports 2006).



In summary, Lincoln County's resident population appears to be highly unequal in wealth distribution with a disproportionately older retired population side by side a poorer population heavily dependent on the seasonally driven tourist economy. While the fishing industry is extremely productive, it does not necessarily follow that many steady jobs are currently being provided by that industry in the local area given that larger production facilities in Astoria draw a substantial portion of processing work out of Lincoln County. Farming provides a relatively small percentage of overall food consumed in the county at less than 0.2 percent (See calculation in Appendix A). The resident population alone, not including tourists, consumes around 123 tons of food per day hauled in from everywhere *else* in the world. In the following chapters I explore this glaring disconnection of a place from its agricultural resource base and whether or

not local food production ever played a substantial role in the food system of Lincoln County.

CHAPTER 3: RESEARCH METHODS

This research reflects both the intention and methods of applied anthropology as a discipline. According to Gwynne (2003), the main purpose of the work of applied cultural anthropologists is: "to help people determine if and how intentional change should take place, and then to help them achieve it." It was from this problem-solving orientation that in the summer of 2006 I became involved in a project, envisioned by the Lincoln County office of the OSU Extension Service, to foster a stronger food system by linking local farmers with local restaurants. In order to gain a better understanding of the context for these farmer-restaurant connections, I was asked to collect information and prepare a report on the county's food system.

Both quantitative and qualitative data were collected in a phased approach to assessing the overall condition and current function of the food system of Lincoln County, as broadly as possible. Templates for this mixed methods assessment were found mainly in the approaches outlined by the community food security movement (Pothukuchi et al. 2002), the Alameda County Foodshed Report (Cozad et al. 2002) and Benton County [Iowa] Food System Atlas (Iowa State University Department of Sociology 2002). In addition, my participation in the research and writing of a food assessment of Benton County, Oregon informed my approach to the work in Lincoln County (Ecumenical Ministries of Oregon 2006).

The initial framework for this research was an outline detailing three interdependent phases.

- Phase 1 – review pertinent secondary data about the county
- Phase 2 – study the elements of the local food system and interview knowledgeable participants
- Phase 3 – select participants and conduct community focus groups

This research was conducted with the approval of Oregon State University's Institutional Review Board, which is charged with protecting research subjects. Where confidentiality is required within the research protocol, pseudonyms have been used.

Real names of places or people mentioned in this document were either used by permission or are a matter of public record.

Phase 1

From Census Bureau statistics I assembled overall demographic data about the county: population trends since the 1940s, current ethnic distribution, income and employment (US Department of Commerce 2002). The Economic Research Service, Oregon Hunger Relief Task Force, and Oregon Food Bank provided statistics on poverty rates and food security at the national, state, and county levels. As tourism stood out as such an important sector of the economy, I sought additional information from the Oregon Tourism Commission on the numbers of annual visitors to Lincoln County and amount of money spent, particularly on food. The Economic Research Service was also the source of statistics on national per capita food consumption and expenditures.

Because the natural environment has such a formative influence on agriculture, I assembled information on the, geography, climate and soils of the county. Soil surveys of the Lincoln County area, published in 1997, and the Alsea area, published in 1973, were consulted to gain a better understanding of physical factors such as temperature and precipitation patterns, length of growing season, and soil types found in the county. Soil surveys are often conducted at the county level, but not always, and are usually led by the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS), formerly known as the Soil Conservation Service. Within Lincoln County there are two different contiguous survey areas because the Alsea portion was completed separately and decades earlier than the rest of the county.

In addition, digitized US Geological Survey (US Department of the Interior 2006) data were uploaded to a Geographic Information System (GIS) to create soil maps of the county – these maps include many other layers representing natural and anthropogenic features. The soil map (layer) shows farmable land in Lincoln County according to the Natural Resource Conservation Service's system for rating the potential suitability of land for agricultural production. This system is known as soil

capability classification (Shipman 1997). As an example of an anthropogenic feature, I added the GIS layer from the Oregon Water Resources Department (2008) that contains data on all water rights, such as the location of wells. County land use data were obtained from the website of Central Coast Economic Development Alliance (2007). Other ancillary but nonetheless significant secondary information came from the websites of: Lincoln County, Oregon Restaurant Association, Central Oregon Coast Association, Travel Oregon, Farmer-Chef Connection, Sodexho, and the State of Oregon.

Sources of recent information on agriculture came from the Oregon Agricultural Information Network (OAIN) and the Oregon State and County data from the USDA's 2002 Census of Agriculture. OAIN is managed by the OSU Extension Service Economic Information Office in the Department of Agricultural & Resource Economics (AREc) at OSU. OAIN provides estimates of production in harvested acreage or number of head, yield per acre, price per unit harvested, and percent of production sold for over 130 commercial commodities in all 36 Oregon counties (Burt 2007).

> The term commercial means crops and livestock which are grown for economic gain. Selling occurs through a wide variety of outlets from farm direct marketing to traditional wholesale markets. We exclude commodities which are being produced solely for private consumption and backyard-type production that is not intended for commercial purposes (Burt 2007:2).

OAIN also tracks farm forest products as a commodity category; industrial logging and sawmill production are not included. Although their records extend back into the late 19th century, only data from 1976 to the present are available electronically. All OAIN data used for this research project are post 1975, having come from their interactive online database. The data for yearly estimates are collected by county Extension agents and statewide Extension Specialists familiar with specific areas and commodities on the basis of observation, contacts with producers and review of other government datasets. All data collected by OAIN are confidential – meaning not personally identifiable to the public. In addition, following the policy of the National Agricultural Statistics Service, OAIN suppresses information released to the public, "if a number represents less than

three producers or if one producer accounts for 60% or more of that number" (Burt 2007).

The modern US Census of Agriculture is conducted by the USDA's National Agricultural Statistics Service every five years, specifically, those years ending in 2 and 7. Therefore, the most recent census consulted for this research was from 2002. To collect the data, USDA attempts to survey every farm and ranch in every county in the United States.

> For the purpose of the Census of Agriculture, a farm is any place from which $1,000 or more of agricultural products were produced and sold, or normally would have been sold, during the census year. The $1,000 value is not adjusted for inflation (US Department of Agriculture [USDA] 2004).

The United States censuses of agriculture are designed to inventory valuables (land, animals, buildings, machinery) and the sales of valuables on farms in the United States aggregated at the state and county levels. Survey takers are asked questions about the size of their farm, types of crops grown or animals raised, and their products. Demographic information is collected in order to obtain a description of the operation, such as age of primary operator, income from on-farm and off-farm occupations, and whether landowners rent their land to others or farm it themselves. These statistics help paint the overall picture of agriculture in a county or state, particularly relative to other counties or states.

Comparing USDA to OAIN data was both useful and problematic in that they utilize different collection methodologies and define terms differently. In general, they are interested in measuring similar attributes of the agricultural system, such as acreage in production. But minor differences in defining these attributes can lead to different numbers. On the one hand, multiple sources allow for a kind of triangulation that is not possible with a single source. On the other hand, when the results differ, it is not possible to know what the "true number" is. For example, OAIN's "All crop summary" for Lincoln County in 2002 includes 1,355 acres. For the same year, USDA estimated "harvested cropland" to include 3,617 acres (USDA 2004). To parse out how the definitions vary is extremely difficult and, anyway, according to OAIN's Larry Burt: "Neither estimation through the rules of statistical inference nor professional best

judgment estimation results in the 'true' number. Even a detailed ag census involves an abundance of statistical estimation" (Burt 2007). Therefore, I consider a comparison of OAIN and USDA data on similar attributes to provide an estimation of the range of answers rather than either of them providing the right answer.

As the historical US censuses of agriculture figure so prominently in my research, it may be useful to provide a brief history of these documents. The US Department of Commerce, Bureau of the Census was in charge of collecting and publishing farm data for the first 156 years (1840-1996), after which time the USDA's National Agricultural Statistics Service (NASS) took over the job (USDA 2004). The number of years between censuses has also changed over time. From 1840 to 1950, the census was conducted every ten years. In addition, a separate census was taken in 1925, 1935, and 1945. From 1954 to 1974 the census was conducted in years ending in 4 and 9. Congress changed it again in 1976 to a five-year cycle to accord with other economic censuses. The present schedule is for an agricultural census to occur in years ending in 2 and 7 conducted by NASS. As noted, the most recent year for which complete census data are available is 2002.

Phase 2

Sources of information from Phase 1 and my existing contacts led to communication with people professionally connected to various sectors of the local economy intersecting with food. In all situations I identified myself as a graduate student working with Lincoln County Extension Service to research the food system of Lincoln County. In the beginning of this second phase of research I had several informal interviews in various locations. According to Bernard, informal interviewing is characterized by a lack of structure or control; the researcher simply remembers and takes note of conversations and observations whenever feasible (Bernard 2006). For example, I talked in very general terms about the fishing industry with an OSU Extension employee based in Newport who works with the fishing community. She later supplied me with useful documents and statistics on the local fishing industry. One fall weekend I visited Newport Saturday Farmers' Market and Lincoln City and

Yachats Sunday Farmers' Markets to speak with vendors and market management. These were informal interviews arrived at through convenience sampling (Bernard 2006) in that I simply dropped in and spoke with whomever I could.

In the same manner, I spoke informally to managers of four different retail grocery stores: a small convenience store, two large grocery stores, and a natural foods cooperative. Most of the other informal interviews with people connected professionally to some aspect of the food system were conducted by telephone. Also in the fall of 2006, I participated in two community meetings organized by a grassroots nongovernmental organization (NGO) called Lincoln County Sustainability Coalition, which was interested in starting a Community Supported Agriculture (CSA) scheme. I observed and took notes at these meetings and spoke to participants as time allowed.

After a number of informal interviews, I began to develop lists of questions which aided me in setting up and conducting open-ended, semi-structured interviews. A few of these semi-structured interviews involved exchanges via email, but most were conducted by telephone or in person. The semi-structured interviews involved five groups: farmers' market managers; restaurant owners or managers; professionals connected to the food system through their work; food producers; and focus group participants. For each of these five groups I constructed different sets of questions to use as an interview guide (Bernard 2006). In the case of the professionals, who did not form a homogenous group since they had little in common, the questions were tailored to them individually. According to Bernard, the semi-structured interview is ideal for situations where the researcher is trying to exercise some control over the course of the conversation, and get certain questions asked, while allowing ample room to follow up on new topics that come up during the interview (Bernard 2006). Table 1 shows the number of informal (40) and semi-structured interviews (42) conducted with eight categories of people.

Table 2. Qualitative data sources.

Data Source	Informal Interviews	Semi-structured Interviews
Farmers' Market Vendors	12	
Grocery Store Managers	4	
Farmers' Market Managers		3
Restaurant Owner or Manager		8
Professional (NGO, Extension, USDA, etc)	11	5
Food Producers (farmers, ranchers)	10	24
Focus Groups		2
Community Group Meetings	3	

As an example of "professionals connected to the Lincoln County food system," I contacted the Lincoln County School district to learn about their current food service regime and was put in touch with the local Sodexho representative. Food service in Lincoln County is completely outsourced to Sodexho, Inc., a multinational food and facilities management company. I also interviewed a representative of the Oregon Restaurant Association about the major sources of food consumed at Lincoln County restaurants and grocery stores.

Farmers' Markets

On one weekend in early September of 2006 I visited three of the four farmers' markets operating in Lincoln County (Toledo FM had already closed for the season).

The largest of these markets is the Newport Saturday Farmers' Market, open May – October. The market is operated by Lincoln County Small Farmers Market Association, which also started the Lincoln City Farmers' Market. Although they now are run by separate boards of directors, they have closely allied management systems. Newport's farmers' market has been in operation since 1978 and the market was located at the fairgrounds until 1999 when they moved to their present location beside the main coastal thoroughfare, Highway 101.

The following Sunday I attended both the Lincoln City Farmers' Market and the Yachats Farmers' Market. The Lincoln City market operates June – September and is also located along Highway 101, on the grounds of an elementary school. This market is much smaller than Newport's with only 14 vendors in attendance. The Yachats Farmers' Market was established in 1980 and operates Mid May - Mid October. It is also located along Highway 101 and occupies a public space called Yachats Commons. The day I visited there were ten craft vendors, four fruit and vegetable vendors, three bread and sweets vendors and one nursery vendor.

After informally interviewing the main contact for the Lincoln County Small Farmers Market Association, which manages both the Newport and Lincoln City markets, I emailed her to ask about numbers and kinds of vendors; primary product types sold; farmer location; how long each vendor attended the market in 2006; whether there were any noticeable product gaps at either market; and for any other trends or observations. The Yachats market manager was contacted by telephone for the same information.

I did not visit the Toledo Farmers' Market but interviewed the market manager over the telephone in February of 2007. That market usually runs Wednesdays from mid June to late August. The next season (2007) the manager plans to start in late June and go until late September in order to take advantage of the later peak season for produce in the area.

Food Producers

Unfortunately, there was no simple list of known farmers and ranchers in the county from which to begin choosing research participants. I consulted two sources to get started with the process of interviewing local food producers: OSU Lincoln County Extension Service and the USDA Farm Service Agency (FSA). My contact at the Farm Service Agency supplied me with a list of names and addresses of landowners in Lincoln County who at one time or another had contacted FSA inquiring about agricultural programs and services. The FSA list contained approximately 300 names. Like the OAIN and USDA census data discussed above, this list included landowners with woodlots, Christmas trees, and nurseries. It was not possible to isolate the current food producers on this list or even to know if those listed were still living. I reviewed the FSA list with a long-time county resident and secretary at the local Extension Service office and then with the FSA agent for the names of landowners they thought were likely to be actively engaged in food production. Based on that list of approximately 50 names, I looked up telephone numbers and began calling to set up interviews. Being new to the area, Lincoln County Extension Chair, Sam Angima, expressed interest in participating in on-farm interviews as a way for him to get to know the producers and find out more about their challenges and strengths. I explained my research project to prospective participants and asked if we could come out to their farm to speak with them. Throughout this research I engaged the chain-referral method (Bernard 2006), asking if the person to whom I spoke knew of others who fit my criteria for a farmer or rancher. I was looking for people who grew food not just for themselves but who were also engaged in selling (or otherwise sharing) their product – of any amount and in any and all possible ways.

Prior to these on-farm visits I developed an interview guide composed of semi-structured, open-ended questions (Appendix B). The questions were informed by a "farm to school" questionnaire I had seen and modified for use on another project (Community Food Security Coalition and the Center for Food and Justice, Occidental College). The questions reflect my own experience and interest in the connections possible between restaurants and local farmers. As some people are more talkative and digression-prone than others, on-farm interviews ranged in length from 45 minutes to 2

hours. These longer interviews tended to occur when talking to people with more experience to share, which was usually related to a longer history on their land. Sam Angima attended eight of twelve in person interviews after which point he had less time and I went alone on four more outings. The remaining twelve interviews I conducted over the telephone using essentially the same questions.

Restaurateurs

After the food producer interviews were well underway, I formulated questions for restaurateurs that inquired about their experiences buying local food. For these interviews I specifically selected restaurants that had been identified through other interviews as purchasers of locally produced food products. I wanted to find out what these restaurant owners and managers thought of the contacts they had with farmers and their overall view of the value of buying and serving local foods. I conducted these interviews by telephone, speaking with seven restaurateurs known to buy from Lincoln County farmers.

Historical Component

From the secondary data and interviews it became clear that there was a relatively low level of activity in Lincoln County's food production sector. I became curious about the history of agriculture in the county and how might it have changed over time. I consulted the available agricultural census data for Lincoln County from 1910 to the present. This historical information revealed a much more diverse food production and processing system than the one in existence today. In addition, I visited the Lincoln County Historical Society museum in Newport and found that a special exhibit about local food was on display. I spoke to the archivist about the exhibit and my research and made copies of some materials. I later received assistance from the archivist at the OSU Valley Library who helped me find one of a kind photographic evidence of a previous time. Another helpful resource was a book entitled "Yaquina Bay, 1778-1978" (Castle et al. 1978) produced by the Lincoln County Historical Society.

Presentation of Preliminary Research

In April of 2007 Lincoln County Extension Service hosted a day-long meeting entitled "From the Farm to the Table - The Facts & Challenges in Lincoln County" to provide a forum for lectures and discussion on topics important to agriculture in the county. There were approximately 30 people in attendance and I gave a presentation on my preliminary research results at that time. I also spoke informally to several of the participants and received some new contact leads. In addition I presented preliminary results as part of the Agriculture, Food and Human Values Society conference in June of 2007. In preparing for these presentations I analyzed and distilled the main themes of my research up to that time.

Phase 3

Focus Groups

The last phase of data collection involved convening focus group sessions with community members. These sessions had two goals: First, to review and validate research results, and receive input to assist in synthesizing the results. The second goal of the sessions was to discuss strategies for increasing agricultural production in the area. These meetings were held on different evenings at different locations. Mainly the groups were composed of farmers I had previously interviewed. Though invited to each group, no restaurant owner or manager attended the first meeting in late October. The second meeting in early November was held at the Pacific Coast Center for Culinary Arts in Lincoln City hosted by a local chef and restaurant owner who is deeply committed to the center's mission. I presented my results and received feedback from each group. An Extension Service secretary took notes during the discussions and I received facilitation help from Garry Stephenson, OSU Extension Small Farms Program Director.

The first "Small Farms Focus Group" had seven participants all of whom owned some livestock. Two of the members were 2nd generation farmers while three were relatively new to farming. Also participating was a local business owner who had recently started a mobile slaughter business in Lincoln County (he also raised some

stock of his own). The first part of each meeting began with a presentation of the results of my research, including the historical and demographic context for the present situation in agriculture. Following this we discussed the strengths, weaknesses, opportunities and challenges mentioned in the presentation and I actively solicited the group to dispute or add items to this list.

The second Small Farms Focus Group had just four participants, a chef, a farmer from the Lincoln City area, and a married couple from Yachats who grow vegetables for the farmers' market and restaurants. The couple from Yachats was both old and new to farming in that she was raised in the area but moved away for many years, only to retire recently in the area with her husband to reengage in agriculture on the family farmland. While her acreage is large, she rents out most of it for cattle grazing and grows vegetables only on a small part of it. The farmer from Lincoln City came to the area from out of state and has lived on his small acreage for 26 years. He sells mainly to local restaurants.

After my presentation we again discussed the strengths, weaknesses, opportunities and challenges mentioned in the presentation, but instead of asking participants to name all the factors, to save time I posted a prepared list of summarized points from the previous focus group. The idea was to provide more time for adding to the list and discussing new ideas rather than reformulating all the factors, many of which were quite obvious, for example that the climate can be difficult with lots of rain and cool springs. Another difference was that this time we actually had one restaurateur in the room and I wanted to hear from him as much as possible. Still, many of the themes expressed by the first group were echoed in the second group. I edited these comments to reflect only ideas that had not come out in the previous group so that they contained as little conceptual overlap as possible. As an outcome of narrowing the focus, more discussion of solutions and opportunities ensued.

Special Census Tabulation

In late 2007 I requested a special tabulation from the National Agricultural Statistics Service in order to confirm some assumptions about how many types of

commodities a typical farm in Lincoln County is producing. Having conducted research on and outreach to farmers in Lincoln County it was apparent that there were many small cattle producers and few fruit or vegetable producers. It was also somewhat puzzling, even considering the low level of value required to qualify as a farm according to the USDA Census, as to where these 374 farms were (USDA 2004). If according to the Census there were 20 vegetable producers and 22 fruit and nut producers in Lincoln County, how much overlap was there between the two groups and could that overlap help explain why I could not find more of them? These were not answers that could be obtained from the existing statistics and so I contacted the NASS to request a special tabulation that allows access to unpublished data helpful in characterizing the kinds of farms present in Lincoln County.

Data Management and Analysis

Secondary data were compiled in electronic files. The information was then sorted and written up in a narrative form containing data summarized in many charts and tables as a draft report for the Extension Service. A summary report highlighting the history, and strengths and weaknesses of Lincoln County's food system was then produced August 2007 and is included as an appendix to this work (Appendix C).

Informal interviews, obtained through convenience sampling, were recorded in hand-written notes on the spot if it wasn't too intrusive or directly after the interview. Hand-written notes were taken during all semi-structured interviews and later typed into individual MS Word documents. In addition to the Word documents, Excel spreadsheets were helpful in compiling interview responses. Focus group notes were transcribed by the note taker into Word documents after which I reviewed them to add my own notes taken during or directly following the focus group sessions.

I used informal and semi-structured open-ended interviews to produce transcripts, applying grounded-theory analysis to identify and code concepts or themes that emerged from consideration of sample texts (Bernard 2006). I have employed an inductive approach to coding text also called open coding. Comparing data from the thematic categories that have emerged, I have considered linkages between them in

order to develop theoretical models to explain key aspects of the present condition of Lincoln County's food system (Bernard 2006).

CHAPTER 4: CHARACTERIZING PRESENT AND PAST AGRICULTURE IN THE COUNTY

Demographic information on Lincoln County's population and economy and interviews with people responsible for food distribution made it clear that agriculture was very limited in the county, or at least agriculture to produce food was limited. Why are more farmers not taking advantage of the plentiful tourism along the coast by producing food that restaurants would like to purchase, or participating more in the expanding local farmers' markets? What is the character of the agricultural enterprises that do exist in the county? In general, what factors are acting on agriculture in this part of Oregon at this point in time? I explored these questions through research into existing agricultural statistics and by conducting semi-structured interviews with farmers in Lincoln County. This chapter discusses the results of my analysis of recent USDA Census of Agriculture and Oregon Agriculture Information Network (OAIN) data, comparing two authoritative secondary sources of information on food production in Oregon. Chapter 5 uses qualitative data to describe present day farmers in Lincoln County.

The Current State of Agriculture in Lincoln County as Depicted in Published Statistics

I compared OAIN and USDA Census of Agriculture data to triangulate information related to agricultural production. It is important to point out that the figures for both sources are based on estimates and that what can most confidently be compared between the two data sources are trends over time. For an example of how the two data sources differ, consider estimates of harvested acreage in the year 2002. According to 2002 acreage summaries from OAIN, 1,400 acres were harvested for food or forage in that year (Oregon Agricultural Information Network [OAIN] 2007). OAIN does not provide an estimate of the total crop land available in any given year, whereas the USDA reports 3,600 acres were harvested in 2002 of the 9,300 acres of cropland in

the county, including hay production (USDA 2004). In addition, USDA estimated there were 14,000 acres of pastureland.

During 2002 there were 33,000 acres of land in farms (about 6% of the total land area) in Lincoln County (USDA 2004). Slightly over half of the approximately 374 farmers in the county indicated that farming was their full-time occupation. Average farm size in 2002 was 88 acres; median farm size was 38 acres (USDA 2004). According to OAIN data presented in Figure 3 (page 18), 83% of gross cash farm income in 2006 came from "specialty products" such as forest and nursery products. Cattle accounted for 12%, small fruit and vegetables 2% and 1% each for: dairy and livestock products; sheep and lambs; and hay and forage. Due to confidentiality policies the same information is not available for other years in the same format. However, looking at OAIN farm sales data from 1998 to 2007 (Figure 4) it appears that the basic pattern that the pie chart (Figure 3, page 18) illustrates has changed little in these recent years; farm forest products accounted for nearly all of the total crop sales, except in the year 2007. Sales of animals or animal products have remained consistent during that period at just under two million dollars per year (about 17% of gross sales in 2006).

Figure 4. Gross Farm and Ranch Sales in Lincoln County 1998-2007 (OAIN 2008).

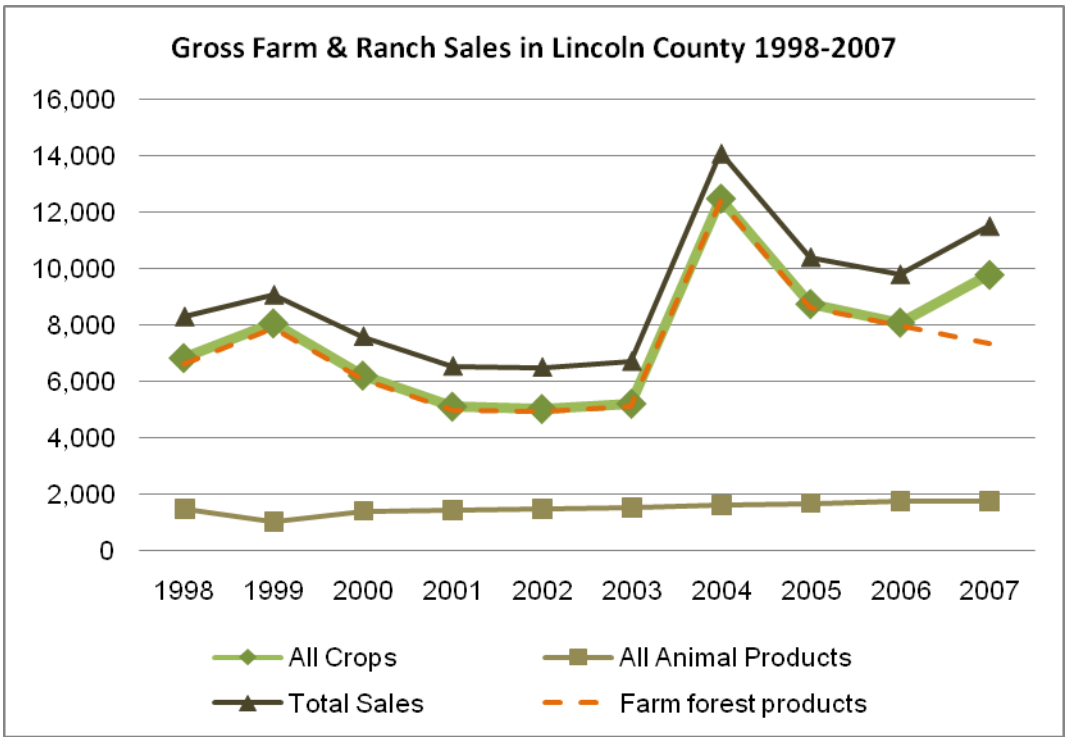
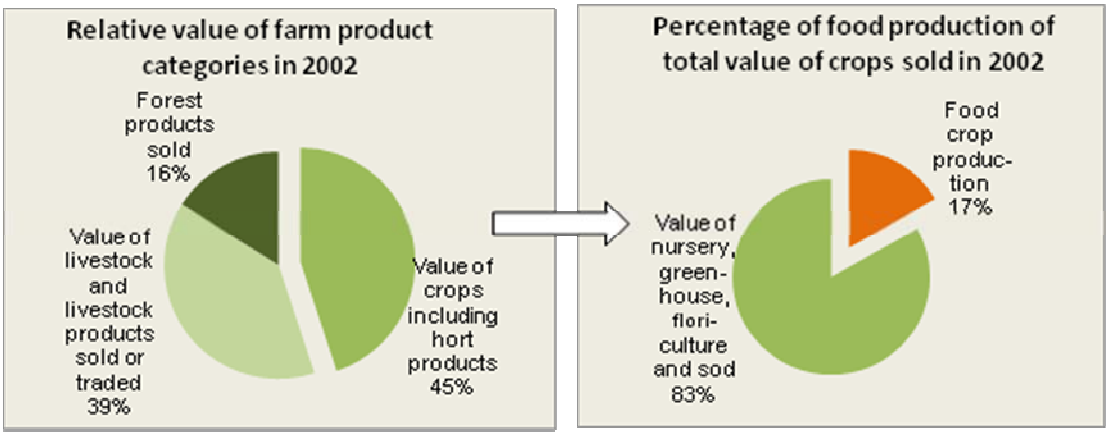


Figure 5 shows the 2002 Census of Agriculture data on the relative value of different segments of the agricultural economy of Lincoln County for that year. The total value of all farm products sold including forest products was estimated to be $7.5 million in 2002. Of this $7.5 million, 45% or $3.4 million represents the value of crops including horticultural products. Of that $3.4 million, 17% or $570,000 is attributable to food crop production. This 17% food crop estimate represents approximately 7.5% of total value from farm sales. An additional $2.9 million is attributed to livestock and livestock product sales. The census estimate of approximately $3.5 million in sales of food or forage from farms is higher than the OAIN estimate by about $1.5 million. The total sales estimate from OAIN was $6.5 in 2002. These differences are probably attributable to differences in collection methodologies. In general though, these statistics tell a very similar story, which is that agriculture in the county is dominated by nursery and timber production. Beef cattle and hay account for the largest segment of

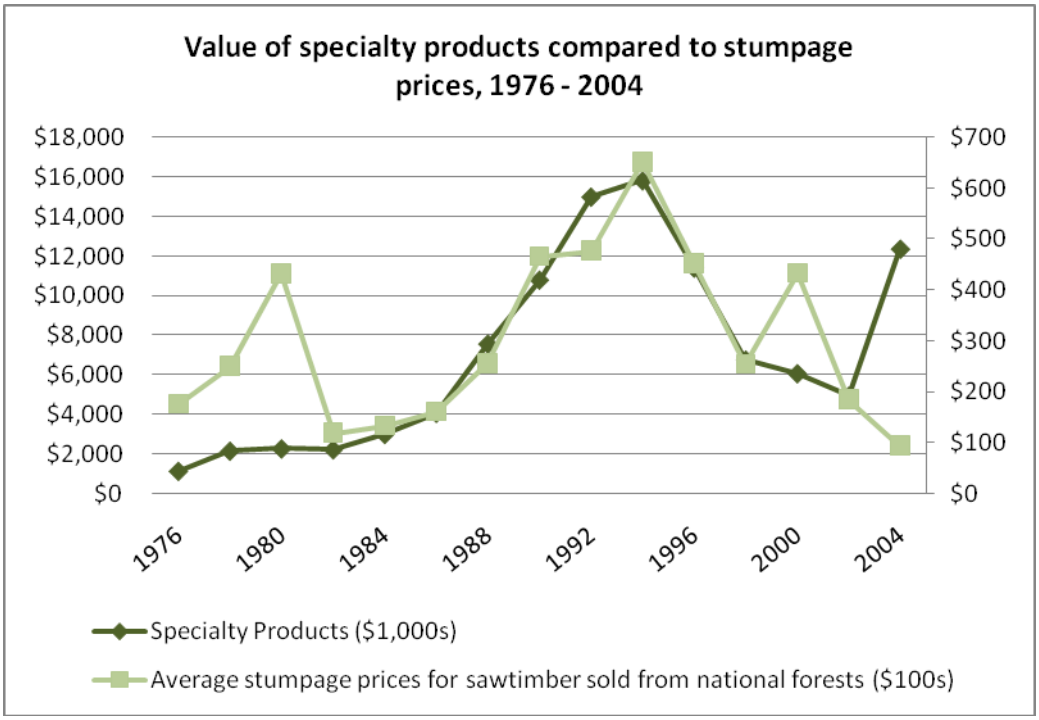
the food economy, with vegetables, fruits and other animal products making up a relatively small portion of overall sales income.

Figure 5. Relative value of farm product categories compared to percentage of food production of total crops sold in 2002 (USDA 2004).



If forest products are as significant a component of farm production in Lincoln County as the statistics indicate, there should be some congruence between the market value of timber and the dollars earned by Lincoln County farmers from selling timber. Using national forest stumpage prices as a proxy for the price of timber (Howard 2007), there does appear to be a correlation between the price of timber and the value to farms of forest products during the past 30 years (Figure 6). This indicates that landowners were harvesting timber from their properties in response to favorable market prices for wood.

Figure 6. Value of specialty products (OAIN 1976 - 2004) compared to stumpage prices (Howard 2007).



Given the low dollar value earned from food, it is not surprising that in recent years Lincoln County has come in last of all Oregon counties in food and forage production (USDA 2004)[2]. In addition, Lincoln County compares poorly to the state average for net monetary gains from agriculture -- including forest and nursery production (Table 3). While more than half of all Oregon farms posted financial gains, only one quarter of Lincoln County farms reported net gains that year. However, as Figure 6 shows, timber prices were quite low in 2002, when the Census of Agriculture was taken, had they been higher, more Lincoln County farms would likely have recorded financial gains.

[2] While eastern Oregon's Wheeler County had slightly lower total sales than Lincoln, 90% of Wheeler County sales were from Cattle and Calves, therefore, it actually produced more food.

Table 3. Farms with net economic gains versus losses, Oregon and Lincoln County compared, 2002.

	Oregon	**Lincoln**
Number of farms with net gains	14,380	77
Number of farms with net losses	25,675	298
Ratio of gains to losses	56%	25%

Special Census Query: Characterizing Individual Farms by Commodities Produced

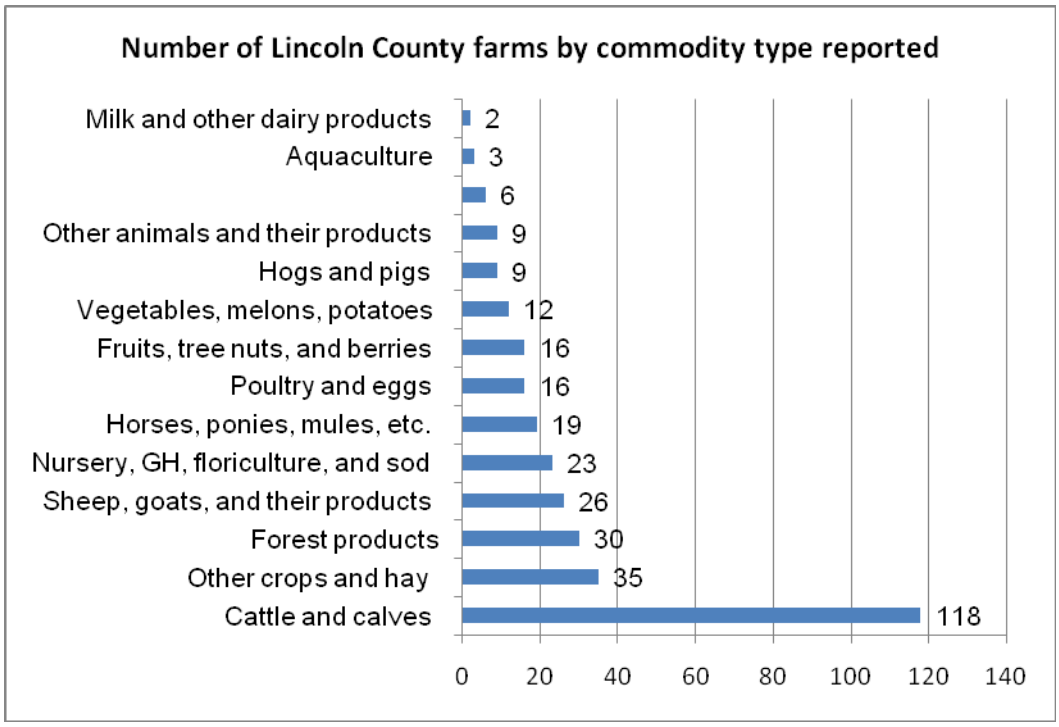
Although Census of Agriculture data is collected from surveys sent to individual farms, in the processing of that data, sales figures are grouped into county level commodity categories. Therefore, the array of products produced on any given farm is invisible to anyone reading the published statistics. Therefore, to better understand the character of individual farms in Lincoln County, I requested information from the National Agricultural Statistics Service on what commodity groups were sold *by farm* in 2002. For example, 20 farms sold vegetables, melons, sweet potatoes. Which of those farms also sold commodities from another group; which group or groups?

The results of this special tabulation confirmed some assumptions about how many types of commodities a typical farm in Lincoln County is producing. The number of farms recorded by the Census of Agriculture is extrapolated from survey forms filled out and returned, not the actual number of survey forms filled out and returned. Rather than receiving survey forms from 374 farms in Lincoln County, 231 forms were received from "Individual Farms" in 2002. The information was then weighted to determine the number of "Expanded Farms," or 374 as published. Similar algorithms were applied to arrive at the number of farms selling each category of commodity. All the published statistics are based on these extrapolated "Expanded Farms" figures.

Twelve surveys were returned from farms producing vegetables (i.e. individual farms) and 16 from farms producing fruit, nuts and berries. Because of overlap of farm

commodity categories, there are actually a total of 25 farms that produce fruits and/or vegetables in Lincoln County which responded to the USDA survey. Figure 7 shows the number of "individual farms" reporting sales from each commodity group.

Figure 7. Number of "individual" Lincoln County farms by commodity type reported (USDA 2004).

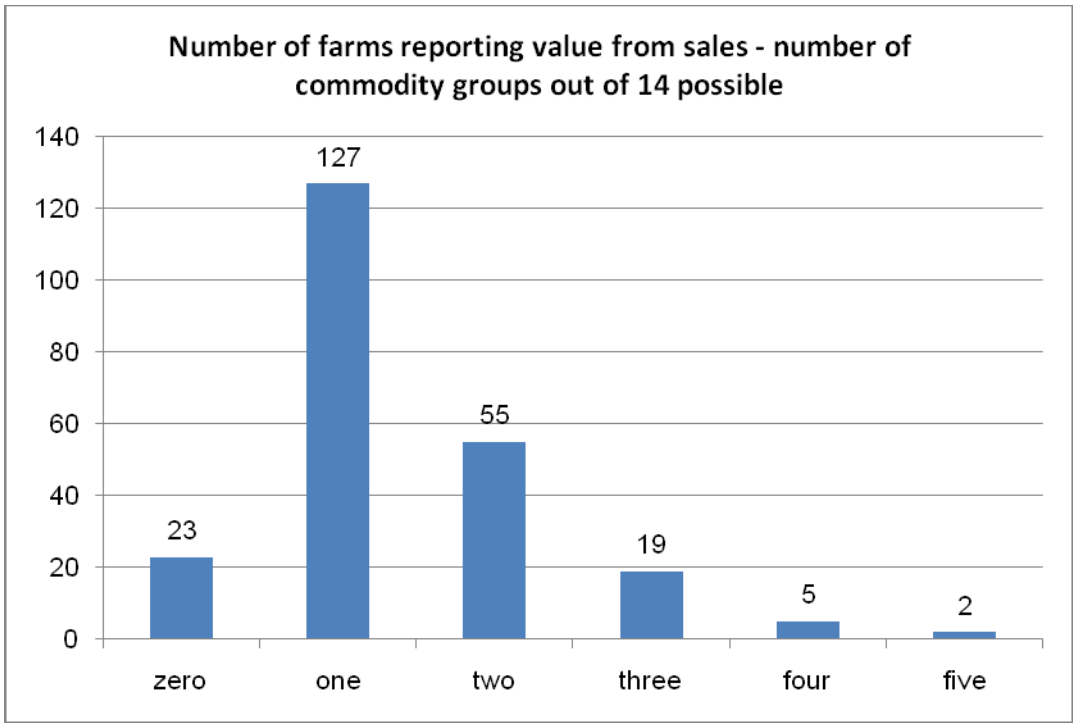


Just over half of farms responding to the census in Lincoln County have cattle. Of those 118, about 60% raise only cattle or cattle and hay. We also know from the published census statistics that 63% of farms had 1-9 cows. These inventory figures tell us that about half of all farms in Lincoln County raise cattle, and most have just a few cattle. It is very likely that the larger acreages with larger herds grow hay for their own livestock and also sell it to others.

In addition, most individual farms reported sales from only one commodity group in 2002 (Figure 8). The top three commodity groups are cattle and calves, hay, and forest products. These data suggest that Lincoln County farms are not generally

diversified in terms of the kinds of crops and animals raised. And supportive of the information already presented, few sell food products other than beef.

Figure 8. Number of farms reporting value from sales - number of commodity groups out of 14 possible (USDA 2004).



Agricultural statistics indicate that food production is at low ebb in Lincoln County. During fieldwork, I found farmers to be relatively scarce in the county and although they are industrious individuals, most are not trying to earn a substantial percentage of their livelihood through farming, and furthermore, they wonder if there would be demand if they increased production. Has it always been that way? Looking into the past, I hoped to understand whether or not Lincoln County has always had such a low level of local food production.

A Brief Food-centric History of the Area Now Called Lincoln County

The following discussion provides a synopsis of the early history of the county especially as it relates to food production based on written records. As such, it is

mainly the story of Euro-American settlement of lands that were once home to Yaquina, Alsea, Siletz and Salmon River tribes of Native Americans (US Department of the Interior 1894). At the time of European contact, these tribes had settlements along the coast at the river estuaries bearing their names.

The first recorded European sighting of the area now known as Lincoln County was of the headland just north of Yaquina Bay in 1778, it was named Cape Foulweather by the famous British sea Captain, James Cook (Castle et al. 1979). Captain Cook never actually set foot there because the poor weather prevented his boats from landing. Trappers and other passers-through were the only recorded visitors to the area until Lieutenant Theodore Talbot, of Fort Vancouver, was ordered to explore the region in 1849; he did so with some difficulty due to the thick vegetation and many downed trees that resulted from large forest fires along the Oregon coast in the 1840s. Talbot's party eventually made it to the Siletz area and Yaquina Bay where he described the natives as intelligent, healthy and friendly. According to Talbot the indigenous population lived mainly on fish and shellfish from the bay as well as berries and game. Apparently they did not range far -- none he met had ever crossed the Coast Range to the Willamette Valley.

A few years later the Yaquina Bay received a visit that may have sealed the central Oregon coast's fate for some time as a place "out of the way of progress" (Castle et al. 1979). In 1852 the *Oregon Statesmen* reported on a visit to the Yaquina Bay by a man named Cyrus Olney, he wrote:

> We saw nothing in the country or its productions and resources sufficiently attractive to induce an immediate settlement of it, in the face of all its disadvantages such as its limited quantity of good land, its destitution of timber and grass and its want of facilities for communication with the rest of the world (Castle et al. 1979:7).

It was from this condition as an area considered more or less undesirable for white settlement that in 1855 the Coast and Grand Ronde Reservations were established by federal order on lands that were then part of Tillamook and western Benton and Lane Counties (Lincoln County was eventually formed out of the western part of Benton County) (Schwartz 2007a). A few years later, the section of the Coast Reservation

known as the Siletz Agency would become an official reservation. Members of over 20 different tribes from southwestern Oregon and Northern California were forced to relocate to the Siletz Agency due to the Rogue River War that resulted from in-migration of Euro-American settlers and aggression toward Indians from California gold rushers (Schwartz 2007a). At its maximum the Indian population on the Siletz Agency was around 4,000 (Castle et al. 1979). This influx of other Native American tribes disrupted the indigenous cultures of the Yaquina, Siletz, Alsea and Salmon River Indians. Because the newcomers were adapted to other environments, they had different food collection strategies from the resident population. Due to this and other factors, a food shortage quickly ensued. In 1856 the first imports of food to the area came to feed the inflated Indian population as well as the army soldiers who acted as their wardens. This food was brought in on the *Calamet*, the first ship known to enter the Yaquina Bay (Castle et al. 1979). Nonetheless, by the time of the Eleventh Census of the United States in 1890, the Indian population on the Siletz Reservation had dwindled because of disease and out-migration to 571 (US Department of the Interior 1894).

Euro-American settlement started in earnest in the 1860s when a white man first tried a small tasty oyster found in Yaquina Bay (Castle et al. 1979). Soon a lively industry was established and Yaquina Bay oysters were exported to San Francisco. It was in fact a dispute between the Siletz Agent representing the rights of the Indians and one of the companies engaged in harvesting the oysters that brought Yaquina Bay into national newspapers and to broader public attention. Settlers began to petition the government to open the area to land claims; meanwhile, better trails linked the Willamette Valley to Yaquina Bay. All of these steps established the possibility of "progress" in even this remote part of Oregon.

Though the climate posed certain challenges, Indians on the Siletz Reservation tried their hands at farming. There were good sandy loam soils along the Siletz and on some of these lands 30 bushel per acre oat crops were grown and harvested by Native Americans:

> The climate is cool and moist, and early and late frosts are so prevalent that some of the garden vegetables seldom mature. The cereals do fairly well, especially oats, which is the crop on which the Indians depend. Wheat is successful in a few localities, but in many places it rusts so badly that it is seldom sown (US Department of the Interior 1894:567).

The Interior Department agent who wrote that report for the census office estimated that there were 25,000 acres along the Siletz River that could be cleared and cultivated with minimal effort, though it appears unlikely that so many acres have ever been under cultivation at one time in the entire county (USDC 1925). Gradually over time Indian lands were opened to white settlement, in some cases settlers could buy land from Indians with allotments – reservation lands deeded to individual tribal members. Today the reservation and rules governing the tribes are administrated by the Confederated Tribes of Siletz Indians, which also offers its own version of some contested elements of the history of the area on its official website (Confederated Tribes of Siletz Indians 2008). In any case, the original agency with its particular governance structure, such as the ability to distribute tools and supplies, was eventually eliminated. Lands that had once been considered the commons were dispersed among individuals in blocks of 160 acres, similar to the amount of land granted under the Homestead Act.

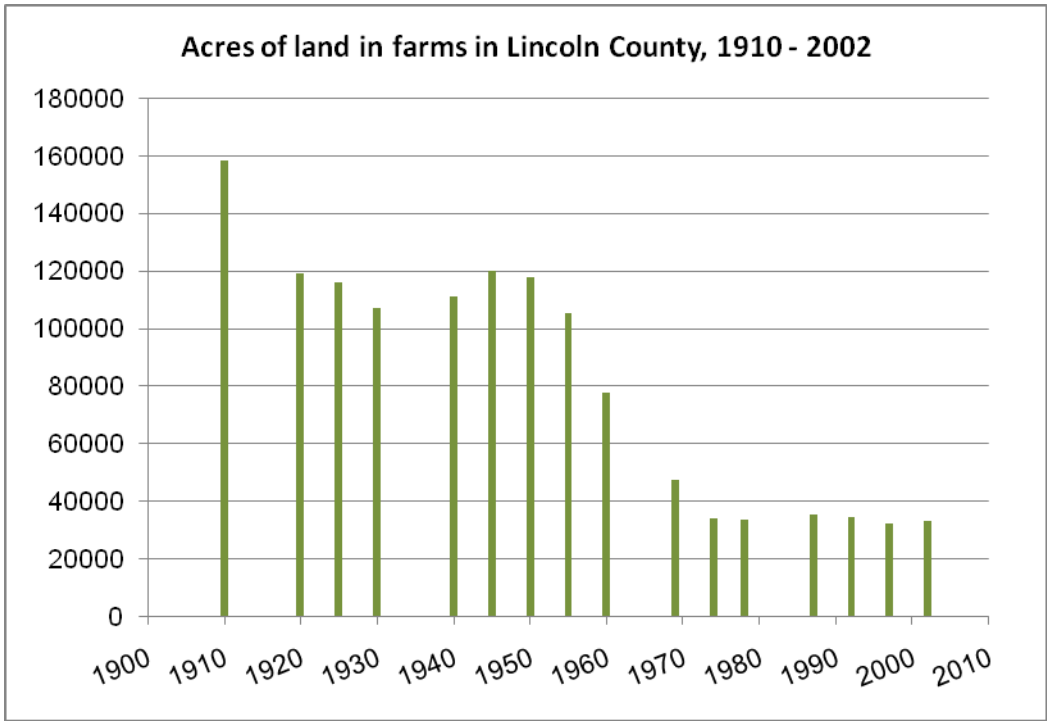
Notably, that division of common property was a deliberate strategy codified by the Dawes Act, or General Allotment Act of 1887, to weaken tribal bonds by allowing commonly held lands to be controlled by individuals (Schwartz 2007b). Systematic land allotment would ostensibly encourage Indian assimilation into American culture by helping them become farmers of their own land. The sale of adjoining unalloted reservation lands to white settlers was also part of the Dawes Act, which further undermined the Indians' control of resources at a community level. Ironically, however, the Dawes Act did not help the Indians become more successful agriculturalists.

Scholars on the subject present evidence that Indians were gaining as farmers before the Dawes Act and that, as a policy, it was not helpful to their long-term success (Schwartz 2007b). However, it was likely a mixture of factors including the division of common property, the lack of support for agriculture in its particular context, and the

unsuitability of some lands for agriculture that led to declines in Indian agriculture on the Siletz Reservation following passage of the Dawes Act (Schwartz 2007b). These themes of government policies encouraging the individuation rather than cooperation or communality of farmers, a lack of adaptation of agriculture to the area (i.e. technical expertise) and settlement of subprime farmland, are mirrored in the comprehensive censuses of agriculture that were conducted by the federal government in the 20th Century.

By the time of the 1900 Census there were 440 farms in Lincoln County; by 1910 this number had expanded to 961 with an average size of 165 acres. Figure 9 shows the amount of acreage in farms in Lincoln County beginning in 1910 and how it fluctuated and has declined from a high of nearly 160,000 in 1910 to the present 33,000 acres. Given that the entire area of Lincoln County in 1910 was 645,120 acres, much of the land described as part of a farm then must have been forested upland unsuitable as cropland and only marginally suitable as range. While forested land continues to be included in the acreage counts by the Census of Agriculture, it is likely that much of the forested land originally classified as farmland either was sold into industrial forestry or came into a different land use category, such as rural residential and urban usage (Taylor 1938, Wakefield 1942). In addition, several older farmers told me that the forest fires of the past, such as those in the 1840s, had left the landscape more open than it is today. On land that might have been suitable for grazing animals at the time of settlement, conifers would have eventually shaded out most forage species. In any case, the modest amount of land considered “cropland” fluctuated only moderately over several decades and ended up only slightly lower in 2002 than in 1925: 9,300 and 10,700 acres, respectively. Pasture land (range, perhaps forested) seems to have declined more steeply, but the statistics are less clear for this category.

Figure 9. Acreage of land in farms reported in censuses of agriculture of Lincoln County from 1910 through 2002.



Scaling Up – From Human to Industrial Scale and Subsistence to Export Orientation

While much of what was enumerated in the historic census remains enumerated in the modern census, there have been a few noteworthy changes. The earlier censuses tended to inventory goods in smaller quantities, such as bushels of grain, dozens of chicken eggs, pounds of cream, and numbers of trees by age class (bearing fruit or not). Over the decades, the census leaned more toward counting acres and dollars. Though some crops such as tree fruits and grapes were counted in pounds in the 1969 and 1982 censuses, the category for tallying actual numbers of trees was abandoned. Some of these changes have doubtless been implemented simply to update and streamline data collection and presentation. For example, in the most recent years, rather than displaying the multitude of individual crops inventoried, they are now lumped into commodity groups, e.g. “Fruits, tree nuts, and berries.”

However, some of the changes in census methodology over the years point to a shift away from viewing a farm as a livelihood, and the generational continuity that implies, to viewing a farm as a business enterprise like any other. In later census years, new categories were established in order to group farms by size (acreage) and by dollar value of products sold. The 1950 census created a dichotomy between commercial and non-commercial farms, actually creating a totally separate inventory of each type. Although this distinction does not hold through the following years of the census, it gives some insight into an emerging paradigm which classified farms into those emphasizing profit and those emphasizing other less easily monetized values.

In the 1925 census the emphasis was on quantifying overall production rather than sales (making some of the numbers less comparable to subsequent censuses emphasizing dollar sales). The 1930 census added the new category "Value of farm products *sold*." Up until the 1950 census "products sold, traded, and used by household" were treated as a single category of "value." That meant that the census recognized and attempted to capture for description the value obtained by farmers from non-monetized transactions such as trading between neighbors. As importantly, it recognized the value of subsistence production; farmers not only sold and traded their products but also ate the food produced by their farms. As of 1950, however, the term "on-farm use" disappeared and the word "traded" became increasingly less used in subsequent censuses. Today the only transaction recognized by the census is the sale of goods or services.

Ninety Years of Agriculture on the Western Edge (Circa 1910 - 2002)

1910 is the first year for which most Census of Agriculture data for Lincoln County is available. The most recent census, at the time of this writing, was that conducted in 2002. As research into the historical censuses of agriculture and other sources revealed, local food production was once a much larger part of Lincoln County's overall economy. The structure of the county's food system has changed over time just as it has in other places in the United States and in the world (Robbins 2005; Halweil 2004; Kimbrell 2002). Early Euro-American settlers on the cutting edge of

expansion had to be nearly self-sufficient in regard to food because there were few alternatives. Most of the people who first made it to Lincoln County to claim land, came to farm, which meant in those days to grow food for their families. In fact, homesteaders had to meet certain federal requirements in order to gain title to the land they claimed, including living on it for three years, building a home and planting an orchard (Strome 1986). Apparently, feeding themselves was not the greatest challenge pioneering families faced since "Vegetables grew as well as weeds did, and wild game was fat and plentiful" (Castle et al. 1978). Visiting the Lincoln County Historical Society's museum in Newport in March of 2007 with its special exhibition on food production provided strong evidence of a robust local food system in the first half of the 20th century. The Oregon State University Archives provided more photographic evidence that good growing conditions existed for some crops, as this prodigious patch of turnips from 1920 shows (Figure 10).

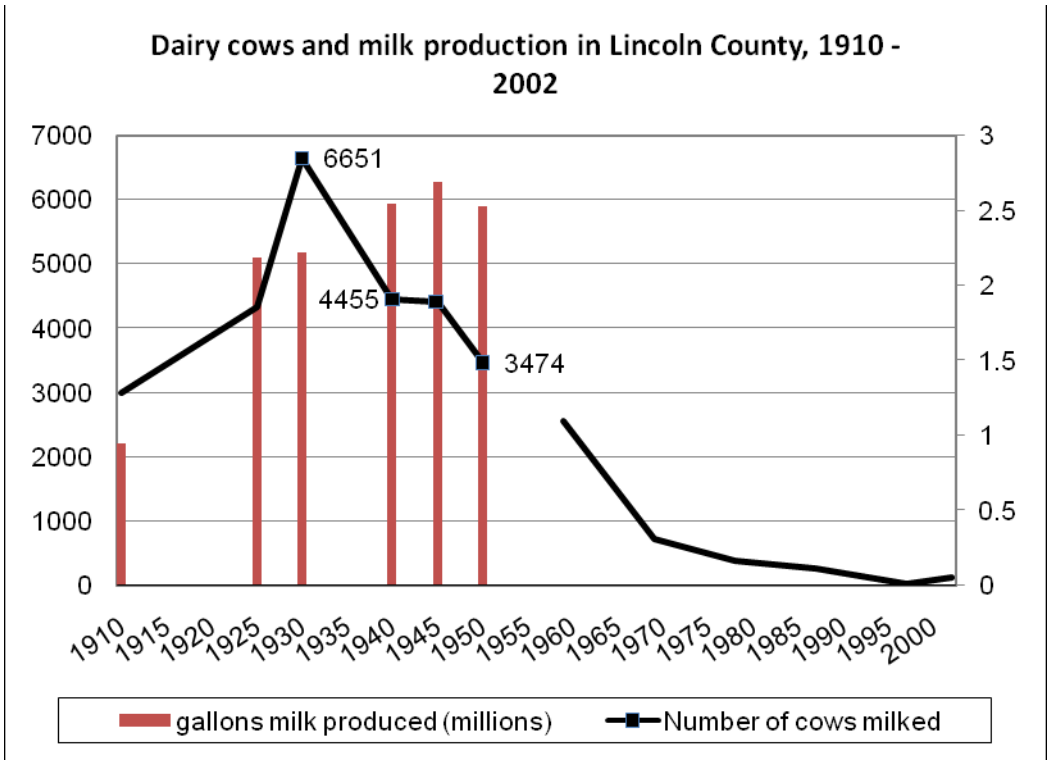
Figure 10. H.R. Hartley, of Siletz, shows off his prize winning turnip patch, circa 1920. Photo provided by Oregon State University Archives.

As has already been discussed above, Lincoln County's economy has long been strongly associated with three major industries: timber, fishing and increasingly in recent decades, tourism (Castle et al. 1978; Dean Runyan Associates 2008). However, agriculture was also a key industry at one time -- in a report on land use planning in Lincoln County from the 1940s, one author called agriculture and grazing "the oldest industries of the county and, at present, are second only to forestry in importance" (Wakefield 1942). Dairy farming has had particular importance. This excerpt from a rousing article advertising the incipient Toledo creamery entitled *Patronize Your Home Creamery,* appeared in April of 1914 in the local newspaper the *Lincoln County Leader*:

> To all members of the Toledo Co-Operative Creamery Association, and all others who are interested in the dairy business: You are hereby notified that the (creamery) is now ready for business and you have a home creamery that is a credit to any place; a building that is up to date and equipped with machinery that is up to date and the Association has employed a butter-maker that is up to date, and it only requires the united support of the dairymen within Lincoln County to assure the creamery a success from the start and by giving your milk and cream careful attention and see that it reaches the creamery in good condition, we will be able to produce a quality of butter that will make Yaquina Bay famous as a dairy country, and thus help to build up our own county instead of shipping away to build up some other place.

The article emphasizes cooperation between dairymen and a sense of "pride of place" fervor for Lincoln County reminiscent of some modern-day food system localization efforts. As Figure 11, "Dairy cows and milk production" illustrates, the dairy industry, measured in cows and milk production, grew rapidly in Lincoln County subsequent to the Toledo Co-Operative Creamery Association's grand opening in 1914 (Censuses of Agriculture 1910 – 2002). In addition, I gathered verbal and written accounts of the existence of creameries or "cheese factories" in Waldport (est. 1943), Kernville (date unknown), Taft (date unknown) and the existence of Darigold Cooperative Creamery distribution plants in Newport and Delake around 1952.

Figure 11. Dairy cows and milk production (Censuses of agriculture 1910 – 2002).



The number of dairy cows in the county more than doubled before peaking in 1930 at 6,651 head (Figure 11). Interestingly, though the number of dairy cows milked decreased precipitously after 1930, milk production rose through 1945 before beginning what can only have been a steady decline (statistics on gallons of milk produced are unavailable after the 1950 Census of Agriculture). This phenomenon may be explained by breeding programs and grain feeding that led to vastly increased milk output per cow (Kramer 1987). This is most evident when considering that even though between 1940 and 1950 the number of cows milked in Lincoln County decreased by nearly 1,000 head, the gallons of milk produced in the county held steady.

It is very likely that breeding for increased milk production played a role in why some farms went out of the dairying business while others held on. For a local example, a farmer from Yachats said that while Jersey cows (pictured in Figure 12) used to be a popular breed for their high butterfat content milk, this is not a desirable

feature in modern milk production where the Holstein breed currently reigns supreme. Clearly the development of other new technologies and infrastructural improvements were also important in the transition of the dairy industry in the 20th century. That same farmer who had delivered his milk direct to customers in the 1940s and 1950s found that once the industry standard process changed to paper cartons and grade A dairies, small dairies went by the wayside. In another case, a farmer from a remote southern part of the county told me that her small grade B dairy became unworkable sometime in the 1970s when her old-fashioned milk containers were no longer compatible with the newer trucks which were designed to pump the milk out of a large tank – the smallest tanks were too big and too expensive for her 17 cow dairy operation. At some point that Darigold truck stopped making the highway 34 route at all.

Figure 12. Lincoln County children from 1908 with their Jersey calves. Photo provided by the Lincoln County Historical Society.

About 1908, Helen, Neta and Clifford Phelps with four of their fine Jersey pets. The farm is one mile up north Beaver from Lincoln Grange. Neta taught Sunnyridge school 1927, Clifford managed the farm for parents Asa and Mildred Phelps driving to Toledo for supplies and Helen married Clifford Crosno, parents of King and Ted. Lyle was oldest sister.

This raises an important issue that would have influenced not only the dairy industry but any other perishable commodity farmers, that is, distance to market or processing facility -- or as the 1950 Census of Agriculture phrased it, "distance to trading center visited most frequently." In 1950 the census included estimates of average miles farmers travelled to sell their product. While the state average was 7 miles, Lincoln County's average was 11 miles. This is much closer to the average distance to market recorded for some eastern Oregon counties, which are typically large counties known for their sage brush and wide opens spaces. By contrast, Lincoln's coastal neighbor to the north, Tillamook County, had an average distance to market in 1950 of just 5 miles. This contrast is important to note because while Tillamook County is the namesake of a very successful brand of cheese completely dependent on a strong local dairy industry, Lincoln County's dairy industry declined steadily after 1945. While no creameries have operated in the county for many years, the last commercial dairy went out of business just in 2007. According to other local farmers, the last dairy went out of business because the owners had not kept up with modern breeding practices. No doubt the distance to the nearest creamery also played a role with 71 miles of road distance between Siletz and Tillamook via highways OR-229 and US-101. Highway 229 is particularly winding as it follows the sinuous Siletz River toward the ocean. Highway 101, though straighter, is heavily congested during the summer tourist season.

While dairy products were perhaps the single largest agricultural food commodity ever produced in the county, there is also historical evidence of other commercial-scale agricultural enterprises earlier in the 20th century. Newspaper articles found at the Lincoln County Historical Society mentioned five different fruit and vegetable canning operations in the Yaquina Bay area. These canneries were geared toward receiving seasonal production of fruit in particular, for example, the Toledo Canning Company was, "prepared to handle your evergreen blackberries, Bartlett pears, prunes, plums, etc" (Lincoln County Leader, April 1918) and the J.M. Smuckers Company proclaimed in the local newspaper that, "a total of 500 barrels of blackberries have been packed this season…" (Newport News, Sept. 1951). Not surprisingly, there

seems to be a correlation between the existence of these processing facilities and the amounts of products harvested.

Blackberry production increased from 600 pounds in 1950 to 20,000 pounds in 1959 while overall berry production increased from 30,000 to 124,000 pounds in the same period. Strawberries made up a large percentage of those gains peaking at 115,000 pounds sold in 1954. The period depicted in Figure 13 is determined by information available in those census years for Lincoln County and the comparability of data between those years. For example, in 1910 the quantity of strawberries produced was estimated to be about 40,000 quarts. There is no mention of blackberries for that year. Though conversion from quarts of strawberries to pounds of strawberries is no doubt possible for comparison, the more important fact is that the 1910 census was asking farmers about *overall production*, on-farm (use) and off-farm (sale), as opposed to 1950 when questions became strictly about sales rather than overall production. Such changes in the units of measurement have major consequences for comparability of the censuses over time, as discussed previously.

Figure 13. Pounds of strawberries and blackberries sold in Lincoln County (Censuses of agriculture 1940 – 1959).

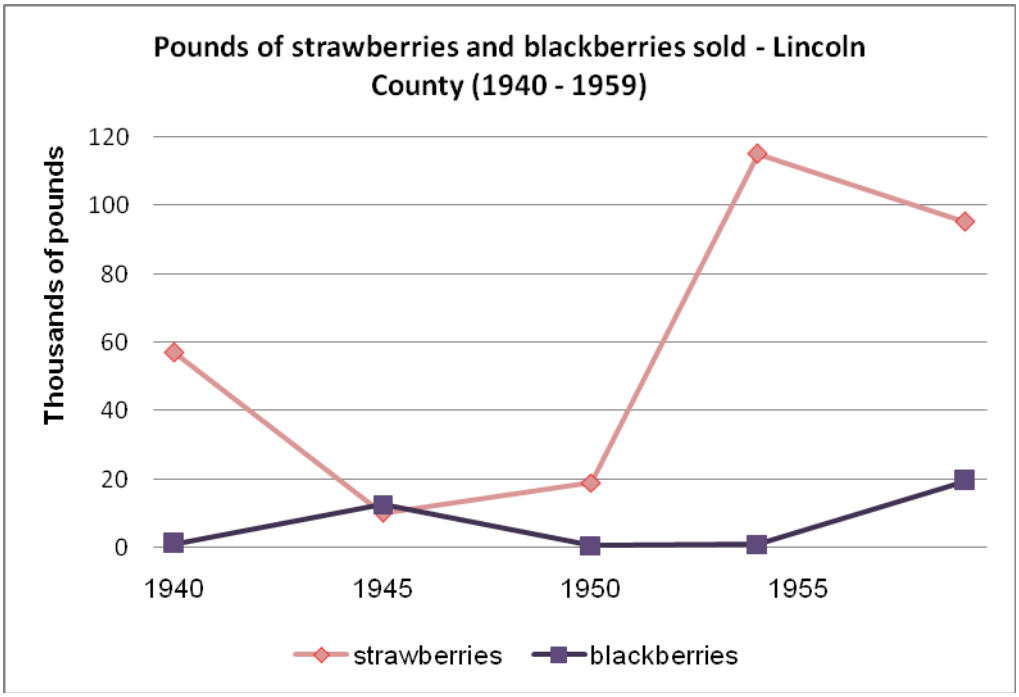
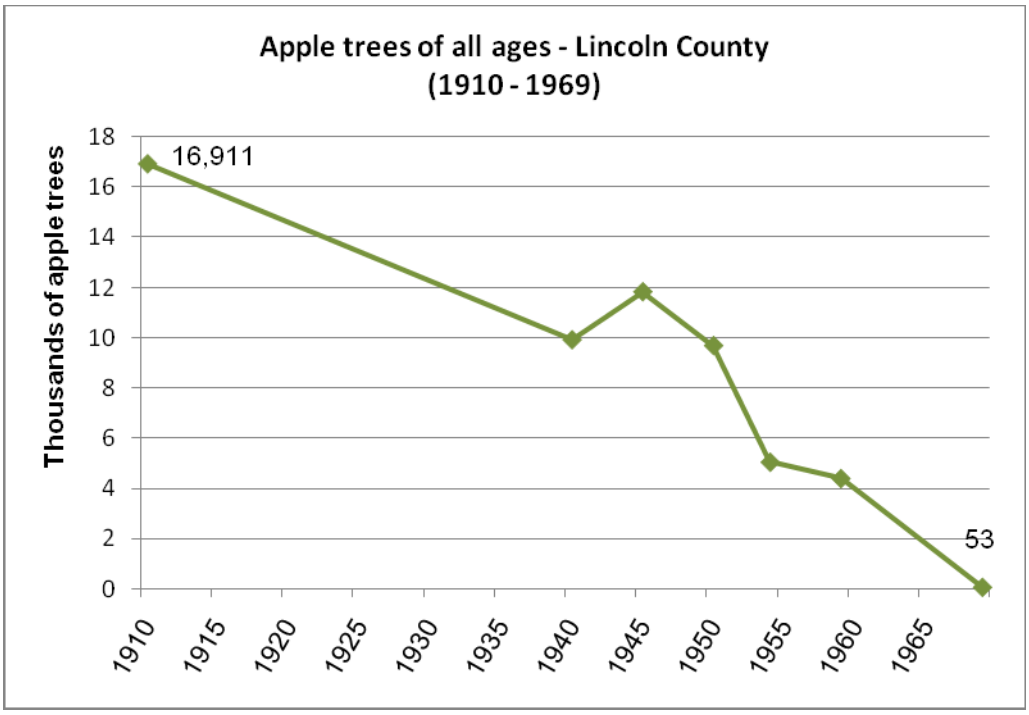


Figure 14 shows similar data for the number of apple trees in Lincoln County starting in 1910. There were no data of that kind available between 1910 and 1940, hence the big time gap between those years. In 1910 there were nearly 17,000 apple trees of various ages reported while the 1969 census recorded 53 apple trees left in the county. This seems artificially low given how long apple trees live, and is probably more reflective of orchard abandonment than absolute numbers of trees, but the downward trend over time is clear. In any case, 1969 was the last year in which that particular question was asked and in subsequent censuses acreages were tallied instead -- those apple acreages were very low. Although other fruit-bearing trees were less common to begin with in the county, pear and plum trees were also counted and showed similar downward trends over the decades.

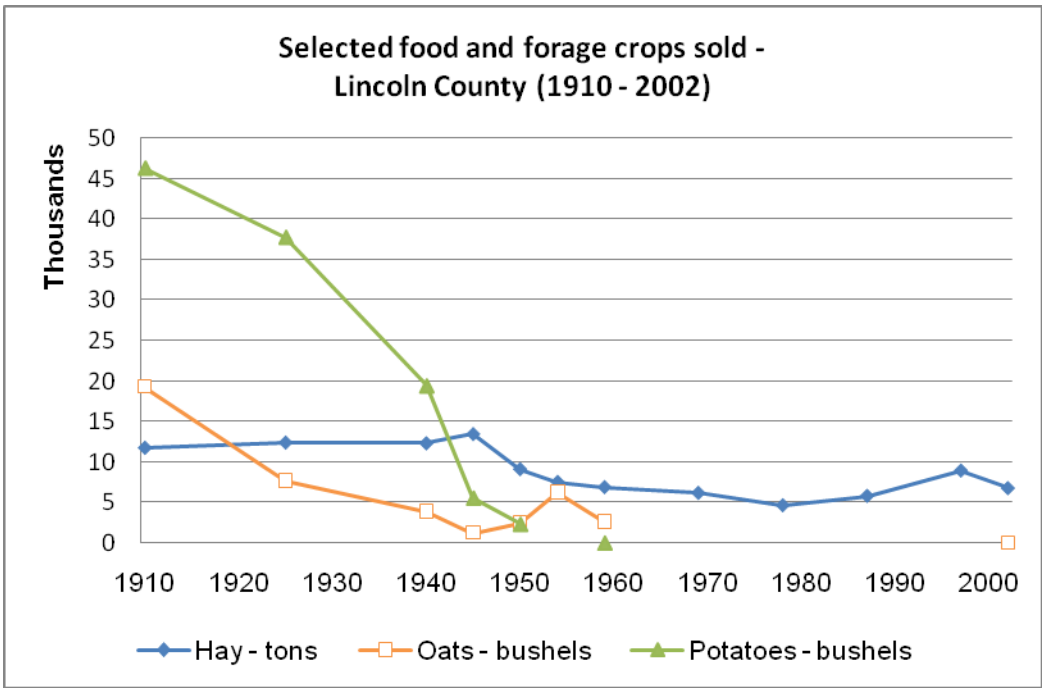
Figure 14. Apple trees of all ages growing in Lincoln County (Censuses of agriculture 1910 – 1969).



Additional food and forage crops for which consistent data were available include bushels of oats, bushels of potatoes and tons of hay. As Figure 15 shows, of

those three crops only hay has continued to be produced and sold consistently in Lincoln County. The farmer from the remote southern part of the county mentioned above told me that her husband's family had grown acres of potatoes and pole beans in the earlier part of the century but that labor had been scarce at harvest times and that access to markets was problematic for the farm.

Figure 15. Tons of hay, bushels of oats, and bushels of potatoes sold in Lincoln County (Censuses of agriculture 1910 – 2002).



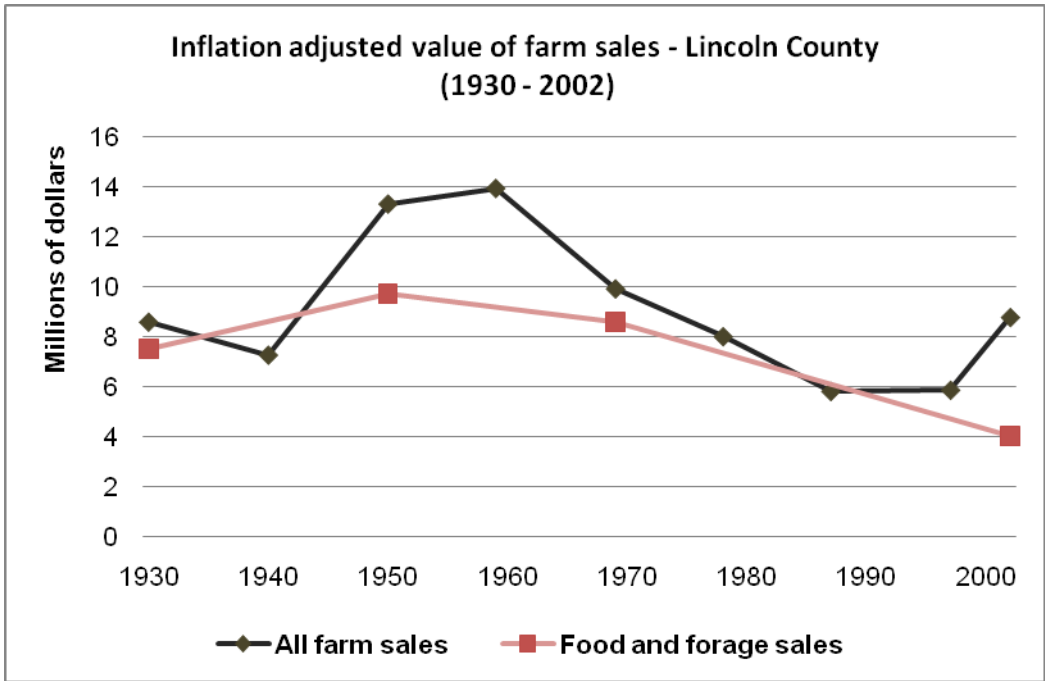
As mentioned earlier, fishing and fish processing soon became mainstays of the local economy with several canning and packing companies in operation on Yaquina Bay in Newport by the 1920s (various newspaper articles and LCHS display). The first fish cannery along the Yaquina Bay opened in 1896. Earlier that same year, the Siletz River's strong salmon runs had prompted the building of a cannery at Kernville, about a mile up stream from the present site of Kernville at the mouth of the Siletz River (Castle et al. 1978). The Kern Brothers Packing Company, as it was called, was apparently not in operation very long, as Siletz valley pioneer Rachel Strome mentions living in a

house in 1911 built out of salvaged wood from “the old Kern Cannery building” (Strome 1986).

Farm Product Sales, Harvested Acreage Trends and Land Use

As of the 2002 Census of Agriculture the inflation adjusted value of farm products in aggregate was just slightly higher as compared to 1930 (Figure 16). However, as discussed earlier, a large percentage of the value accrued to farms according to the 2002 census came from forest and nursery products, not food or forage.

Figure 16. Inflation adjusted (2007 Consumer Price Index) value of farm sales in Lincoln County (Censuses of agriculture 1930 – 2002).

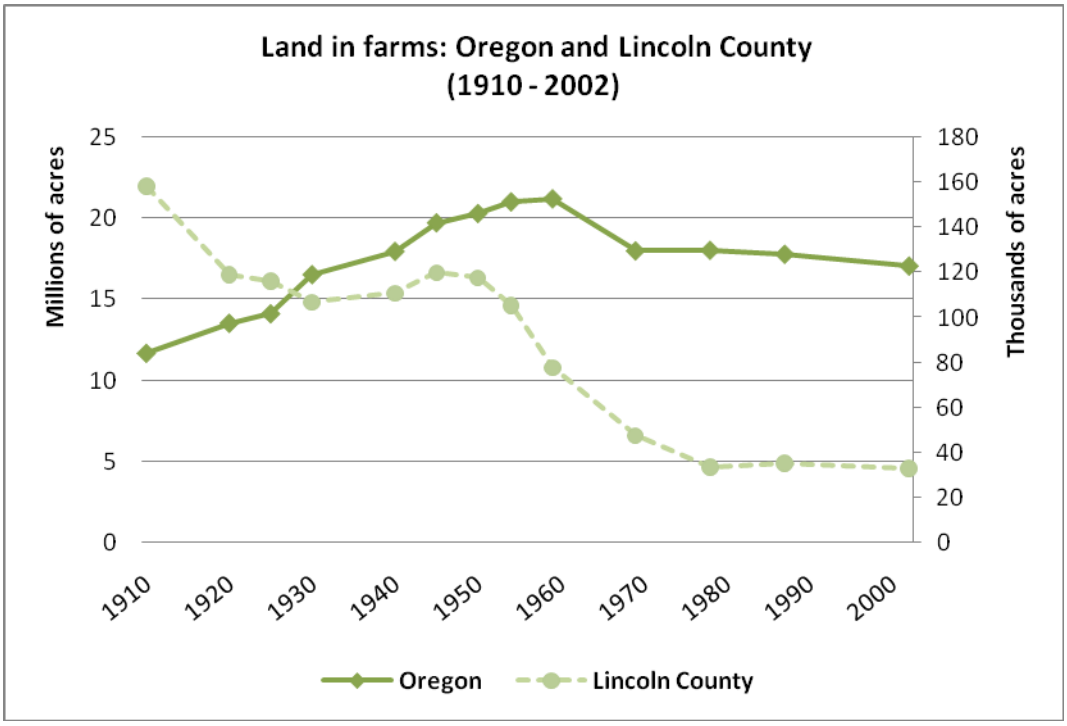


Separating out food and forage from these aggregate numbers shows that inflation adjusted sales of food and forage have declined over the same period by nearly 50% after rising briefly in the 1940s and 1950s. At the same time, the population of Lincoln County has tripled since 1940 to its present level of approximately 46,000 residents while statewide population has risen from 1.1 to 3.7 million over the same period (USDC 2002). Logic would suggest that with such an increase in population, not

just in the county but statewide, overall demand for food should also have increased, leading to higher levels of food production. The actual declines in food production are related to a suite of factors, some of them endogenous to the system, related to local conditions and limiting factors, but of arguably more importance were exogenous factors related to national and worldwide industrialization of the food system with its emphasis on production for export. In essence then, Lincoln County's food system transformation is an example of the predominance of socio-political influences over natural and ecological considerations that has come to typify human interactions with environment on a landscape level over the past two hundred years. At the outward, westward edge of this transformation, Lincoln County is a particularly rich place to look for reactions and new directions as the energy of expansion has reached its outward edge.

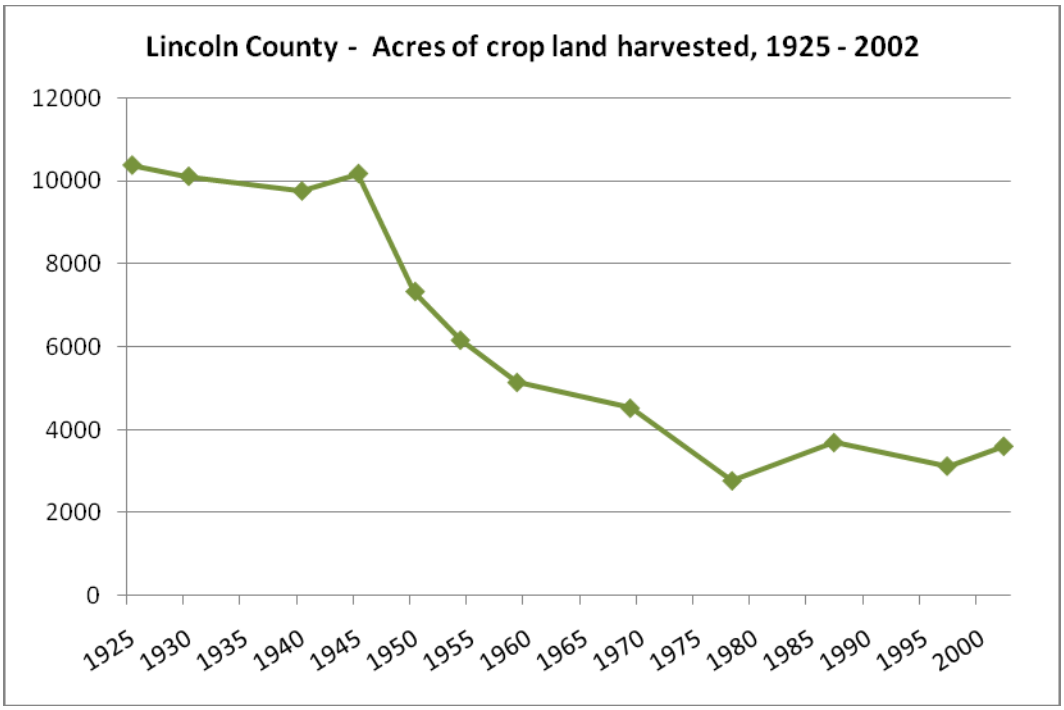
The number and acreage of farms in Lincoln County have decreased since the earlier part of the 20th century. Figure 17 shows this trend compared to what was happening at the same time in the state as a whole. While the amount of acreage in farmland continued to increase in Oregon until 1959 (USDC 1961), in Lincoln County there were two separate drop-offs, one in the 1920s and1930s and another after 1945. The state as a whole saw a steep decrease in farm acreage after 1959 but it was much less dramatic and of shorter duration than what occurred in Lincoln County. That said, a moderate but steady decline in farmland acreage statewide is evident from 1959 to the 2002.

Figure 17. Comparing acres of land in farms in Oregon and Lincoln County (Censuses of agriculture 1910 – 2002).



Not surprisingly, the acreage of crop land harvested in Lincoln County between 1945 and 2002 (Figure 18) also decreased quite rapidly, mirroring the decline in farm acreage displayed in Figure 17.

Figure 18. Acres of crop land harvested in Lincoln County (Censuses of agriculture 1925 – 2002).



The declines in farms and acreage in farms through the 1920s and 30s was most likely related to many old 160 acre homesteads being sold into industrial forest land, or through nonpayment of property taxes, reversion to National or State forestland (Taylor 1938, Wakefield 1942). This evidence was supported by comments from focus group participants on farm succession, or lack thereof, seen in the county: “old folks die or sell to timber companies and young folks leave farming.”

CHAPTER 5: CHARACTERIZING FARMS

Statistics and historical information can give a sense of what general trends occurred over the past decades, but only current residents can tell the story of today. I interviewed over 30 farmers, most from Lincoln County and a few from other areas who were vendors at local farmers' markets. Four local farmers' market managers also shared their insights into what's happening with local agriculture. Recently, the high traffic, high tourist areas have experienced growth in the number and size of existing farmers' markets. Meanwhile, areas less frequented by tourists, such as Toledo, struggle to attract both vendors and customers. And what role do local restaurants play in local agriculture? There are success stories here, but not as many as farmers and some committed restaurateurs would like to tell. This chapter presents the results of my interviews with local farmers.

Old Pioneer and New Pioneer Farmers

I conducted semi-structured interviews with 24 farmers living in Lincoln County. I asked them to describe their life experience, history on the land and experience farming (See Appendix B). The average age of Lincoln County farmers according to the 2002 Census of Agriculture county level data is 55.4 years old. None of the farmers I spoke to were under 40 years old and I estimated (did not always ask) most were in their 60s or beyond.

Soon after the interviewing process began, it became apparent to me that there were basically two kinds of farmers in Lincoln County. There were those who had been born and raised in the area[3], growing up on a farm, and were therefore 2nd or 3rd generation farmers, hence, "Old pioneer" or "Nth Generation." The other group was

[3] The only exception to this rule is the farmer named Charlie I will discuss in depth – he bought his land in the 1940s and therefore has been living in the county for over 60 years. Given that he has an entire lifetime of experience as a Lincoln County landowner and farmer, I have included him in the "Old pioneer" category, which he exemplifies in relation to all other attributes of my generational typology.

composed of 1st Generation "new pioneers," people who moved to the area as adults, in many cases chasing a dream of getting "back to the land" through farming.

One third of those interviewed owned and operated family farms passed from a previous generation; these were the largest farms, averaging over 120 acres involved in food production (pasture, hay, eggs, vegetables and fruits). Two thirds were first-generation newer farmers with average land tenure of 13 years on small parcels averaging less than 4 acres involved in food production. I also inquired about total acreage but the larger landowners particularly were inexact with their answers, e.g. "over 100 acres," thus making the calculation of average farm size impossible. However, "acres involved in food production" was a figure all farmers had a good handle on. These two categories of farmers, the Nth Generation and 1st Generation have distinct characteristics. Table 3 shows how the two groups differ based on responses to interview questions.

Table 4. Comparison between farmer generational typologies.

Nth Generation farmers (old pioneers)	**1st Generation farmers (new pioneers)**
8/24 farmers interviewed	16/24 farmers interviewed
All respondents living on a Lincoln County farm passed from previous generation *or* lived there over 60 years	Most respondents from out of state
Larger acreages (> 120 acres average in production)	Small to medium acreages (<4 acres in production)
All raise beef	Diversified - none raise beef exclusively
Fewer marketing options utilized	More marketing options utilized
Less interaction with local community	More interaction with local community
Low level of interest in new kinds of production or methods (e.g. raising a new crop or animal)	High level of interest in new kinds of production or methods (e.g. investing in a new hoop house)
No certified kitchens	Several certified kitchens in use; high interest in creating value-added products

Forested uplands often used for timber income	Forested uplands generally small and not considered for timber income (at least currently)
Farming worldview: large cultivated acreage is required to make a living	Farming worldview: smaller acreages are sufficient when intensively managed

All of the large landowners have lived most of their lives in Lincoln County. The newer farmers come from various places but generally from out of state. All the large land-owners raise at least some beef. Crops grown and raised by new farmers include: fruits, vegetables, herbs, poultry, eggs, lamb, pork, beef and goat milk. Notably absent from mention was cow's milk.

The Nth Generation farmers tend to sell their cattle to a particular wholesale cattle buyer in Junction City. As a last resort they take them to auction. Many also sell sides of beef via word of mouth to neighbors and friends, but this is logistically challenging because it requires the customer to pick up the meat at a butcher in the Willamette Valley. A mobile slaughter operator was just getting started in business near Newport at the time of this research, potentially reducing the distance customers would need to drive to pick up their cut and wrapped meat. A lack of options for marketing their beef was a frequent lament heard among these established farmers.

1st Generation farmers tend to have varied marketing strategies. Most sold through at least two of the following modes or venues (in decreasing order of importance): "word of mouth" (i.e. friends/neighbors); farmers' market; restaurant; retail store; U-pick; farmstand ; wholesale; cooperative. Newer farmers seemed to be much more interested in new production options, such as finding out what other crops they could grow and what technologies might assist them in their endeavors. The lack of interest in other production options shown by Nth Generation farmers is related to the perception that their acreage is already "maxed out" with what they are doing now – grazing and hay production. Finally, several 1st Generation farmers either had their own

certified kitchens[4], used someone else's (e.g. South Beach community center kitchen) or had plans to set one up. None of the Nth Generation farmers had certified kitchens or mentioned needing one.

In some discussions with Nth Generation landowners it became apparent that they equated larger acreages with financial success. This is an understandable attitude given that a certain number of acres are required in order to meet the caloric needs of grazing animals. For farmers raising grass and hay-fed cattle it is necessary to have an extensive amount of land. But at least for one long-time landowner this attitude also translated into "needing to put more acreage in production" if he were to make a serious attempt at growing and selling crops. "I've seen what I can do here with my acreage; I've given away over times hundreds of pounds of produce but it's the marketing of it that is difficult." This viewpoint stands in contrast to three of the most financially successful farmers I interviewed in Lincoln County who each intensively farm two acres or less. Not only are they apparently in the black (and thus finding markets), they had no inclination toward increasing production by expanding the amount of land under cultivation. While land area constraints figure into this choice, my sense was that this was not the most important factor in their decision-making. At least one of these full-time farmers who had been successfully selling at the local farmers' markets indicated that he was satisfied with his current level of production on his very small acreage. While he had the land and other resources to expand production, he said that it would require additional effort that he was not interested in making.

While they may value the forests on their lands for different attributes, having land in "forest" or "timber" was common across generational groups. About two-thirds of farmers interviewed had some timber land, usually meaning land on a slope, "upland," implying land unsuitable for crop production or pasture. Nth Generation farmers were more likely to mention having harvested their timber at some time and

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[4] Oregon Department of Agriculture Food Safety Division regulates and issues licenses for Domestic Kitchens, also known as "certified kitchens."

refer to the age of the current stand, whereas 1st Generation farmers tended to mention wildlife or other values.

There are also important similarities between Nth Generation and 1st Generation farmers, including the economic challenges they face and how they respond to these challenges. Rather than being a difference in character, responses seem most determined by the zeitgeist, or circumstances that are mainly determined by factors beyond the control of individual actors, in particular the phenomenon known as globalization.

Similarities between Old Pioneer and New Pioneer Farmers

With a few exceptions, almost all Lincoln County farmers interviewed obtain significant income from off-farm work, either their own or their spouse's. Farmers with less than eight years on their land all had off-farm income – half of those (4 of 8) came to farming only after retiring from other professions. This is consistent with national trends but it is interesting to note that off-farm income has become increasingly necessary.

The range of answers to the question: "If you have additional acreage that you are not farming, why not?" cuts across the old pioneer/new pioneer divide[5].

- 10 of 24 respondents cited forested land or other natural resource limits;
- 10 of 24 respondents cited limits to labor and time;
- Poor health or old age cited by 3 of 24;
- 3 of 24 indicated that their farmland is currently being used to capacity

These results, as well as answers to the complementary question, "Is there excess capacity (i.e. land, irrigation, equipment, labor, etc.) on your farm if you wanted to produce more?" support evidence from recent Census of Agriculture and OAIN data that there is underutilized farmland in the county. My farm interview results give an idea as to why this might be the case.

[5] Note that because two respondents gave more than one factor as a reason, the numbers total to 26 rather than 24, the actual number of respondents.

Natural barriers (or real assets in the case of timber) often stand in the way of increasing production. Lack of access to irrigation water in the summer was mentioned by two respondents as a limiting factor on their acreage. More commonly, upland forests on sloped land, riparian forests along creeks and other wetlands prevent farmers from growing crops or pasturing animals on certain parts of their land. In addition to being a barrier to food production, however, forestland can also provide significant income once the trees are harvested. More of the large acreage farmers than small stated that their land was “maxed out” in terms of production and often referred to their growing timber in the upland portions of their land.

Time and labor are important limiting factors to increased food production in Lincoln County. While a few of the farmers indicated time and labor constraints were limitations they plan to overcome, the main sentiment expressed was that expanding production would require more effort at this point than it is worth. A typical response was that the farmer probably could produce more “if there were more demand.” Another farmer said that she “would hesitate to (expand production) because we're too busy; we would have to feed (livestock) more and that costs money.” One response invoked the inherent risk of farming and a lack of surety that the next generation will continue on the farm: “We have extra land, but it takes 10 years (for blueberries) to produce fruit – it’s a big investment for an uncertain future.”

Sustainability

When asked about production practices it was striking how many respondents gravitated toward describing their operation as “organic- not certified” (14 of 24). In fact only one farmer was currently certified organic. A typical response to this question from produce growers was something like "We identify with *beyond organic and sustainable practices.*" When asked why they did not get certified organic most mentioned the burden of paperwork, the expense, or both.

This consciousness of sustainable practices was not limited to produce growers. Though none of the beef producers claimed to be raising their cows organically, they

were quick to mention their animals are grass-fed (grass when available, hay in the winter). Many also offered that they use no hormones and that their animals are "free-range." It is also interesting to note that unless their animals are marketed locally, these farmers do not receive a financial incentive for the added quality and other benefits that attend these practices. The cattle buyer at the auction yard won't care whether the animal destined for a distant feedlot was raised in a healthy and humane setting, although one's neighbor might.

In addition to an overarching concern about sustainability, what these responses also point out is sensitivity to what consumers want, that is, farmers are thinking about marketing angles. This is consistent with the observation that these farmers tend to employ various marketing methods, that particularly the 1st Generation farmers are entrepreneurial people actively exploring their options.

Another similarity between the Nth and 1st Generation farmer circumstances was how little generational continuity there seemed to be foreseen in the farm's future. The historic American farm succession pattern was for children, usually a son, to eventually step forward to take over management and ownership of a family farm; the situation in Lincoln County today seems quite different. Although many farmers have children to inherit the property, they do not appear to have children to inherit the livelihood. Only two people had some idea for how their farm might continue as a farm, one had an interested young grandson and another knew a young couple new to the area eager to rent land for row crop production. In general, among the families interviewed, there does not appear to be strong interest in farming among the next generation of kin.

Profiles of Old and New Pioneers

It is not only the size of farm that creates differences between the two groups; times have changed the form that agricultural enterprises take as the following examples show.

Charlie the Nth Generation Farmer

96 year old Charlie has lived along the Yachats River since 1943 when he bought a functioning dairy from a friend. The dairy came with 25 cows and a milk route along which they delivered bottled milk to local families and restaurants. Remarkably, Charlie paid off the entire property in 2 years on income from the dairy. He had that 40 acre dairy for 18 years and ran it with help from his strong wife who milked and could "heft those milk jugs around like any man." He also had a business partner to help with milking and delivery. Once the industry standard process changed to paper cartons and grade A milk, small dairies went by the wayside. Charlie also agreed that electricity and home refrigeration becoming common were important factors in the overall switch by consumers to store-bought milk.

For the past several decades Charlie has mainly raised beef on 100-plus acres, butchering his own cows and selling the meat locally for many of those years. Charlie has trucks, cold storage, cutting room and slaughterhouse and he used to make corned beef, locker beef and smoked ribs. At some point, however, a government food safety inspector came out to his place and told him that what he was doing was illegal. Although it didn't stop him right away, Charlie's slaughter operation soon ended since he could not meet the legal requirements and standards. He also remarked that people these days are simply not as willing to come out to his place to pick up their meat. His only marketing outlet currently is to sell his cattle at auction in Junction City, a distance of approximately 95 driving miles. He welcomes news of a local businessman planning to start a mobile slaughter business based out of Newport.

Asked if he knows other producers he said that lots of people raise a few beef here and there. There used to be a lot of cows out at Five Rivers but now they are just letting that land "lay dead." He claims there used to be more open land in the county -- 10 times as much (referring partly to land cleared of trees on sloped ground, i.e., not farmland per se). In 1936 almost the whole forest between the Yachats River and Waldport burned. He says there used to be a lot more cows around, but not so much

other crops. However, cattle prices went down and people started growing more timber. Charlie also mentioned that Waldport once had its own cheese factory.

Charlie also used to have a garden that was highly productive: he sold cabbages, cucumbers, cauliflower, green peppers and artichokes. Though he is cutting back on his farming activities, he currently maintains 60 brood cows and also cuts hay: "I cut everybody's hay around here because I have the machinery." His are the old-fashioned 40 pound bales that most people can heft around – in contrast to the modern practice of making 1,000 pound bails that must be moved with a tractor. Charlie complains that 1/3 of such a bale is wasted because the cows walk all over it. Hay has been scarce this year and it costs $150/ton to pick up hay from the Willamette Valley and there's competition for that, "got to be right there when the semi comes in or you won't get any" he said, referring to an area near Corvallis that serves as an unloading area for hay trucks.

In an area surrounded by forest, I found it interesting that Charlie had a high-efficiency pellet stove as the main heat source in his home. He mentioned that the pellets had been scarce because it was a very hard winter around the country. The pellets are being rationed around the south county area -- you can't just buy as many as you want. He also pointed out that corn and soybean prices are up due to the demand for biofuels. These observations indicate a strong sense of the extent of local integration with national markets for products as well as one man's sensitivity to rising food and energy prices.

His lower place (downriver) has timber on it and it has been harvested twice since he bought it. It's been growing now for 12 years. He was sued once and the timber proceeds bailed him out. He has a very strong sense that forestland is just going to waste if it is not harvested and claims the elk are starving because of a lack of clearcutting in this area. Indeed the Fish and Wildlife department have elk feeding programs. He blames the "socialistic leadership (we now have) for shutting down the forests." He laments that there are hardly any mills left that accept the big timber.

Craig the 1st Generation Farmer

Craig has owned his land near Lincoln City for 14 years, 7 of those years he has grown vegetables to sell commercially. Now in his early 50s, Craig is a good example of a 1st Generation farmer both because of the size of the acreage farmed and because of marketing methods employed. He has just 1.2 acres in production. His property includes wetland acreage down slope of his home and gardens that he allows the nearby national wildlife refuge to manage as a perpetual wildlife conservation area. On the upper part of the property are 30 acres of timber.

Craig grows a wide variety of certified organic vegetables, including lettuce, leafy greens, tomatoes, snow peas, English peas, peppers, green beans, zucchini, herbs, basil, carrots, and onions. As an example of the productivity of this small plot, he estimates that they produce 100-125 pounds of lettuce per week in summer. He also tried growing strawberries once but found it to be too much effort. Craig does receive help with some aspects of farming and running the farmstand from his spouse.

Not only does this small farm produce a wide variety of crops, this farmer employs many methods to sell his products, including restaurants, local independent grocery stores and an organic wholesale company. He actually started with a farmstand and branched out to direct sales to local restaurants. Two years ago he built a larger farmstand and would like to start making some packaged products like pesto. He looked into on-farm food processing but he would need to make several improvements in the farmstand structure in order to meet food safety requirements for a processing license from Oregon Department of Agriculture. Instead, Craig is utilizing experience and a social network formed during an earlier career in food preparation to use a local restaurant's kitchen during times they are not open.

Craig mentions that another small acreage farmer from the Yachats area inspired him by selling wonderful fresh produce direct to the local restaurant where Craig used to work. Craig also mentioned that he has not seen demand for locally grown products increasing in the area. In some cases, demand has actually declined. He mentioned Salishan, a large local resort, as one example of a business that had once been very

interested in fresh local produce but that is not the case currently. In later interviews it was confirmed that the head chef at Salishan had been very dedicated to buying local produce but that once he left their employ, Salishan's commitment to local farmers seems to have been replaced with a more mainstream buying policy.

Craig feels that there is no excess capacity on this farm if he wanted to produce more; to grow larger would require a tractor or more (i.e. hired) labor and he is not interested in that path. His success with the farming enterprise seems to accord him a high level of flexibility to choose opportunities that suit him and his farm. One gets the general impression that Craig is doing what he loves to do and is not interested in nor feeling the financial pressure to increase his level of production.

Different Farms, Farmers and Worldviews

The stories of these two farmers exemplify many of the differences between 1st and Nth Generation farmers in Lincoln County: the contrast between size of acreage, number of marketing strategies employed, diversity of products offered, land use, and length of time spent living the farm life. Overall it seems like the size of the acreage is most important in structuring a farm and is therefore the variable most strongly influencing which typology a farm and farmer fits into. According to the structure their farm takes, the two types observed are: market gardeners with or without small livestock and beef cattle producers[6]. Two separate worldviews emerge. The Nth Generation farmer sees the need to maximize grazing and haying land while at the same time keeping less suitable lands in timber. His is a more expansive, larger scale view of land while the 1st Generation farmer tends to maximize the small area he has with intensive cultivation. At the same time he is capitalizing on the marketing edges of freshness, sustainable growing practices and community interaction to market his products to the local population. Whereas the Nth Generation farmers, the ones with the most land, have become separated from local supply chains, the 1st Generation

[6] One 3rd generation larger acreage commodity fruit grower who also owns cattle and forest land is included in this cattle producer/Nth generation group.

farmers are looking at how they can integrate themselves into the local food system by way of creating new or exploiting existing marketing niches.

Doug's farmstand exemplifies the 1st Generation farm theme of interaction with community. For many of these farmers this means simply that they interact with customers in making restaurant deliveries or by selling at the farmers' market. Others have taken this interaction a step or two farther by inviting customers to come to the farm to see it firsthand by buying at their farmstand, seeing the actual place where the food they are buying is grown. Such interactions with the local community were undoubtedly more common to larger farms in previous times, as Charlie's story about his slaughter operation so colorfully demonstrates. First he had a milk route to deliver to customers, later, when he switched to beef production, he had people come out to his farm to pick up their meat. Because of health regulations, those who raise cattle exclusively no longer interact with customers on-farm. This experience mirrors the restructuring of larger farms in the broader American context of farming since the Great Depression (Adams 1994). Farms that once grew a variety of products and sold to customers in the local community transformed due to market pressures into farms growing just a few commodities to be exported to some other place.

Another difference between the two groups is that often the 1st Generation farmers are coming to farming after having had other careers. Several have moved to the area specifically to retire. They bring to farming in Lincoln County, if not a youthful zeal, at least a kind of enthusiasm for the farm way of life that only someone starting a fresh endeavor can bring. Interestingly, this enthusiasm seems in many cases to be buoyed by large stretches during the winter months spent in warmer and sunnier climes. Several of the 1st Generation farmers, as well as a chef and a farmers' market manager, mentioned that they routinely spend the greyest Pacific Northwest weeks in Mexico. This tendency to work seasonally is at least partly an adaptation to the culture of this part of the Oregon Coast which is so influenced by the tourist economy ebb (winter) and flow (summer).

Here are a few points that emerge from the research results presented above. First, there does appear to be demand for local food products from the side of consumers as represented by farmers' markets and some restaurants. In fact, at the farmers markets there seems to be a real dearth of local farm products. Yet, there is a certain "disconnect" between local demand and supply. Lincoln County farmers say their most critical barriers to increased production are (aside from natural constraints) their own lack of time and labor. In some cases this is a reflection of a lifestyle choice in the sense of feeling content -- that they have or are doing enough. In other cases farmers are truly maximizing the output of their land, usually in one of two different ways: either they are raising livestock or intensively cultivating fruit and vegetable bearing plants and small livestock. More often, however, it is rather that the monetary reward per unit of effort is not enough to entice them to produce more; it does not "pencil out." A typical response from such a farmer was that he or she probably could produce more "if there were more demand."

The split between large-scale and small-scale farmers is another very interesting development which seems to reflect something about the decline of agriculture in Lincoln County over the past 50 years. A comment from one of the few large-scale farmers in the county is illustrative, he was talking about how planting crops for the future is "a big investment for an uncertain future." This statement makes even more sense from the perspective of a landowner who has a larger stake in what goes wrong on a larger acreage. Whereas smaller agriculturalists, such as those coming into Lincoln County from elsewhere and occupying smaller "niches," have smaller properties and intensively manage a higher diversity of crops. There is a hedge in that strategy alone; if one crop fails or isn't as popular at the market, odds are that something else will work out better. Fortunately for most of the cattle owners in Lincoln County, cows are a pretty safe bet as well. Could small-scale agriculturalists end up having an advantage that is perhaps counter to the conventional wisdom of economies of scale (i.e. "success") through bigness? What agricultural strategies will work well for long-term success of farming in Lincoln County is an open question. The next chapter examines

what occurred over the past few decades to precipitate the declines already documented in previous chapters.

CHAPTER 6: WHY DID FOOD PRODUCTION DECLINE?

Why has food-producing agriculture declined in Lincoln County since the early to mid 20th century? There are many interrelated factors to discuss but one that is apt to get overlooked is that Lincoln County's agricultural output always was and still is small compared to most other western Oregon counties. The relatively small arable land base of around 20,000 acres is probably one of the key reasons agriculture had a hard time holding its ground. Fewer farmers meant less of a political constituency to garner support from local political leaders and an overall low profile for agriculture that might have meant a lack of intercommunity support. Homesteaders near the town of Siletz could join the Siletz Grange Hall, a chapter of a national organization for farmers. Grange women of the Siletz community would organize as needed to supply prepared food to families experiencing difficulties such as serious injury or illness (Strome 1986). While such neighborliness is not a relic of the past, a farming-specific community based organization with its own infrastructure is long gone from Lincoln County. Though relatively small in terms of the land base occupied and commercial scale, food production was a much larger percentage of the overall economy 60 years ago, after which time farm production in Lincoln County began a rapid and sustained decline (see Figure 19).

Socio-cultural Factors: "If you bought it here, a truck brought it here"

Lincoln County's physical isolation from population centers in the Willamette Valley would have hindered local farms from selling in valley markets. In fact the Coast Range of Oregon continues to be an area prone to landslides that can close highways for long periods of time in the winter months, for example, storms in December of 2007 caused landslides and other damage that closed highway 34 for 10 days and Highway 101 in 2 locations along the northern Oregon coast (Albany Democrat Herald 2007; The Seattle Times 2007). However, this same isolation has not equally hindered semi trucks loaded with food and other products from rolling into the

county, particularly on the major highway arteries between Portland and the coastal communities that line Highway 101. Focus group participants summed up this phenomenon when discussing how the outside world has amply supplied Lincoln County with food with the slogan seen on some semi trucks "If you bought it here, a truck brought it here."

This factor of importation of food from places far away is inextricably linked to the profitability of in situ agriculture. This kind of outside competition was noted by a focus group participant with the statement, "You can buy for $0.25 (in the store) what might cost a Lincoln County farmer much more to produce." A story supportive of this idea of encroachment of multinational food companies on farmers in Lincoln County came to me from one of the largest and most successful farmers in the Siletz area. A few years ago he and his wife had tried, quite successfully for a while, to market their berries to local restaurants and bed and breakfasts on the coast. At some point a large national wholesale food supplier told one of their shared customers "Sure, you can buy blueberries this month locally, but don't ask us for raspberries next month." In addition to it being time and fuel consuming to make relatively small deliveries to these establishments, this competition from a large company able to supply a consistent and cheap product year-round caused the couple to end those direct marketing efforts.

A lack of labor emerged in the interview process as a key limiting factor for present-day agricultural production and it seems that labor has become more difficult to attract over time. One farmer mentioned that there are very few mothers who come out with their kids to pick berries out of a notion of thrift (canning) and to make use of their children's energies, he says, "Those days are gone." In previous decades it was common for kids to come out to pick each season in order to earn money but in recent years a young worker told him, "My dad says you're a slave-driver." In response to such sentiments the farmer laments the work ethic among people today and remarks, "Well, I do expect them to work hard, guess that makes me a slave-driver." Another Siletz valley farmer recalls growing up on the family farm and how in addition to hiring seasonal labor to help put crops into the barns, "The whole family pitched in" on farm chores, and back then average family size was much larger, providing more labor for

the farm. With less cheap labor, profits are low to non-existent according to some present-day farmers. This issue of a lack of labor and low profits is closely related to the low level of generational succession in Lincoln County farming already discussed.

Few interviewees spontaneously mentioned lack of processing as a limiting factor and furthermore it is difficult to say which declined first, production or the processing. Nonetheless, focus group participants concurred that the lack of food processing facilities (creameries and canneries) in the county caused marketing options to shrink for farmers, which continues to hinder development of a robust agricultural system.

There can be no doubt that land use has changed greatly over time in Lincoln County. This photograph (Figure 19) of Hendricks Pea Ranch from 1929 shows a kind of agriculture that simply does not exist in Lincoln County today. This open field with the Pacific Ocean vista is now filled with houses, not peas. These same land use transformations have occurred on land far from the beach, as large farms have over time given way to rural residences on smaller acreages. However, Oregon's land use planning system has also constrained the most sprawling growth with urban growth boundaries and zoning rules. Some farmers in focus groups thought that in some cases zoning laws designed to protect farm and forest land from development were too restrictive. An example would be if a farmer wanted to build a second dwelling to house extra laborers, this would be a very difficult prospect given current land use laws.

Figure 19. Hendricks Pea Ranch, 1929, view south toward Lincoln City. Photo provided by the Lincoln County Historical Society.

Interdependent Biophysical Factors

Another common theme appearing in interviews and focus group discussions was the climate. Lincoln County's cool maritime climate presents area farmers with certain biophysical challenges which can limit certain kinds of production. Cold, wet springs often make it difficult to get crops going, causing the coast to be "out of sync with the Willamette Valley," which is why "they (valley farmers) are canning corn when our beans are in season." Such lack of synchronicity, some focus group participants contended, limits the ability of Lincoln County farmers to market their crops to a valley processor. In addition, summers are often much cooler, particularly nearer the ocean than in the Willamette Valley, making it much harder to accumulate enough heat units to grow heat-loving crops like sweet corn and tomatoes. Though it can and is done, year-to-year variation in summer heat makes these crops risky to grow.

Another important limit is low soil fertility caused by high rainfall (leaching). One 'master gardener' participating in a focus group commented that cool temperatures can also make it difficult to get compost up to the appropriate temperature to "cook"

weeds and pathogens. In addition there are many different microclimates that must be uniquely adapted to for successful farming. It is a mountainous county with steep slopes making soil erosion problematic on the one hand, and with areas of low pH (acidic soil) and sulfidic (anaerobic), heavy clay wetland soils on the other.

Though it seems unlikely given all the rain received in winter, water is a limited resource during typically dry Oregon summers. Irrigation can be problematic for Lincoln County farmers because shallow wells and creeks go dry during the growing season and deep wells near the ocean are sometimes salty. The rights to use surface and groundwater are administered by Oregon's Water Resources Department (OWRD). When granted, these "Water-Use Permits" allow a specified quantity of water to be used from nearby creeks for irrigation. Because the maximum amount of surface and groundwater permits have already been allotted in most watersheds (OWRD 2008), focus group participants felt that it is "impossible to get water rights" from the OWRD.

Another frequently mentioned biophysical limitation to food production in Lincoln County is wildlife – birds, predators, ungulates, and pests either eat up crops or compromise fencing. Deer and elk have long been a problem as this testimonial about pioneer gardens illustrates:

> Sometimes the deer would eat the garden when it was about ready to harvest; they could clean out a garden overnight. Deer also would stand on their hind legs to get at the fruit in the orchards. After such an experience, one tended to just eat venison for a while! (Strome 1986:38)

Voracious deer and elk still abound in Lincoln County, and even bears are known to feed on cultivated crops. As one Siletz farmer put it during an evening phone conversation: "Around here, if you grow something, the elk smell it and come in. Bears will cross the river to eat my apples. They're probably out there right now." The same farmer mentioned that he knew a man from Logsden who tried to grow organic lettuce on contract one year, only to have his crop decimated by elk. Predators were frequently mentioned as a significant threat to those keeping small livestock and poultry. For example, a farmer near Yachats mentioned that she might be interested in raising pastured poultry but that it would be impossible at their location due to

predators. She said a bobcat had taken off the side of a barn recently as it went after her poultry.

Farming in the Trees

According to the Soil Survey of Lincoln County, it is "recognized as one of the major timber growing areas in North America" (Shipman 1997). It was also once known for salmon and these two facts go together in an ecological reality that has shaped the socio-political landscape of the region over the past several decades.

At the time of settlement, western Oregon and Washington were densely covered with trees, and though significant amounts of timber continue to be harvested yearly in this region, it is a landscape still dominated by coniferous forests (Franklin and Dyrness 1973). In the part of the Coast Range of Oregon which Lincoln County comprises, there are two major forest types, the Sitka spruce zone found along the coast and up the river valleys, and the Western hemlock zone found inland on relatively higher elevation and drier sites. Forest scientists describe the Sitka spruce zone thusly: "The coniferous forest stands in this zone are typically dense, tall, and among the most productive in the world" (Franklin and Dyrness 1973). For the purpose of ecological description the other major zone is named after the "climax species," Western Hemlock, and is the "most extensive vegetation zone in western Washington and Oregon and the most important in terms of timber production" (Franklin and Dyrness 1973). If this zone were named based on purely commercial considerations, no doubt it would be named after the prolific Douglas fir, Oregon's state tree.

These forests and their immense trees were logged at a furious clip during the early to mid 20th century. Logging camps and timber mills sprang up along the coast and cutting huge trees was a significant income source for many early Lincoln County pioneers either as a full or part-time occupation (Castle et al. 1978; Strome 1986). Logging on industrial forest lands and small privately owned lands continues to be a significant source of income in Lincoln County to the present day. In contrast, in the 1990s the US Forest Service, which manages large tracts of forested land in the county, was compelled by new management rules to reduce unsustainably high harvest levels in

order to protect endangered species such as the Marbled Murrelet, Spotted Owl, and wild coastal Coho salmon.

Like most salmon populations in Oregon, wild Coho and Chinook salmon who spawn in rivers and streams along the Oregon Coast experienced significant population declines due to adverse ocean conditions and the landscape-level habitat modifications which accompanied Euro-American settlement (Myers et al. 1998). Commercial fishing of these species has also contributed to declines. Salmon habitats have been significantly changed by many land use activities such as homebuilding and farming, but logging and its accompanying conveyance activities, such as splash damming and road building, have had a disproportionately negative impact on riverine habitats. The splash damming came before roads as the main way logs could be transported from higher in the watershed to sawmills down along the bays. As the name implies, dams were created of felled timber until enough water accumulated for the whole mess of logs to be suddenly released ("splashed"), flushing them downstream (Lichatowich 1999). Dynamite was used liberally to blast out the many logjams that occurred along the way to the mill. The trees gouged and destroyed stream banks turning rivers brown with mud. In his book *Salmon Without Rivers*, about the history of the Pacific salmon crisis, fishery biologist Jim Lichatowich writes:

> Each splash of logs and water left behind a devastated river with fewer and fewer of the ecological attributes the salmon needed in their habitat. Hiding places under overhanging banks were gone. Spawning gravel had disappeared, and the danger of being killed by yet another load of logs was just a few hours or days away (Lichatowich 1999:63).

These salmon were an important food source, along with venison, for pioneer families and indigenous people alike. They also supplied extra money when sold by the fish or by the pound and any excess provided an excellent source of fertilizer for the garden (Strome 1986). "In the early days of settlement it was not uncommon to catch a 75 to 90 pound salmon. Fishermen received five cents a pound from the Newport Cannery for their catch" (Castle et al. 1978). However, the bounty could not continue with so much habitat destruction reducing salmon reproduction in coastal streams (Lichatowich 1999); as one pioneer observed:

> Until the early 1920s the Siletz River was a fisherman's paradise. Salmon abounded, so many you could see a constant disturbance in the water when the fish were going upriver to spawn…there were trout also, and in summer season eels were plentiful (Strome 1986:35)

She goes on to say how delicious the salmon were and that her five children could eat all they wanted since they were so cheap (as in free, from the river just out the door), yet only a few decades later, "now our grandchildren can only have them for special treats as salmon cost about $9 per pound" (Strome 1986). The big trees and the big salmon are intertwined, and although there are fewer of each in Lincoln County today, landowners continue to cash in on some of the most productive timber lands in the world.

It seems that of all the factors considered as to why food production in Lincoln County has not thrived and expanded with population growth in the past several decades, the advantages of growing trees must be one of the more important. Natural succession favors the native conifers because they are ideally suited to the winter wet and summer dry conditions typical of western Oregon (Franklin and Dyrness 1973). In Lincoln County, any piece of land when left alone will quite naturally revert, eventually, to growing Sitka spruce or Western hemlock as the dominant species. On burned or overgrazed land it might take some time for the conifers to gain dominance in the system; weedy species followed by nitrogen-fixing woody species such as alder or other hardwoods will take over for a while, but eventually conifers will come back unless actions are taken to prevent the normal stages of plant succession.

The "old" pioneers, those whose families have a history in Lincoln County, remember a time when the landscape was more open. One farmer interviewed said that between his place (approximately mid way between Siletz bay and the town of Siletz) there is at least one-third less farmland now compared to back in homestead days. Another old-timer from the Yachats area claimed there used to be 10 times more open land in the county as there is now. He was referring to both upland (mostly forested) and lowland (where most of the pasture and cropland has traditionally been). These observations are probably related to land that was either cleared through logging or was burned in a forest fire before becoming reforested. In the interests of self-preservation,

homesteaders needed room to grow vegetable gardens, plant their government mandated orchard, and have room for livestock to forage. This photo (Figure 20) of goats grazing what looks to be open rangeland in a logged and burned landscape was probably a much more common sight in the early part of the 20th century.

Figure 20. Photograph of goats grazing burned and logged upland forest type. Photo provided by the Oregon State University Archives.

Although the following vignette does not include dates, we can assume that it refers to a time after the 1920s when, according to her observation noted above, the Siletz River was no longer the "fisherman's paradise" it had once been. Rachel Strome writes:

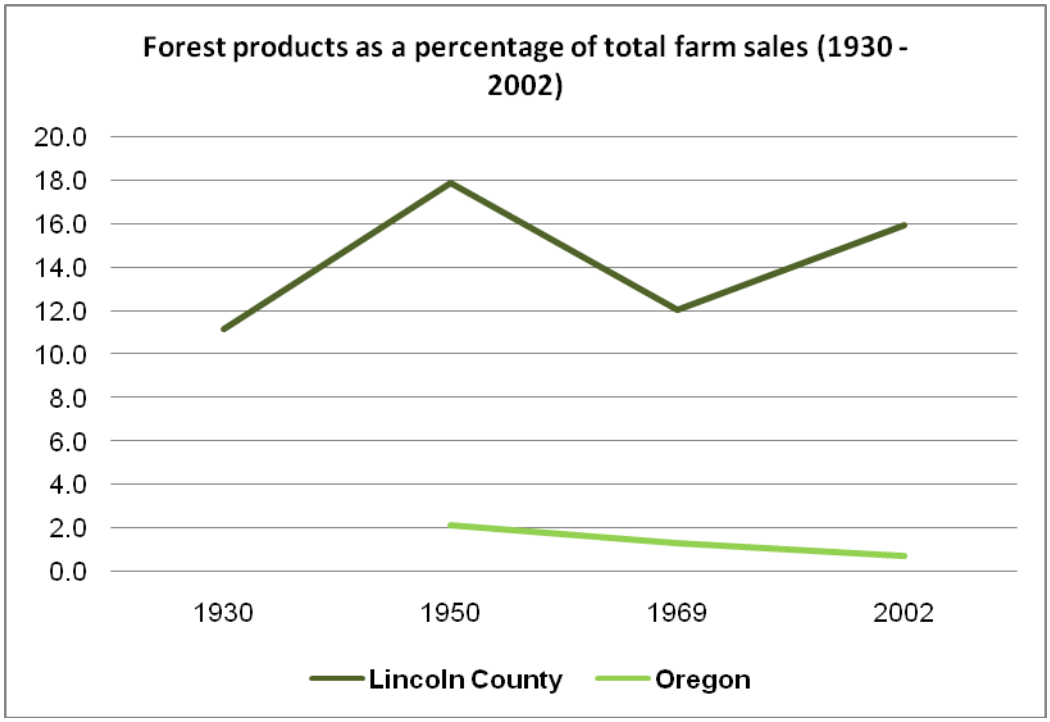
> As the country became more developed and fishing had slowed, people got cows and sold milk to the cheese factory in Tillamook County. Then milking cows was an important occupation but gradually logging took over and it soon was paying more. Logging was hard work, involved long days and paid fairly well. As the county was heavily timbered, each man had to cut trees to build a house and cut more trees to clear a farm, so boys learned at home how to fall trees (Strome 1986:66).

Interviews and census data converge on this same conclusion that as earnings from logging went up relative to dairy farming, people gave up on milk production as an

income source. Charlie from Yachats indicated that there used to be a lot more cows around, but not so much other crops. In the four cases where interviewees mentioned they or their forebears had kept dairy cows, all four farms had shifted their pastureland from dairy to beef cattle production, which is less labor-intensive, while maintaining land to grow hay (Recall figure 18 indicates that hay production has been consistent over several decades). Far from being a safe bet, however, beef prices fluctuate, and as Charlie put it, "As cattle prices went down, people started growing more timber." He mentioned that he has harvested timber on his lower place twice since he bought it in the 1940s; the most recent rotation is now 12 years old. Another farmer from Siletz, when asked about the cattle industry and potential for greater production in the Lincoln County area, said there is much more potential, with about 20 "commercial sized acreages." He didn't know, however, "where the livestock industry was headed in this area."

An indication of the relative importance of forests and timber in Lincoln County is seen when comparing county statistics to Oregon as a whole. Forest products as a percentage of total farm sales in Lincoln County fluctuated between 12 and 18 percent during the four census years for which data was available, 1930, 1950, 1969 and 2002. Forest products composed just 2.1 percent and under of total farm sales for the later three decades in the state of Oregon as a whole (Figure 21). This is to be expected since most Oregon counties are not as mountainous and therefore heavily forested as Lincoln County.

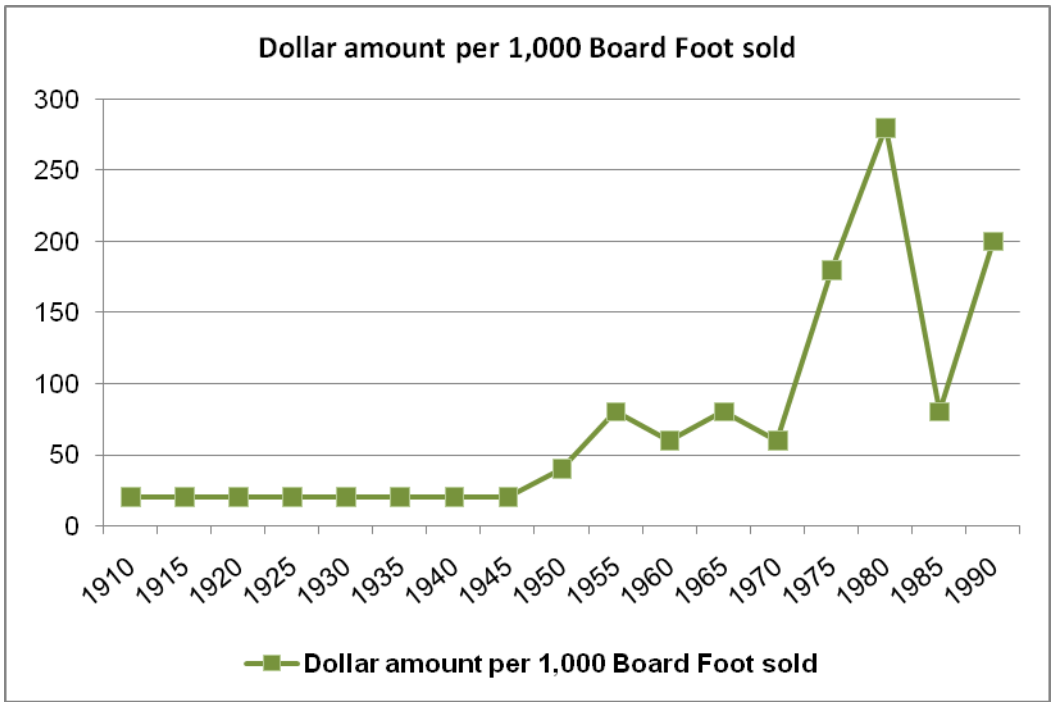
Figure 21. Comparing Oregon to Lincoln County in forest products as a percentage of total farm sales (Censuses of agriculture 1930 – 2002).



Price of Wood versus Price of Food

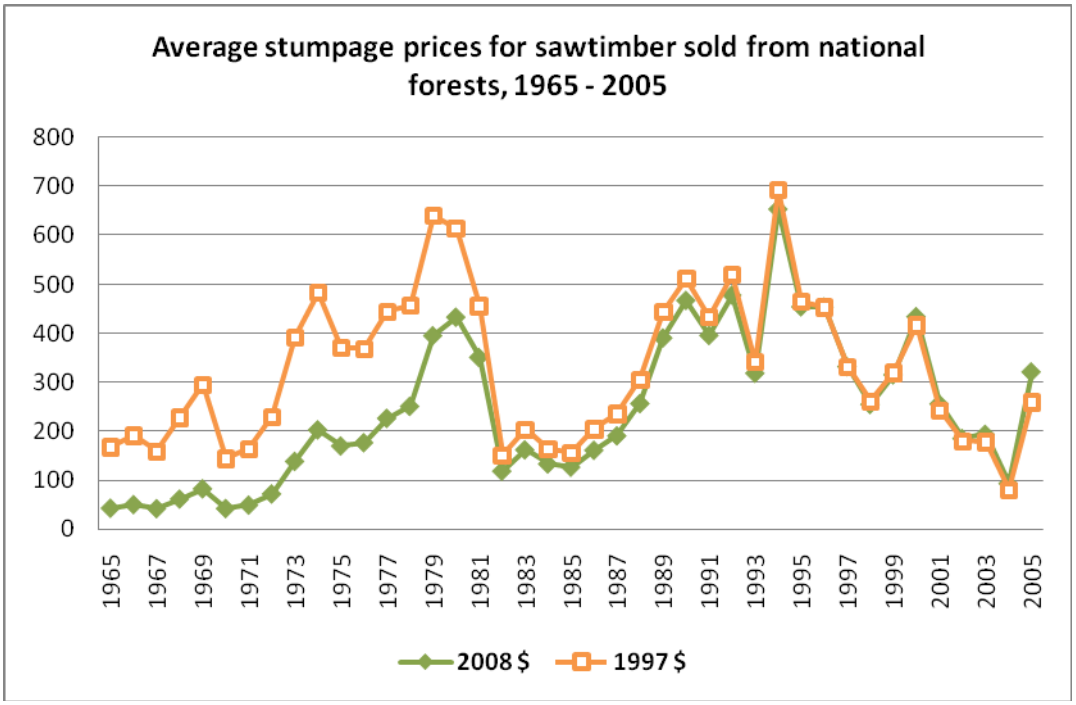
While my research was trying to get at where the food was being produced, the forests in Lincoln County continued to loom large. As pioneer Rachel Strome mentioned, logging was hard work, but it paid well. If we consider the sold stumpage price for Douglas-fir in PNW as a reasonable barometer for the trend over time in prices that small landowners could get from selling timber, we can see from Figure 22 that even accounting for inflation (i.e. “real price”), the trend over time was an increase in the sold value of Westside Pacific Northwest Douglas-fir timber (Sohngen and Haynes 1994).

Figure 22. Price of lumber in Pacific NW 1910-1990 "Yearly deflated price of coast Douglas-fir lumber and PNW west-side sold stumpage." (Reproduced from Sohngen and Haynes 1994, Figure 3).



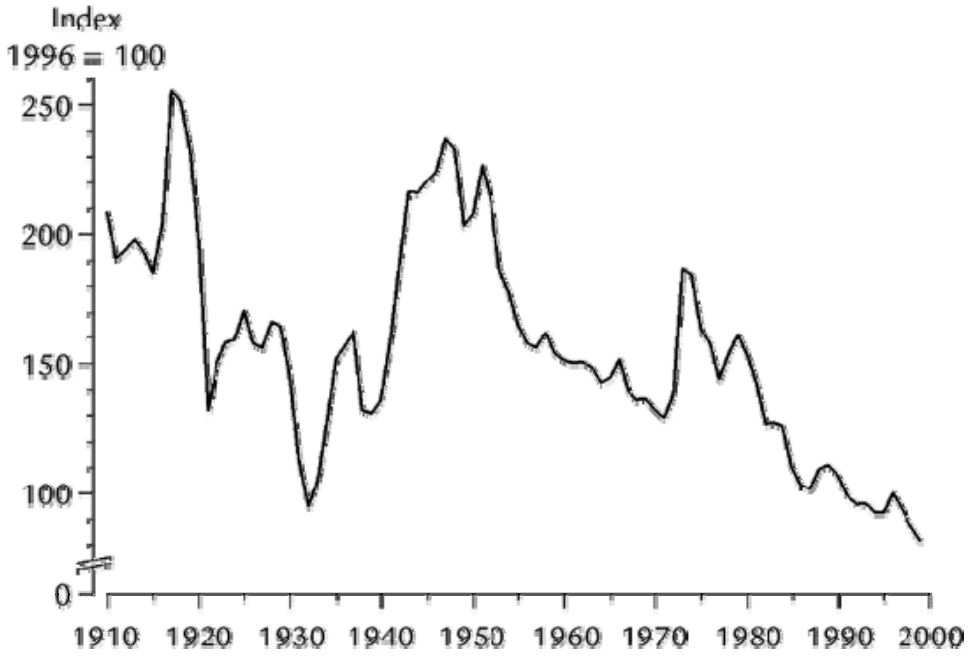
More recent data tracking a similar variable, average stumpage prices for sawtimber sold from national forests, (Figure 23) shows a distinct correspondence over the same time period displayed in Figure 22. The newer data, however, also show that stumpage prices for timber from national forests have been going down since the early 1990s. What both these graphs seem to indicate is that while the stumpage price of timber has been going up over the decades in general, year to year there is great volatility, especially in the more recent decades. If this is true in fact and in the perception of landowners, it could signal that timber will not in the future be considered such a safe bet by Lincoln County farmers.

Figure 23. Average stumpage prices for sawtimber from national forests, 1965 – 2005 (Reproduced from Howard 2007, page 47; Consumer price index 2008).



Meanwhile, real prices received by US farmers from 1910–1999 underwent significant fluctuation with a major tumble in 1930 (depression era) when farmers in some places in the country were forced to give away their products below cost (Adams 1994). Prices rose during the 1930s, peaked in the 50s and then declined except for a short period in the 70s. Overall, in contrast to the trend seen in timber prices, the trend in prices received by farmers through 1999 was downward (Figure 24).

Figure 24. Real prices received by US farmers: 1910–1999, (Reproduced from Gardner 2008, Figure Da-M).



As this chapter has shown, Lincoln County has always been bountiful. However, in recent decades it has been less bountiful in producing food for either local or nonlocal people. Trees, on the other hand, have always grown in Lincoln County exceptionally well, providing landowners with a kind of bank account to tap into if and when the moment is right. Farming and raising crops has been a more tenuous endeavor. Raising beef has also been a consistently less risky strategy for landowners. The next chapter focuses on the strength of external economic forces and how they led to the marginalization of small farming in Lincoln County as an occupation.

CHAPTER 7: RECLAIMING SPACE FOR SMALL SCALE AGRICULTURE

Iowa: Farming Paragon and Paradigm of American Farming

In the following section I will discuss how it is that higher levels of agricultural production and "more is better" came to take on paradigmatic proportions in terms of the average person's relationship to food. Of course, it seems so simple: if there are people starving in 'developing' nations, obviously the more food being produced the better. But as Foucault has suggested, digging down into the history of concepts, such as the inherent goodness of industrialized production practices that efficiently produce simply *more*, can help to reveal the social and political web of relationships that gave rise to those concepts. Rather than being something taken for granted then, the concept, once made apparent, can be deconstructed if necessary (Foucault 1980).

According to the American Heritage dictionary, 3rd Edition, the words *paragon* and *paradigm* are more than visually similar; a paragon is "a model of excellence or perfection," while a paradigm is merely "an example that serves as a pattern or model" (1994). It is a devolution of the something perfect to something useful that is connoted between these words; from a specific object of reverence, such as a particularly lovely and bountiful piece of land (farming paragon) to something generalized on a broader scale such as an agricultural powerhouse (farming paradigm). I am pointing out in a semantic way the journey from the specific to the general that seems to characterize our modern world. In particular, I intend to show how Iowa has made such a paradigmatic impression on the world far beyond its boundaries or location in space. It has set an example for other places to follow through its phenomenally good soils, amenability to highly organized cultivation and high levels of industrialized agricultural production. I once asked an emeritus professor of soil science about the national soil classification system and why it was that even in the rich agricultural region of the Willamette Valley, Class I soils (defined as of highest agricultural capability) are not all that common. His reply was terse: "That classification system was invented in the Midwest, it doesn't apply to the soil types around here." As a plant ecologist I understand this intuitively;

plant communities are not the same from one elevational zone in the Coast Range to the next, much less from Oregon to Iowa. And yet, these generalizable models of the world are *useful* in classifying things; while unsatisfying to the expert who sees the fuzzy edges, they serve a need in the world of application. They are "close enough" approximations of reality to serve some purposes. As such a construction, a soil survey manual describing in detail the soils found in a certain area, when joined to a scale defined by the rich mollisols of Iowa, will certainly show most areas quite lacking by comparison. They are not the paragon, the gold standard, but they fit within the scheme of the devised paradigm -- the standard *measuring device*. I use this as a metaphor for what I see as the way in which farming in America has become defined as looking one way and not another. As I will show in this chapter, farming in Lincoln County measured pretty mediocre on the scale of agriculture in America as defined against Iowa, not just on the soil classification scale but in other key aspects as well and was therefore left to decline over the decades following WWII.

In tracing the modern roots of industrial agriculture, Iowa stands out as a prime example. Though Iowa is only one place among many rich agricultural regions in the United States, it is somehow emblematic. As Clare Hinrichs writes, "Situated between the Mississippi and the Missouri Rivers, Iowa is seen by many Americans, and indeed proudly casts itself, as the quintessential agricultural state in the US" (2003). There are good reasons for that casting. In her book, "Iowa: The Middle Land," Dorothy Schwieder describes how the uniformity of Iowa's landscape, its flatness and uniformly good soils form the substrate and reason for its orderly anthropogenic features of squares and straight lines as seen in Iowa's roads, fences, checkerboard-like counties and millions of rows of corn (Schwieder 1996). As a "middle land," it has historically been seen as a passage between the eastern seaboard and far west, in part due to the ease with which roads and railroads were built across it. There is also, according to Schwieder, a certain sense of rootedness and stability displayed among Iowans that stands in contrast to its passageway quality. Iowa pioneers "found optimal conditions for settlement" (Schwieder 1996) and indeed, Iowa was mostly claimed by the time of the Homestead Act of 1862 and had a population of 1.2 million by 1870.

Iowa's farm output increased steadily over time as the nation's population expanded. Most farms moved from subsistence to commercial operations after the civil war. Along with this process came increased specialization as farmers soon combined the state's "peculiar adaptability" to corn production (some would say "comparative advantage") with the prodigious capacity of hogs to convert that corn to flesh, giving rise to what has been called the corn-hog complex. Simultaneous with the predominance of hogs was development of meat-packing facilities to process meat for domestic and foreign markets (Schwieder 1996).

One striking aspect of agriculture in Iowa, however, is how marked by cycles of downturn and upturn it has been, even though farming in Iowa was ostensibly always quite good due to its comparative physical endowments. These cycles appear largely driven by wars, which forced the ramping up of agricultural productivity followed by lulls in consumption after the Civil War, World War I and World War II (Schwieder 1996). The Great Depression of the 1920s in the US was just such an economic lull, during which commodity prices declined sharply causing many farm foreclosures, in turn affecting small town businesses. This reality prompted one Iowa State College professor to write in 1932: "Nature has never treated the farmer more generously, yet our economic system could hardly treat him worse" (Schwieder 1996). Although Iowa farmers were recovering from the depression era and already beginning to use more new technologies like tractors and hybrid corn by that time, World War II marked a significant transition point toward a more industrialized system of agriculture for Iowa and the rest of the world (Schwieder 1996). At that time the Green Revolution created a seemingly endless uptick in agricultural production in countries implementing technologies using energy intensive fertilizers, pesticides and equipment. Such inputs were expensive and led to increasing dependence by farmers on off-farm sources, both financial and material.

One discussion of the increasing productivity explains why this systemic transition took place generally and how it will continue to take place according to a textbook economics perspective. In this particular case, Hallberg links increased

production in the dairy industry to the decreasing number of dairy farms in the US from 1950 to 1997:

> Quite clearly, dairy farms that stayed in business adopted cost-reducing technology and got bigger. Those that could not manage larger herds, or could not acquire larger herds got out. This, we can be reasonably assured, will continue to happen into the future as technology continues to drive milk prices and profit margins down (Hallberg 2001:51).

As production shot up as a result of increasing use of chemical, technical and mechanized inputs, government programs were devised to dispose of this "farm problem" of overproduction, such as through government surplus buying (Wessel 1983). The situation was later addressed in the form of government policies that promoted exportation of agricultural commodities to other countries, particularly newly reconstructed post-war economies. This export push originated with the Russian wheat crisis of 1972 when American farmers were called upon to produce more to make up for a dearth of production in Russia. The emphasis on cultivating new export markets resulted in the value of US cash receipts from agricultural exports to increase from 10 percent in 1950 to 30 percent by the mid 1990s (Hallberg 2001). At the same time American policy-makers were promoting an aggressive strategy of food exportation to developing countries, power-holders in those countries were enriching themselves through development of their own domestic agricultural systems *for export* (Wessel 1983). In this way, food for people both in the US and in many developing nations lost its importance, while food for profit, food as commodity, became the name of the game.

The Silent Violence of Development Paradigms in the Developing World

Let us pause to consider how, if the place that was so amenable to industrialization due to its great prairie soils and malleability, the place that became a paragon and then standard by which other agricultural systems were measured, if the economic system treated the Iowa farmer poorly, how must it have treated the agriculturalist in places unlike Iowa? What about smallholders from areas outside the Midwestern United States? There are many examples from other parts of the

"developing" world that we can look to for this answer. First let us consider the economic milieu at the end of the Second World War

Classical political economy, the prevailing economic paradigm prior to the Great Depression and WWII, held that the capitalist system functions best when the state meddles with it least. A new viewpoint articulated by John Maynard Keynes took hold among western policy-makers following WWII and became the guiding economic paradigm of the postwar period (Rapley 2002). Having registered the shock of the Great Depression, Keyne's vision was of a more active and humane role for the state in curtailing recession. The Keynesian prescription for governments was "managed capitalism" summed up by Rapely as "save in good times, spend in bad" (Rapley 2002:8).

It was also at the end of WWII that countries deemed the "developing world[7]," many of them former colonies of European powers, were increasingly focusing on their newly independent statehood and on the kind of development that was considered successful. Most of these leaders from developing countries had been educated in western institutions and therefore adopted the attitude of so-called developed countries in regard to their relative economic condition as un- or under-developed countries having lower per capita incomes (Rapley 2002). It was in this context of the US academic construction of "Modernization Theory" in the late 1940s that poverty and its association with short life expectancy, high infant mortality and low educational attainment came to be conflated with substantial per capita engagement in agriculture. Economic theorists of the time further projected that if developing countries did not hurry up and become industrialized, they would never catch up with the developed

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[7] It seems to me that a better term would be Low Gross Domestic Product (LGDP) countries because of the internal reference to the standard by which the descriptor is applied. For this general overview, I consider these terms to be more or less synonymous with other terms such as: Least Developed Countries, underdeveloped countries, second/third world countries and developing countries. I also prefer LGDP countries because I reject on a theoretical level the term "developing" because it implies an incipient state relative to a fully formed or developed state. Nevertheless, I defer to convention for the sake of clarity and will be using the existing term "developing" country.

world and would therefore never be good trading partners for Europe and North America (Rapley 2002). Another conceptual frame in play then was the idea of one-directional evolution: for example, Iowa was developed, industrialized, it was essentially a finished product, whereas places like Ghana were analogous to a raw material. Naturally, according to this paradigm, Ghana will develop to look more like Iowa, if it is going to evolve at all (Rapely 2002). This optimistic thinking about developing countries seems to reflect rather what was seen as proficient, profitable and beneficial about "more advanced economies" than what was inherently lacking in "underdeveloped" countries. Industrialization, fast economic growth, and movement away from subsistence agriculture were key assumptions underlying development theory that seem to have taken on a normative quality in those circles.

In this context, nation states and world governing bodies began funding projects in third world countries in order to aid them in developing their full potential as markets. Such development organizations as the World Bank and the United Nations Food and Agriculture Organization (FAO) took an interest in developing the less developed world along certain lines and in conformance with certain standards (Rapley 2002, Ilcan and Phillips 2006). Ilcan and Phillips discuss the way in which the FAO with its scientific consolidation of information coordinated the production and consumption of agriculture around the world. With its emphasis on statistics, information accumulation and calculation, the FAO also attempted to assess and manage risk: "This emerging scientific knowledge is forged from tensions between local practices and the attempt to translate them into global and universal categories" (Ilcan and Phillips 2006). However, although there are certain generalizable principles to agriculture as with any natural science, like ecology or soil science, agriculture is highly contextual and therefore not wholly generalizable. This consolidation and standardization in regard to risk management is reminiscent of the soil classification system example; that is, a big idea compressing the particular, thereby obscuring alternative approaches to agricultural systems management.

While political-economic fashions changed over the decades from very active to less government intervention in the marketplace, from Keynesian economics to

neoliberalism, the basic idea that growth and industrialization are desirable and the dismissal of subsistence agriculture as backward remained largely the same. Local knowledge about the systems to be developed was often overlooked. One such project began in 1975 as a joint effort led by the FAO, the World Bank, and Canadian International Development Agency in a part of southern Africa called Thaba-Tseka. James Ferguson writes about this ill-fated project in his book *The Anti-Politics Machine* (1994). Ferguson is more concerned with the "theoretical construct of 'development' discourse" as with the success or failure of the project in meeting its goals. The project area was a mountainous region characterized by the development planners as isolated due to limited road access. In the absence of much suitable cropland to exploit, the main goal was to more fully exploit the potential of the mountainous region for cattle production. A suite of other development goals would also be implemented having to do with improvements in health care, cropping systems and water supply, among many other lofty sounding goals, but improved roads and rangeland were of highest priority.

Ferguson highlights the way in which development in Thaba-Tseka is characterized and promoted by the planners of the project as necessary and beneficial, that is, he describes the "development discourse." First, planners over-emphasized the agrarian nature of the society by casting most of the inhabitants as "farmers" when many inhabitants were hired farm laborers, not smallholders of their own land. Second, development planners overemphasized the isolated nature of the population and consequently the limited availability of farm inputs such as planters and harrows. Perhaps most importantly, the planners overemphasized the economic isolation of the area suggesting "a lack of contact with the money economy and the modern world of the market" (Ferguson 1994). In short, planners of the Thaba-Tseka project fabricated a narrative in order to justify a project of questionable merit:

> Most of the initiatives undertaken by the project, and even the idea for the project itself, pre-supposed this picture of an isolated, backward, agricultural economy which stands to be completely transformed by some combination of technical inputs, new knowledge, and infrastructure (Ferguson 1994:86).

Not surprisingly given the faulty assumptions upon which the project was based, it was unsuccessful in meeting its goals of improving production, in fact, access provided by

improved roads increased the flow of goods into Thaba-Tseka from the lowlands much more than it increased exports from it. This further eroded the subsistence economy, and "lowered the price of cheap imported food, making it harder than ever for a local farmer to profitably produce for the market" (Ferguson 1994). In sum, Ferguson says that the particular construction of places as in need of development, combined with the proffering of technical solutions to problems which are not technical in nature, is problematic, as is the fact that development agencies are in the business of development and their employees are therefore oriented and motivated by that agenda.

Another example of agricultural development gone awry is provided in great detail by Michael Watts in his book *Silent Violence*, about the political economy of the food system in Northern Nigeria. Because of the historical and geographical scope of this work, richness of cultural detail and depth of analysis, it is not easily summarized. In essence, Watts discusses the social dimensions of drought and the social production of famine (Watts 1983a:xxii). He does this against the backdrop of a state of food system failure and famine he encountered during field work in the 1970s and the threat of famine that continued until and beyond the time of his book's publication. Watts makes clear from the outset that famine in itself is not a new phenomenon in this region, or for that matter, any other in the world, however, he rejects the frame of reference that sees drought and famine as strictly natural occurrences inasmuch as such explanations are *apolitical* and therefore totally beyond human control.

Watts links the food crisis in Northern Nigeria to the end of food self-sufficiency, increasing dependence on imported staples, debt loads and oil importation bills. He makes the point that while food production increased in both developing and developed nations overall between the early 1950s and late 1970s, per capita food production in developed countries was much higher, which meant that they were exporting more to developing countries. Just a decade later, Africa was the only region where food production declined between 1960 and 1980, and this with a labor force that was 65% rural. This represents a human tragedy in terms of the consequences of high rates of infant mortality, lack of access to safe water, hunger rates and other measures of life quality. Watts developed three interrelated themes in his research to explain what

was happening: commoditization of agriculture; political articulation and negotiation between classes of rural peasants and the state; and evolving new forms of capitalist agriculture. To elaborate somewhat on the commodity theme, according to Watts, one of the key factors that is missing from the development discourse is that,

> The colonial state often ignored food security issues, and the expansion of commodity relations exposed producers to new risks, undercut many indigenous food security mechanisms, and deposited peasants in new relations of exploitation which left them vulnerable to crises of subsistence (1983:12).

This is a much different picture than that painted by the World Bank's 1981 assessment report on development problems in sub-Saharan Africa as owing to "civil strife, poor rainfall, population growth, government neglect, misallocation of funds, misdirected marketing and price policies, and organizational weaknesses in the public sector" (Watts 1983a). Missing from the list is any reference to the global economy or the troubling agricultural policies of developed nations as they affected Africa. The development discourse on poor performance of sub-Saharan Africa in the agrarian sector implies that all the problems are inherent to Africa. In later chapters Watts presents evidence of a subsistence agriculture system adapted to the drought-prone conditions of that region which, culturally, exhibited resiliency under adverse conditions.

Isolated Farmers of Lincoln County

Michael Watts was wrong on one point in his magnum opus about northern Nigeria: Africa was not "the only region in the world where per capita food production (had) actually declined over the past twenty years" as of 1980 (Watts 1983a:5). In truth Watts was only semi-wrong inasmuch as he was referring to FAO statistics on agriculture that certainly would not have broken Oregon down into regions. If they had, Lincoln County would have emerged as an area in food production decline from 1960 to 1980. As I have detailed in chapter 4, Census of agriculture statistics for Lincoln County show that overall decline in food production began in the 1950s and continued through the 1990s. In fact the same thing was in all likelihood happening to rural areas such as Lincoln County all over the United States.

What was happening to them? In many ways what was occurring in rural areas in the US mirrors what happened to developing countries later on, that is, food production in areas amenable to high input Green Revolution agricultural practices began to experience record levels of production. This process drove down the amount of money farmers could get for their products as well as lowering food prices for consumers. Places like Iowa increased production and this combined with restructuring associated with the economic industrialization of the food system created pressure on farmers everywhere to get bigger and more efficient in order to make up for narrowed commodity profit margins that resulted from the increased production. It seems circular because it's a positive feedback loop. Consider that the average cow in 1950 produced 5,300 pounds of milk per year; by 1997 the average was 17,000 pounds per year! At the same time, the price of milk trended strongly down relative to wage rates (Hallberg 2001). In a place like Lincoln County where many of the farms were limited to smaller acreages, smallholders would not have been able to keep pace with industry standards. The event that succinctly corroborates this trend happened in 2007 when the last commercial cow dairy in Lincoln County went out of business.

In addition, public works projects associated with the New Deal had been laying down new infrastructure such as roads and bridges that ultimately increased access to areas that had once provided local smallholders markets insulated from competition with food producers from other regions. Access along the coast was altered significantly, for example, when in 1936 the newly built Yaquina Bay Bridge at Newport was opened to traffic (Wyatt 1999). Lincoln County once had several creameries of its own, but when trucks could more easily service the outlying dairies, milk could be collected from a larger geographic radius and delivered to larger, more "efficient" facilities. Such facilities could take advantage of the many different economies of scale (i.e. efficiencies) thereby out-competing those smaller creameries. The success of the Tillamook County Creamery Association, makers of Tillamook Cheese, exemplifies this story.

Just as Africa had subsistence agriculturalists whose livelihoods were harmed by imports of cheap commodities, Lincoln County also had small farmers who suffered

from impingement on their livelihoods from the outside world. The evidence for this, in addition to census statistics, is found in a report by a social scientist working for the USDA Bureau of Agricultural Economics (BAE) titled: *The Farm people of Isolated Areas in Lincoln and Western Benton Counties, Oregon,* published in 1941. The study was undertaken to assess the desirability of relocating small farmers from "those few places where the narrow, twisted stream valleys widen sufficiently so that a few acres of arable bottom lands are to be found" to "more productive and less isolated farms" (Hanger 1941:2). The background context for the study, interestingly, was that a relocation effort of similarly isolated smallholders had been undertaken in an unnamed "adjacent area" at some point earlier and was not completely successful since some of the removed families kept showing back up at their former mountain homes.

The "development discourse" to be found in the BAE report is similar in tone to that found in the Ferguson example of Thaba-Tseka more than 30 years later. The practical impetus for relocating these farmers seems to have been that they were considered a burden to the county's tax base due to the cost of road maintenance (Hanger 1941).[8] Most of these small farmers would also have owned upland forest in addition to a little arable bottom land, and once logged, the land was not worth much and was therefore of very low value to the county for tax purposes (Wakefield 1942) particularly relative to the burgeoning coastal tourist zone. Additionally, the USDA Forest Service appears to have served as a willing repository of some parcels of land in the county that had been abandoned or on which county taxes had not been paid (Taylor 1938).

The study is conducted and thoughtfully written by Michael Hanger, Associate Social Science Analyst, Division of Farm Population and Rural Welfare of the BAE, based largely on field work involving sixty interviews with smallholding farmers. But the discourse, the phrasing used by the author in his report, belies a paternalistic attitude

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[8] Ironically, a study conducted on land use planning soon after the Bureau of Agriculture and Economics report concluded that timber harvest occurring at unsustainable rates was eroding the tax base by rendering that land less valuable. Probably some of the isolated farms are now in Federal ownership, thus contributing little to the tax base (Wakefield 1942).

that would probably have sounded equally familiar to the Native Americans on the Siletz Reservation or to the subsistence agriculturalists of Thaba-Tseka in southern Africa. For example, when discussing farm size, he says: "Inheritance has, in many cases, resulted in the subdivision of farmsites into units often too small to maintain *even those levels of living* which these people consider adequate" (Hanger 1941). There is also discussion of how particularly the older residents are inflexible in their attitudes and suspicious of outsiders, particularly law enforcement. It seems obvious that the experience of their neighbors in the adjacent resettlement project area, which they undoubtedly heard about through the grapevine, would have contributed to hardened feelings of suspicion and distrust of authority. The subtext is that isolation has, in itself, led to narrow and backward social attitudes as well as resistance to change and a certain lack of motivation to "improve" their lot in life, for example:

> As conceived by the representatives of one public agency, the major difficulty in most of the district is not that living is too hard but that it is too easy. That is, the values traditionally developed appear to place leisure time and hunting and fishing higher than it does more intensive agriculture with possible attendant rises in the level of living (Hanger 1941:11).

However, Hanger does not ascribe this circumstance to the lack of "personal industry of mountain farmers" but rather simply to an adherence to tried and true methods for living in that area.

He concludes from these interviews that no action should be taken to relocate these populations since they are declining due to outmigration anyway. Specifically he identifies influences from the outside world such as high school education offered to the young people and the attraction of a wage-based economy as principle factors for this attrition from the mountain farms. The presence of radios and cars in particular were noted as vectors of societal transformation (Hanger 1941). Also, division of properties to satisfy inheritance claims had reduced the size of some of the parcels to unsustainable levels. He does not mention the erosion of markets for the products of these smallholders or the overall shift in the structure of industrial production that was then just beginning to be apparent as a reason for decline.

It is particularly intriguing that Hanger assesses these smallholders to be, though poor, generally satisfied with their living circumstances, although low compared to other places. He found little evidence of social unrest among the 450 isolated farms, they had high rates of farm ownership as opposed to sharecropping arrangements, and almost all had cars and battery powered radios. The cars served an important link to the markets centered along the coast as selling excess product was one of the few entrances they had to the moneyed economy. Strong social ties existed based largely at the neighborhood level and six granges in the study area served instead of churches as centers of community activity. These farmers also exhibited strong feelings of stability; Hanger noted a lower level of "Feelings of insecurity and dread of old-age dependence" than exhibited in the general population of older residents and, in fact, the "isolated" farm people applied for public assistance at lower rates than neighboring less isolated populations (Hanger 1941). Farms were typically diversified and food raised was supplemented by hunting and fishing. Of most critical importance to my study of Lincoln County's food system past and present is that these self-sufficient smallholders exhibited adequate health and nutrition and were well fed:

> Food, with the exception of the minimum staples which must be purchased, comes largely from subsistence enterprises on the farms and from the streams and forests. Amounts and varieties of foods are limited for the most part only by the desires of the farm people themselves (Hanger 1941:9).

Again, one wonders how the adjacent resettlement program would have conditioned what these people said to this agent of the government. It is possible that they exaggerated their level of contentment with the conditions of their lives, but corroborating accounts from school and other authorities support the conclusion that the isolated farms at minimum provided food security for these residents.

The Un-Iowa

A paternalistic and somewhat dismissive attitude toward smallholding farmers in Lincoln County is easy to understand in the context of the time. Lincoln County was the anti-Iowa or the "Un-Iowa." Smallholders went against the prevailing wisdom of the zeitgeist: that large scale brought efficiency and through that would come a better

future for humankind. And Lincoln County, with its never straight roads and end of the line, edge of the continent position is so strikingly different from the paradigmatic Iowa. In contrast to efforts made in developing countries later in the decade (Rapley 2002), it is interesting that the opposite tack was taken in the Coast Range region – instead of offering help to smallholders to increase dairy or beef production, for example, it made more sense to government agents to discourage smallholders completely. This probably had most to do with two things: the region's comparative advantage in timber, and the perceived drain on county and other tax bases due to road maintenance and other services. To non-farmers of that particular place, it must at the time have seemed like a very marginal place compared to Iowa for growing food. The interesting point here is that while the development agendas pursued in Africa and Lincoln County arrived at different visions of what should be done: development versus neglect; the conceptual framework behind them was the same: more production is bigger and better.

As I have presented in chapters 4 and 5, the food system today in Lincoln County is very different from what it was in 1940 when the county had fewer than 15,000 residents or one-third that of the present population level. There were nearly three times as many farms then and the inflation-adjusted value of farm sales was over twice that recorded in 2002 (USDA 2004). Data on the value of products for household use are scant, having been eliminated from collection after the 1945 census of agriculture (USDC 1952), but it stands to reason that if there were more self-sufficient smallholders in 1941, a significant amount of their food came from their own farms compared to comparable farms today whose main source of income, and therefore main time commitment, is off-farm wage work. Given these facts it is clear that Lincoln County's population is less food secure today *from within* the local system (i.e., the county) than in the middle part of the 20th century. The reason for this circumstance resides in the industrialization of the national and global food systems which drove down commodity prices and made farming an equation of scale. Too small and it made little sense to farm unless there was a niche to occupy, sheltered from the gravitational pull of the economic positive feedback loop that rewarded only increased production. In this way, Lincoln County smallholders were marginalized and many were pushed out

of farming as a livelihood by economic forces well beyond the county or state level in a way similar to what occurred to smallholders in other regions of the United States and the rest of the *Un-Iowa* world.

With a poverty rate of 15% as of 2004, a segment of Lincoln County's population already suffers from food insecurity. Perhaps the future will bring only bountiful food supplies to the area; however, at the time of this writing, energy prices are rising rapidly and show no signs of leveling off. What will this mean for the future of food security in Lincoln County? While I will not pretend to know the future, it seems wise to consider that this circumstance could pose a problem worth at least exploring.

Marginalization and degradation: Forces in Food System Transformation

An alternate analysis that actually fits the standard "degradation and marginalization" thesis even better is that forests bore the brunt of increased exploitation by smallholders until they were essentially exhausted or of marginal value. Given the fairly long time-frame within which timber grows back, this could have happened after one cutting. The land, if not reforested, would not quickly regain its value and therefore there might have been increased political pressure to get it into the hands of landowners with the capital to undertake the replanting effort. This would supply the degradation element that the previous analysis lacks and is also compelling when one considers that the Coast Range is critical habitat for the forest dwelling spotted owl, marbled murrelet and salmon (their declines indicating forest degradation) due at least partially to widespread clearcutting of native forest[9]. Nonetheless, the underutilization of cropland in Lincoln County remains an intriguing comment on the transformation of rural America as a result of the processes of industrialization and increasing export orientation of the food system at the broadest level.

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[9] This is not to imply that smallholders were significantly responsible for the degradation of habitat that has led to these species' endangered status but rather to point out that it is a significantly degraded landscape when viewed in the context of historical forest conditions.

The Hazards Field Approach and Food Security

In an essay called *On the Poverty of Theory* (1983b), Michael Watts explored the theoretical roots of the political ecological perspective on risk management called the hazards field approach. This field provides a conceptual link to the current interest among the public and in some academic circles in food systems and food security. In this essay Watts discusses his familiar terrain of drought in Nigeria and how it is related but by no means the sole cause of famine, in fact he advocates resistance to that *apolitical* thought process which he considers fatalistic. He says:

> To appreciate the fact that hazard is mediated by the socioeconomic structures of societies affected is simultaneously to recognize that 'modernization' or 'development' has not necessarily solved the age-old problems of subsistence crises or vulnerability to environmental threats, and in some cases has actually aggravated them (Watts 1983b:259).

What Watts is pointing to is the considerable societal risk involved in placing undeserved faith in the "technoscientific" (Ilcan and Phillips 2006) mechanisms of the modern world in regard to food. It certainly has not worked out well for some places in Africa. In a world where the precious petroleum we use to produce most of our food through conventional agriculture will one day need to be replaced by something else, it is natural that the idea of more localized food systems would capture our imaginations. If the Iowa paradigm of "get big or get out" was a compelling influence in the past century, the narrative of development has shifted with time and experience; there has been a swing back to an interest in farming as part of the community-- this study funded through the Extension Service of a land grant university is strong evidence that the tremors of a paradigm shift have hit the mainstream.

Whether invoking a *foodshed* (Kloppenburg et al. 1996), a *civic agriculture* (Lyson 2005), or a *renewed husbandry of the land* (Berry 2005), the meaning behind these terms is that a course correction is in order for the modern American food system. For reasons including those discussed in the first section on the transition from smallholding to industrial agriculture, community-based movements in the direction of localization of food systems can be seen as counter movements to the increasing concentration of production, processing and distribution of agricultural products that

has characterized the American food system for many decades (Lyson and Guptill 2004) and is linked to the process known as globalization (Phillips 2006). In this process of industrialization of the food system, small and medium-sized farms have been forced to find alternative markets in order to remain economically sustainable. Farmers' markets and community supported agriculture schemes are two of the most prominent direct market avenues by which farmers are able to maximize their share of the food dollar returning to them in exchange for their efforts (Hinrichs 2000). Semi-direct sales to institutions such as schools and restaurants are other ways in which, especially smaller farmers, are able to enter the local food system for the mutual benefit of farmer and food consumer (Kloppenburg and Hassanein 2006).

In many regions of the United States, and definitely in Lincoln County, there is evidence of a more productive and diverse local-centric food system in the past. There were creameries and canneries in addition to more local food entering the local economy in general. *Relocalization* then seems a more apt term for an effort that has had a re-start in the county through farmer's markets and other direct and semi-direct farmer to customer relationships. My research and interviews with small farmers highlight the aptitude of many of the these new kinds of producers who are willing to look for and maintain person to person relationships that characterize a more socially embedded market transaction (Hinrichs 2000).

However, to me the most pressing issue related to relocalization of the food system is food security, defined by Pothukuchi as "a situation in which all community residents obtain a safe, culturally acceptable, nutritionally adequate diet through a sustainable food system that also maximizes community self-reliance and social justice" (2004). To the extent then that more direct interactions between farmers and customers make farming "pencil out" for more small farmers, they are beneficial because clearly the land and the people who farm it are central to a self-reliant community food system. The recent sharp increases in the price of food related to cost of energy increases give this food security topic fresh urgency. Though the magnitude and rate of change are not knowable, what we are seeing now could be the beginning stages of the unraveling of the energy intensive food systems that we are all dependent upon to some degree. So it

could be a moot point that the paradigm that undid the food system of Lincoln County and other areas that are less than paragons of agriculture is the one that says that bigger and more are always better when it comes to food production. It could be a moot point because that system is only made possible through the availability of cheap fossil fuels (Odum and Odum 2006).

Assuming that such paradigms will continue to be important in the world to come, a crucial question is how to transition from a mentality of growth to a mentality of sufficiency (Princen 2005)? A "prosperous way down" (Odum and Odum 2006) will most certainly require much more than technical solutions. A technical solution was defined by Garrett Hardin in his famous work *The Tragedy of the Commons* as "one that requires a change only in the techniques of the natural sciences, demanding little or nothing in the way of change in human values or ideas of morality" (Hardin 1968). There is no technical solution for an ideology or paradigm of continuous growth. The only solution is a new idea – or perhaps a return to some old ideas.

Robert Netting spent his life studying small farmers (smallholders and householders) from various cultures, regions and ecosystems. They are defined as typically small in landholdings, living in dense rural situations, and are centered on the household level for labor that is largely manual. Their intensive agricultural practices include: diversified crop and livestock production, intercropping, manuring, and other relatively sustainable practices. In contrast to ideas of selfless communality, smallholder rights to property are centered at the individual level. Most interesting in relation to the Iowa paradigm is that "productivity per unit of land is *inversely* related to farm size" because smallholders are close to and therefore make full use of their limited resources (Netting 1993). This means that the assumption of greater efficiency through modern mechanized production is questionable and may only be true in certain energy-intensive unsustainable farming systems. However, it is perhaps unnecessary to lament the loss of those pioneering smallholders from Lincoln County since as Robert Netting has observed: "Where people are plentiful and land is scarce, the distinctive adaptation of smallholder households practicing intensive agriculture will appear, just as it has for centuries in a variety of human societies" (1993).

CHAPTER 8: REBUILDING A COMMUNITY-CENTERED FOOD SYSTEM

My intention in discussing the food system of the past has been to explore something about what is possible for the future. As revealed by historical data, Lincoln County has the potential to grow much more food than it does currently either for its own or for other markets. It is not the Willamette Valley and it is certainly not Iowa, however, Lincoln County has its own particular strengths. Lincoln County might just be ideal habitat for sustainability-oriented smallholders. The following discussion draws substantially on the analysis of comments offered during two focus group sessions held in the late fall of 2007 in Newport and Lincoln City. It also incorporates comments and examples gleaned from individual semi-structured interviews conducted earlier the same year. It offers an unadorned summation of what farmers and others have to say about the prospects for locally grown food in Lincoln County under current (2007) circumstances. Though realistic, in focusing on prospects for the future, it is a "glass half full" version rather than "glass half empty." I conclude this chapter with a few summary thoughts to weave the major themes of scale and feedback loops together with the local particularities of a future-oriented Lincoln County food system.

Cultural Adaptations to Biophysical Strengths

We know Lincoln County has great growing conditions for conifer trees with its generally cool maritime climate, ample rain in the winter and sparse rain in the summer. Focus group participants acknowledged that alongside the disadvantages of this climate are also strengths that could be used to better advantage by local food producers. Changing farming techniques to fit the environment might be the most sustainable way to increase levels of production. Mild winters favor some plants already quite prevalent, such as pasture grasses for forage. In an area sometimes lacking in enough heat units to grow corn and tomatoes, cooler weather crops might be a better option. Crops such as zucchini, peas, lettuce, broccoli, and artichokes reportedly do well here; sometimes producing two crops per year. In addition, some felt that the local

production of storable crops like root vegetables and cool season crops like kale have been underexplored. In one example of a successful cultural adaptation to environment, one new pioneer farmer told of discovering a variety of cherry tomatoes that grew very well and then finding that he could not grow enough of them to keep up with demand from his restaurant clients.

Season extension for increasing production through the use of greenhouses, hydroponics, solar heating, and wind generation were all mentioned as having site-dependent potential in Lincoln County. Though many farmers complained about their lack of access to water rights, they also mentioned the abundance of winter rain that could be stored in ponds or water tanks and used for irrigation in the dry summer months. Focus group participants expressed a need for more exploration of such technologies. And while Lincoln County crops may be out of sync with those in the Willamette Valley, this could also be viewed as an opportunity to provide produce to valley consumers when certain species are no longer available in their markets.

New Markets and Marketing in New Ways

Focus groups discussed the various ways farmers could get their products into food-serving establishments that now are supplied mainly through conventional food channels. Why not extend marketing of local products to bed & breakfasts, county jails, schools, and retirement facilities? A chef participating in discussions emphasized that the new organization Pacific Coast Center for Culinary Arts (PCCCA) in Lincoln City has the support of local farming as part of its mission. He said that chefs want to collaborate in marketing to restaurants.

Local Farmers' Markets

While hardly a new concept, farmers' markets in Lincoln County have in the past few years experienced renewed interest among community members, causing the Newport market to change locations and new markets to start up. There are four farmers' markets operating in Lincoln County: weekend farmers' markets in Lincoln

City, Newport and Yachats and one mid week in Toledo. The former three lie adjacent the main coastal thoroughfare of Highway 101 while Toledo is inland from the coast along the Yaquina Bay.

Of the three along the coast, Newport's Saturday market is by far the largest, on the day I visited in the fall there were approximately 25 vendors, about half were food vendors, the remainder being craft vendors. According to one vendor, this is a good mix: "Crafts bring in tourists and food brings in customers." All of the markets allow some craft vendors but also maintain limits on the proportion of crafts sold. All of the markets operating in the high-traffic tourist zone are reportedly doing very well and growing in numbers of vendors and customers in recent years. The story of Toledo is different; according to the manager of this 4 year old market, she has struggled to attract enough vendors and customers. She is experimenting with different days and times in hopes of finding the right combination.

While some local food vendors are present in all of these farmers' markets, they are outnumbered by vendors from the Willamette Valley. For example, on the day I visited the Newport market, of the eleven vendors selling fruits, vegetables or animal products, only three of them were from Lincoln County. One of these valley fruit and vegetable farmers stated that selling some of his products direct at this kind of market was appealing because of the price he could get compared to selling it to a cannery or other wholesale buyer. Several factors make it difficult for a medium-sized farm like his to survive: the cost of labor, the rising cost of diesel fuel, and restrictions on pesticide usage not faced by competitors in Mexico and, increasingly, China. This farmer is going more and more toward direct marketing for these reasons though he has been selling some of this product direct for over 50 years.

At the Sunday Yachats market I interviewed a fruit and vegetable vendor from Waldport who also attends the Newport market on Saturday. Despite having established relationships with restaurants, this farmer had a very successful season after he switched over to selling mainly at the local farmers' markets. The markets have been more profitable for him every year. He also found that restaurant management can

be difficult to deal with because they are very price conscious and because of high rates of staff turnover.

While some local farmers definitely resent what are seen as interlopers from the valley, none of the market managers mentioned ever turning away food vendors in order to protect local vendors from competition (though they do turn away long-distance crafters in favor of locals). All Lincoln County farmers' market managers indicated that they would like more food vendors, wherever they come from, but would welcome local farmers most enthusiastically.

New Products

One approach to gaining access to new markets is to develop new products and tap into existing demand for specialty foods. Novelties to American palettes, such as blue potatoes or French beans, are popular among chefs who are always looking for something new to offer customers, particularly at the higher-end restaurants. In addition, as the ethnic diversity of the county increases, demand for goat and lamb meat, popular in many cuisines, has also increased. A new mobile slaughter operation started in 2007 in Newport is prepared to offer services to customers looking to purchase fresh lamb and goat.

Another possibility for creating new products is by adding value to them through processing. The number of farmers interviewed with a certified kitchen or plans to get one indicates an active interest in more than simply growing food. One farmer had an innovative idea for processing and that is to encourage restaurants to rent or otherwise open their kitchens to farm food processing. Such partnerships could lead to mutually beneficial outcomes for both parties in the form of revenue and fresh products.

Offering new products is one way to gain access to new markets; perhaps a richer avenue for exploration is in the approach to marketing itself. There were many possibilities discussed along these lines and interestingly, all of them involve some sort of community-farmer or farmer-farmer cooperation.

New Approaches

Some thought that starting a local food stand/market which operated 7 days a week might be worth a try. There have already been some local efforts toward establishing a Community Supported Agriculture (CSA) scheme in the county to fill a demonstrated demand for new marketing options for local farmers. One benefit of CSA is that farm surpluses can be utilized creatively, earning more money for farmers.

Such strategies should take advantage of the burgeoning desire among many customers for access to fresher, healthier and more environmentally friendly food options. Furthermore, with popular literature and media discussions about eating locally grown food (Michael Pollan's *Omnivore's Dilemma*; Barbara Kingsolver's *Animal, Vegetable Miracle*), more people are becoming aware of the connection between these positive tangible attributes of their food and building more secure and stable communities. Focus group members mentioned how some customers want to meet the grower and even participate in the "agricultural experience," to "participate and be part of the farm." Perhaps there is a way to tap into the tourist market through such mechanisms as organized farming tours combined with harvesting activities. Whether for tourists or locals, educational field trips could help bridge the noticeable gap between the supermarket shopping experience and the reality of growing food.

Cooperatively managed farmstands, CSAs, public outreach/education—all of these ideas sound good, but who has the time and resources to organize such endeavors? With the relatively low prices farmers receive for their products and labor, most have a hard enough time doing what they do. Just as farmers' markets do not simply spring up from the ground like mushrooms, but require people coming together in an organized and structured way to channel the efforts of several independent businesses, so too will cooperative farmstands, etc. require planning and commitment from community members. In previous times the Siletz Grange (Patrons of Husbandry) served as an organization that brought farmers together for their mutual benefit and aid. Today there are organizations like PCCCA who express the desire to help build local agricultural capacity. In addition, the local OSU Extension Service has initiated a program to match local producers with local customers. Along these lines, it was suggested by focus

group participants that a pick up and delivery route could be operated for the benefit of many small farmers in the area. Wherever they come from, there appears to be the need for more coordinators of events and the distribution of goods.

In some cases a small-scale cooperative relationship can reduce labor for the lead organizer and thus enable a successful operation that would otherwise be too large. One local woman with a penchant for chickens started such a cooperative a few years ago. Both she and her husband work fulltime, but as a sideline she runs a chicken cooperative where the members own the chickens and pay "room and board" in exchange for eggs and occasional meat. Members also get chicken manure for their gardens. To join the co-op, people must submit an essay saying why they want to join. "Diane" (not her real name) says that the response to the cooperative has been "overwhelming" and recommends it to people having trouble marketing their eggs. She specifically mentioned settling on this co-op arrangement because she didn't want to be out trying to sell the eggs. One key component of this cooperative's success seems to be that Diane has set limits on how many chickens she will have at any one time at thirty. Nine families with a total of 16 members have been involved for 4-5 years now. Diane said she's doing this because she likes growing her own food and knowing how the animals were raised and is also concerned with sustainability and nurturing connections to her community. Keeping the cooperative within manageable limits will ensure that Diane's enthusiasm for chickens is also sustainable over the long term.

Some government policy changes may be needed in order to make room for new approaches to increased food production in Lincoln County. As mentioned earlier, cows were at one time slaughtered and processed in Lincoln County but now these facilities are very limited, forcing some to sell for low auction prices in the Willamette Valley. The same is true for other kinds of animal and animal products processing. Focus group participants mentioned having good luck dealing with the local health department, but USDA and the Oregon Department of Agriculture have rules that can be significant barriers to small farm operations due to the costs and paperwork involved in complying.

Observations Specific to Farm Direct to Restaurant Relationships

My study of Lincoln County began with an interest in examining the possibilities for creating relationships between more restaurants and farmers. What then are some of the challenges and opportunities specific to such direct market relationships of farmer to restaurant?

Local Restaurants

As previously noted, seven local restaurant owners and managers known to buy from Lincoln County farmers were contacted to answer a few questions on buying local products. All respondents said they would like to buy more of all kinds of products, but product availability, price, and ease of transaction are barriers to buying more from local farmers. In addition to local producers, these restaurants buy food from several different suppliers including: Food Services of America, Sysco, Inc., Ocean Beauty, Pacific Seafood, Costco, McDonald's Wholesale, Graziano Produce of Oregon[10] and Carlton Meat Company. A few mentioned making trips to the Willamette valley to make food purchases. When asked what percentage of their food products are purchased from local growers and whether it varies seasonally, they estimated, cumulatively, that around 30% in the summer months and 4% in winter months came from local growers. Other large wholesale suppliers provide the majority of their food in every season. Restaurateurs thought that fruit, vegetables, meat, and eggs could be marketed well locally while grains, legumes and seafood were not mentioned; they seem to be satisfied with existing sources for those products.

Although the restaurants interviewed probably have higher food quality standards than the norm, and three of them were fine dining establishments, it is not just the highest-end restaurants that are interested in selling local food. Three of these seven were cafes and one could be described as a family-friendly diner. In an area with such a robust tourist industry and people eating out very frequently, it might seem like

[10] According to news reports, Graziano Produce of Oregon, a company mentioned by a restaurateur as a regional supplier to his business, was acquired in 2000 by Fresh Del Monte Produce of Florida.

restaurants should have an easy time attracting customers, but the fact is that many area restaurants means fierce competition amongst them. Table 5 displays what farmers and restaurateurs see as the "sticking points" in these relationships.

Table 5. Comparing what farmers and restaurants perceive as challenges

What farmers say about farming and marketing in Lincoln County	**What restaurants say about buying and serving local food**
- Growing conditions difficult (cool, wet springs)	- Strong support for local farmers among existing restaurants with history of buying local products - Freshness and quality of local produce highly valued
- Picky and price-sensitive customers ("I can get this for less at XYZ grocery…") - Hard to compete with valley farmers - Few markets for beef producers - "Selling produce locally doesn't pencil out" - Organic certification expensive	- Many restaurants means fierce competition amongst them
- Frequent staff changes at restaurants make it hard to establish and maintain relationships	- Not easy to deal with small producers with small quantities
- "Can't compete with wholesalers on price"	- Availability, price, and ease of transaction named as main limiting factors - Other large wholesale suppliers provide the majority of their food in every season

Though still a focus group effort, the following are mainly the reflections on farm and restaurant interactions from a chef who has lived and worked for many years in Lincoln County and who draws on years of experience working with local farmers.

Chef John (not his real name) emphasized that there are other chefs, restaurants, growers, and distributors in the local area whose years of experience could be utilized in creating a more robust agricultural food base in the county. Making farmer-restaurant relationships work requires a strong commitment. In many cases this would require something of a paradigm shift among the various actors. For example, the low profit margins of restaurants leads to low pay for workers as well as small budgets to pay for "extra efforts" like the inconvenience of washing dirt from lettuce, etc. There is also extra effort and training involved in buying seasonally. John mused about other models of restaurant-purchasing such as in France where much more processing is done in the restaurant's own kitchen. There, chefs tend to cook seasonally; they know how to build a menu around what's available locally. This model contrasts with the mainstream American model where chefs decide on the menu and then buy it off the truck of a multinational wholesale corporation. One strategy John uses for his own restaurant is to work with farmers, selecting in February what he wants a farmer to plant from seed catalogues.

He feels however that offering more local food cannot all rest on the initiative of restaurateurs; demand must come from customers. Without consumer interest and encouragement, local food won't increase. Marketing tools could help in this regard because if customers know more about their food they may be more apt to frequent restaurants that are offering local and/or sustainably produced food. Restaurants could advertise their connection to local farms as a way to promote themselves and might even be able to charge a premium on meals for that fact.

In Defense of the Inherent Goodness of the Human Scale

> When you see that you're making the other things feel good, it gives you a good feeling, too. The feeling inside sort of just happens, and you can't say this did it or that did it. It's the many little things. It doesn't seem that taking sweat-

> soaked harnesses off tired, hot horses would be something that would make you notice. Opening a barn door for the sheep standing in a cold rain, or throwing a few grains of corn to the chickens are small things, but these little things begin to add up in you, and you can begin to understand that you're important. You may not be real important like people who do great things that you read about in the newspaper, but you begin to feel that you're important to all the life around you. Nobody else cares too much about what you do, but if you get a good feeling inside about what you do, then it doesn't matter if nobody else knows. I do think about myself a lot when I'm alone way back on the place bringing in the cows or sitting on a mowing machine all day. But when I start thinking about how our animals and crops and fields and woods and gardens sort of all fit together, then I get that good feeling inside and don't worry much about what will happen to me (Cummins 2003).

There are many images from my research and my own early experiences of farm life that informed this thesis. I recall Charlie's mention of the new kind of hay bale so large that it can only be lifted by machine; the census questionnaire that eventually stopped asking about raising food for home use; the comment from one "old pioneer" cattleman who could not raise the breed of cows he preferred because "their feet don't hold up" on that long railcar ride to a feedlot and slaughterhouse in the Midwest. What these stories have in common is the loss of something that I think is essential to the farming way of life: the loss of muscle and knowhow, thrift and mercy that emerge through a living relationship to things in one's care. These are not romantic ideals from a bygone era, these relationships and that quality of goodness that Wendall Berry evokes so well when he writes about farming are alive and well, but they are of marginal utility in modern food production systems. Values themselves have been marginalized. There are hidden cruelties in our industrialized food system, quiet because hidden away, which have resulted from certain conditions. These conditions are underwritten by the paradigm of growth without limits, and their manifestation is large-scale factory farms and feedlots and industrialized landscapes treated with poison. These are places people would not want to take their children to, but have been willing to let them eat the products of. The sooner we accept that a moral element exists in these relationships, in our economic exchanges, the sooner we can see the effects of our actions and change them.

In responding to the recent enthusiasm for local food, some academics have pointed out a logical flaw, a trap according to them, in the assumption that localizing a food system is inherently good (Hinrichs 2003, Born and Purcell 2006). Their argument is partly based on the contention that there is nothing inherently good or bad about scale; they say, for instance, that global and local food systems are equally socially constructed entities to which values are added rather than predetermined. On this point I agree with them: the scale of Iowan agriculture, for example, is socially constructed. The size of agricultural enterprises has taken on a socially constructed power that influences people like one "old pioneer" farmer near Siletz, who recalls how his grandparents running the family farm as a diversified crop and livestock operation. On the same 100 acre farm he now only keeps cattle on, LeRoy says that he does not have enough land to make it these days in farming -- meanwhile, a few miles down the river from him, Craig is successfully farming a small fraction of that acreage. LeRoy's conception of agriculture was constructed during an age in which Green revolution technologies and economies of scale fed by cheap energy were increasing the size of everything from processing and distribution infrastructure to the amount of land an economically viable farmer could farm.

The example of this farmer shows how a conception of scale is something people act upon, a mental map they use to navigate life, and to that extent, it can have positive or negative effects upon them and their community. This seems to accord with Born and Purcell's thesis that "there is nothing inherent about any scale." They go on, however, to posit that, "Local-scale food systems are equally likely to be just or unjust, sustainable or unsustainable, secure or insecure" compared to other scales such as the global (2006). While there seem to be some systems, like the internet, which function very well as globally integrated systems, Born and Purcell's argument goes too far in negating the existence of an inherently good (for humans) scale to food systems. The scale of things is not arbitrary; the scale of physical things is governed by physical laws. Trees can only grow so tall due to physical constraints which vary depending on site-dependent environmental conditions. For most of history, humans and their cultures have similarly *adapted to* specific environments as well. In his careful cross-cultural

research with smallholding farmers, ethnologist Robert Netting (1993) found that because of their skill and adaptation to particular environmental conditions, small scale intensive agriculturalists obtained high production per unit of land while in fact farming very sustainably in terms of resource conservation compared to a comparable large-scale agricultural system in the same place. In this way, what is good about a human scale food system inheres in peoples' relationship to the land and to communities in proximity; it has to do with the things they can interact with and care about. This proper scale of human interaction and communication is also related to the good kind of feedback that informs us of natural limits.

Authors writing about the importance of tightening feedback loops in order to foster sustainable food systems point out that negative feedback is what allows systems to perceive the link between action and result: "In a broad sense feedback can be described as an influence or message that conveys information about the outcome of a process or activity back to its source" (Sundkvist et al. 2005). This is one of the most critical problems with industrial scale anything – feedback mechanisms are imperfect and sometimes even purposely muffled so that consumers can not hear the problems the system is having. Not so the smallholder relating to the land or to the customer at market. Small scale farmers know the results of their actions; they are close to the land and thus get immediate feedback from their actions. There is something inherently good about that. Similarly, a smaller scale, relocalized food system is something that eaters can have a human scale relationship with, customer to farmer, customer to land. Knowing where your food is from, maybe even visiting that place now and then, can provide more information, more real communication than a label on a package ever could. Through these kinds of scale-sensitive relationships, in the proximity between people, enduring relationships can grow. The kinds of farmer to chef relationships like Chef John was talking about involve commitment that can only be solidified through contact. There is something about that communication, something beneficial even in the exchange that is unquantifiable and yet good. Indeed, this is a theme that comes directly out of Lincoln County interview data: people are hungry for relationships, to their food but also to their communities and the land. A relocalized food system is no

panacea; it might not even be inherently good, but I believe a convincing argument can be made that smaller scale food systems are better.

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APPENDICES

APPENDIX A: CALCULATION OF LOCAL FOOD CONSUMPTION

To give some sense of how much locally grown food is consumed compared to food trucked in from elsewhere, in the year 2002, the value of Lincoln County agricultural products sold directly to individuals for human consumption was reportedly $219,000 from 105 farms. This data comes from the 2002 US Census of Agriculture, the most recent year for which such data is available. This means approximately 0.2% of the total amount of food consumed in Lincoln County is produced by local farmers and ranchers. Consumption of locally caught seafood is not included in this estimate.

This number was calculated in the following way:

Value of direct market food[11] *divided by* County population[12] *times* National per capita expenditure on food[13] *equals* Percentage of the total "food dollar" used to purchase Lincoln County-grown food marketed directly (e.g. at farmers' markets, u-pick, roadside stands).

- $219,000 / (44,514) ($3,044) = 0.0016 or about 0.2% for Lincoln County

For comparison, the same calculation yields:

- $1,889,000 / (79,014) ($3,044) = 0.0079 or 0.8% for Benton County, and:
- $2,327,000 / (326,879) ($3,044) = 0.0023 or 0.2% for Lane County.

Benton County's higher percentage of food consumed from local sources might be explained by the presence of several medium-sized organic farms – many of which also sell products outside of Benton County, particularly to consumers in the Portland Metro area. At the same time, farmers from neighboring counties sell products direct at the Corvallis farmers' markets. Given the quantities of food produced and consumed, tracking where and how is imprecise at best. This is especially true of direct sales of

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[11] Table 2. **Market Value of Agricultural Products Sold Including Direct and Organic: 2002 and 1997**. 2002 CENSUS OF AGRICULTURE - COUNTY DATA **OREGON 221**. USDA, National Agricultural Statistics Service. http://www.nass.usda.gov/census/census02/volume1/or/st41_2_002_002.pdf

[12] Table 1: Annual Estimates of the Population for Counties of Oregon: April 1, 2000 to July 1, 2005. Population Division, US Census Bureau. http://www.census.gov/popest/counties/CO-EST2005-01.html

[13] Table 15. Per capita food expenditures. Economic Research Service. USDA.http://www.ers.usda.gov/Briefing/CPIFoodAndExpenditures/Data/table15.htm

food; therefore these numbers are only estimates[14]. In any case, these numbers all reflect the very small percentage of "direct from the farm" food in the system as compared to the total amount of food consumed.

[14] "Most people think that the census estimates are low for direct marketing. Unfortunately it is hard to know how low." Larry Lev, Professor and Extension Marketing Specialist, OSU. Personal communication.

APPENDIX B: FARMER INTERVIEW GUIDE

Farm/Farmer name: _____ Date: _____

1. Description of your operation/history (e.g. How long in this location/area; experience farming; crops/animals grown/raised in past; markets).

2. How many total acres do you have? _____

3. Amount of acreage in production: _____

4. If you have additional acreage that you are not farming, why not?

5. Type of food products grown/raised currently:

6. Quantities?

7. Is there excess capacity (i.e. land, irrigation, equipment, labor, etc.) on your farm if you wanted to produce more?

8. Are there other products or crops that you'd like to produce that you are not already?

9. Which method or methods do you use to sell or market your products (e.g. sell wholesale, to restaurants, auction, other…)

10. Do you have the capacity to do additional processing, as needed, to make your product acceptable for sale to a restaurant or other institution?

11. Do you have the infrastructure (e.g. a truck, driver, cold storage) to deliver products locally?

12. Production practices (such as: Conventional, Certified Organic, IPM, organic - not certified).

13. Do you know of other local producers who might be interested in selling to area restaurants/institutions?

APPENDIX C: RESTAURANT INTERVIEW GUIDE

Restaurant: _____ Date: _____

1. Would you buy more local products if you could? What products?

2. What holds you back (is the supply limited)?

3. In addition to receiving deliveries from local producers, how do you purchase the ingredients for the food you serve? (Regional, national distributors…)

4. What percentage of food products are purchased locally/from local growers? Does this vary seasonally?

5. In your opinion, what products could be sold well direct to local restaurants such as yours? What market niches are not being exploited by growers?

6. Average price for a regular meal. (My estimate.)

APPENDIX D: 1940 MAP OF LINCOLN COUNTY