# Neighborhood urban agricultural hubs

## Educating adults to become more self-sufficient, towards a food secure future

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# Part 1-Preamble

## Introduction

To provide the reader with background regarding the methods that I use to approach the sustainability education problem this paper will address, I will begin by explaining the values and principles that guide my practice as a sustainability educator: deep ecology, justice and voluntary cooperation. Thereafter, I will expound on my personal leadership and educational philosophy, which is based on Kolb's experiential and Freire's radical pedagogies. To conclude this part, I will reflect on my significant learning and practices, as it relates to each of the four key Leadership for Sustainability Education learning areas: (1) self-understanding and commitment; (2) systemic view of the world; (3) bio-cultural relationships and ;(4) tools for sustainable change. I will draw on my coursework and experience interning at the Oregon Food Bank Learning Gardens, and volunteering for Growing Gardens, Heart 2 Heart Farms and Portland Fruit Tree Project. These elements will provide the reader with a backdrop for understanding the methods that I use to approach the problems in sustainability education and self-sufficiency.

## Principles and values that guide my practice

### *Deep ecology*

The primary value that guides my practice is deep ecology. I frequently pause during my daily activities to think about all the conveniences many of us benefit from, such as houses made of prefabricated materials, mass-produced synthetic clothing, motorized transportation, processed food and clean-sanitary water. During my leisure time, I occasionally watch a television program titled *How is it Made?* It helps me to understand the process of manufacturing our modern conveniences. It also prompts me to think about why our invention and use of these

modern conveniences have displaced and destroyed a plethora of living organisms such as people, animals, and bacteria.

The thought that underlies my philosophy of deep ecology is that we are only one species among many that call Earth home, yet we use more natural resources, as well as land, and alter our environment more than any other. All species fear disease, suffering and death, yet we have chosen to impose our need for survival above all else. As a sustainability leader, I seek to encourage people to take time to reflect about our significance on Earth and how we are one among many organisms.

I had the opportunity to study an ecological discipline, called Traditional Ecological Knowledge (TEK), which embodies deep ecology thinking at the outset of the Leadership for Sustainability Education program. According to TEK, we are comanagers with animals and plants. This is an example of a kincentric model, where all are equal yet have different jobs to perform here on earth. Martinez, Salamon, & Nelson (2008) say we, as human beings, must justify our existence to the natural world, and this kind of contract between animals and human beings is what has guided Indians' subsistent livelihoods. They have been hunting, gathering, and practicing agroecology and agriculture in the world for a long time (p. 90). I can understand this concept, because of my perspective about how we over-use land and natural resources, without regard for the needs of other organisms.

***Justice***

I interpret justice to mean that all inhabitants of Earth have access to the land and natural resources we need to survive. We must do this without unnecessarily imposing our needs upon other organisms and thus risking the balance of biodiversity. For example, other organisms will require more land and natural resources to thrive, but the use thereof should never pose a risk to

the existence of another organism. As a sustainability educator, I try to facilitate discussions that prompt the audience to reflect upon their actions and choices as a consumer of Earth's natural resources. Do the benefits of the action or use of the natural resource place another organism at risk, whether human or otherwise? Will long-term execution of the action or use of the natural resource potentially jeopardize biological diversity? My goal is that such a discussion will provide the impetus for a transformational learning moment.

As with deep ecology, my exposure to TEK helped me to understand the Native American perspective of justice. For them, economic globalization today has put profit before life. Furthermore, it has commodified the very life that makes up the earth-creation (Thomas-Muller, 2008).

***Sense of community***

Another principle and value that guides my practice as a sustainability educator is a sense of community. Since the advent of motorized transportation and large-scale shopping malls, where people can purchase anything under one roof, people are less inclined to form close relationships with individuals/families that live within their neighborhood. Online social networks have encouraged this behavior more (Kunstler, 1994). This cultural norm, coupled with much of food grown outside city limits, has led to people becoming unfamiliar with the process of growing food, as well as a sense of community.

For the Okanagan people, the idea of community is complex. It involves a holistic view of interconnectedness, which demands their responsibility to everything that they are connected to. Their traditional decision-making, grounded in this view, involves a process they call "En'owkin", which means to "nurture voluntary cooperation by coming to an understanding through a gentle integrative process" (Armstrong, 2005). This concept is an important

component of my practice as a sustainability educator, because it is the means in which residents of The United States can address food insecurity. Through voluntary cooperation a community can work together to meet their needs.

## Educational/leadership philosophy

### *Experiential learning*

As a garden educator, experiential learning is an important component of my educational philosophy. With this philosophy, adult learners use all their senses and engage in critical thinking about the process of growing and raising their own food. Experiential learning is the process whereby people acquire knowledge through the transformation of experience (Kolb, 1984). When adult learners are involved with the "concrete experience" of growing their own food and raising small livestock (for example, chickens, goats and rabbits), they will become more aware of the food system, which will serve to reconnect them to their bioregion and watershed. Growing their own food and raising small livestock will also help them to understand how they are interconnected and dependent upon the entire ecosystem. This is a fundamental departure from the usual dependence upon the industrial agricultural model to meet a population's food needs.

### *Radical education*

I subscribe to a radical philosophical approach to education since I see it as the only method to make profound changes in society. Using this approach, educators need to begin teaching the public about industrial agriculture, and contrast it with sustainable agriculture, for a dramatic paradigm change to occur. Unfortunately, many people have adapted to the industrial agricultural model, and accepted the status quo.

Instead of adapting to situations, people must learn how to integrate. Freire (1974), contrast integration and adaptation saying integration results from the capacity for people to adapt themselves to reality, in addition to the critical capacity to make choices and to transform that reality. When people lose their ability to make choices and they are subjected to the choices of others, to the extent that his/her decisions are not his/her own because they result from external prescriptions, they are no longer integrated. Instead, they have adapted and adjusted (p. 4). Many people have adjusted to others controlling food production, and the decisions they make. They must become aware of the reality of the situation.

Industrial agricultural corporations, using mainstream media, disseminate information that favors their practices. Freire (1974) is highly critical the decisions of those frequently referred to as the "elite," and now frequently called the 1%. The greatest tragedy is how organized advertising perpetuates myths and manipulations, ideological or otherwise. Gradually, without even realizing the loss, humanity has relinquished its capacity for choice; it has expelled it from the orbit of decisions. Ordinary people do not perceive the tasks of the time; the latter are interpreted by an "elite" and presented in the form of recipes, of prescriptions. Freire (1974) says, "when people try to save themselves by following the prescriptions, they drown in leveling anonymity, without hope and without faith, domesticated and adjusted" (p. 5). People must take back the food system.

As a sustainability educator, my objective is to challenge the societal values that have contributed to the problems with the current food system. The current food system, based on industrial agricultural, has led to inequitable food distribution, such as increasing consumer costs. It has also compromised the ecological balance by intensive agricultural practices that use genetically modified seeds, herbicides, and pesticides, which threaten essential pollinators.

Subsequently, industrial agriculture has led to these problems and society must challenge and change the accepted norm (Roberts, 2008).

### *Sustainability leadership: Egalitarianism*

As a sustainability leader, I identify with an egalitarian model of leadership (Ferdig, 2007) because I do not see myself as an authoritative person who has all the answers about sustainability. Rather, I perceive that I am responsible for creating opportunities for people to collaborate. Instead of giving direction, I seek to develop and implement actions in collaboration with others and modifying them as needed to adapt to unforeseen changes in the environment over time. I recognize that the experience of change itself, and the dissonance it creates, fuels new thinking, discoveries, and innovations that can revitalize organizations, communities, and ultimately the earth (Ferdig & Ludema, 2005). I recognize that any solution that I propose to address problems with the food system will require input from everyone.

Everybody in their communities has the right to participate in making decisions, especially when it relates to the food system, but the current organizational structure does not permit this. Corporations, investors and politicians too often dictate what, where and how food is produced (Roberts, 2008). People must become proactive and reorganize the food system so that it is more inclusive, democratically organized, and removes all barriers to food access (Cockrall-King, 2012). In an egalitarian system everyone who is able would participate in growing, raising, and gathering their own food, and helping their neighbors.

## Reflection on LSE 4 key learning areas

### *Self-Understanding and Commitment*

During the process of taking classes for the LSE program, I have developed a clearer understanding of myself and my sense of commitment to leadership for sustainability education.

While writing reflection papers for *Advanced Leadership for Sustainability*, as well as *Ecological and Cultural Foundations of Learning*, I learned how to articulate my sustainability values and ethics. Specific assignments that helped me were writing about my personal leadership and professional and authentic teaching philosophy. For example, I learned how to describe my interpretation of radical educational philosophy as it applies to my field of garden education. My Community Based Learning experience as Seed to Supper Garden Educator for Oregon Food Bank helped me to solidify this understanding. Through teaching adults basic gardening skills, I discovered that I am passionate about agriculture and able to connect with people through it.

***Systemic View of the World***

During the LSE program, I developed a systemic view of the world by discovering how everything is interconnected. Wheatley (2006) says, "In this world, the basic building blocks of life are relationships, not individuals. Nothing exists on its own or has a final fixed identity" (p. 170). I learned the importance of relationships while taking the *Geography of Food* course, where I developed a global perspective of the food system by reading books, such as *The Atlas of Food* (Millstone & Lang, 2008), and watching documentaries like *We Feed the World* (Wagenhofer, 2005). However, the experience that helped to solidify my grasp of a systemic view of the world was when I took photographs of the Port of Portland during a leisurely stroll. That helped me to understand how far food has traveled, or is traveling, and the jobs it creates. A systemic view of the world is complex, especially when it pertains to the food system.

### *Bio-cultural Relationships*

Given the complexity of the food system it is important for me to continue to develop bio-cultural relationships and strategies regarding how I can work collaboratively with diverse groups to affect change. One class that helped me contemplate this as I began the Leadership for Sustainability Education program was *Educational Organization and Administration*. During the course, I developed a conceptual foundation for identifying, analyzing, and solving problems of an organizational nature within the context of education and other human services work. The readings proved especially useful because they covered interpersonal and group dynamics. Bolman and Deal (2008) distill everything down to attitude, specifically transparency about feelings when they say, "Openness carries risks, and it is hard to be effective when you are ambivalent, uncomfortable, or frightened. It gets easier as you become more confident that you can handle others' honest responses" (p. 173). Most people have an innate fear of hunger, which is something I will need to keep in mind as I network and develop diverse partnerships and address problems with the food system. In that context, every individual feels differently regarding her or his power and privilege concerning access to the food she or he needs.

### *Tools for Sustainable Change*

During spring term of 2013, I took a course that gave me some tools to begin enacting sustainable change with the food system, called *Urban Farm Education: Food Policy, Curriculum Design, and Action!* One class assignment required that I select a policy document to review and report to the group, where I would identify leverage points. I chose the *Multnomah Food Action Plan* (Multnomah County Office of Sustainability, 2010). Of interest to me is Multnomah County Office of Sustainability's goal of increasing urban food production. The first objective in their third goal especially stands out to me:

> (3.1) Establish a hub and neighborhood-based food resource centers that educate through demonstration projects and hands-on programming such as gardening, cooking, and preserving food, emergency preparedness, energy conservation and other sustainability issues, and also includes amenities such as lending libraries (like tool libraries), meeting spaces, resource sharing opportunities such as a seed bank, garden and commercial kitchen space (p. 17).

The Multnomah County Office of Sustainability (2010) elaborates ways that residents of the county can act. Among these steps are joining the "Food Not Lawns" movement (p. 15) by converting grass, parking strips, and other underutilized space for food production, rent a plot at a local community garden, and lease or donate underutilized and surplus land for community gardens or small-scale agriculture.

With my self-sufficiency in mind, I rented a plot at a community garden in March of 2013 and underwent training to become a Seed to Supper Garden Educator for Oregon Food Bank. I taught my first Seed to Supper class that spring and began my role as Garden Educator at Rachel Carson Environmental Middle School. My role as a leader in sustainability education had begun.

## Part II-Academic Synthesis

### Introduction

Once we understand our disconnect from nature we will begin to see how our attempt to control it has led to a myriad of problems, notably disturbing is the biodiversity of ecosystems that have led to food insecurity. To increase food security and to empower adults to become more self-sufficient in meeting their food needs year-round, education about urban homesteading should be readily accessible to the public at neighborhood urban agricultural hubs

that provide classes and mentoring programs. This is merely a first step towards moving to a permaculture society, which is the objective, whereupon humanity would live in a well-balanced relationship with nature. It will be a gradual process and take time to heal the Earth and its ecosystems.

## Literature Review

The following review of relevant literature gives context for the aforementioned statement and lays the foundation for a solution. After a brief overview of the problem and the objective, three sections will examine the following: how urban agriculture, Traditional Ecological Knowledge, and transformative along with place-based learning can address the problem.

### The problem

Since the advent of agriculture 10,000 years ago (Wells, 2010), humanity has increasingly made the food system it depends upon more complex, much to its detriment. They were responding to an immediate need for more reliable sources of food during a time of climate stress, clearly making decisions about the future based on the near term rather than how events might ultimately play out. They were unaware of what they were letting loose on the world by changing their fundamental relationship with nature. Instead of relying on nature's plenty, they were creating it for themselves and by doing so divorced themselves and us from millions of years of evolutionary history. They charted a new course into the future without a map to guide them through the consequences that would appear over the subsequent then millennia (Wells, 2010). The modern era is a prime example.

The tectonic agricultural shifts of the Industrial Revolution reached earthquake intensity in the latter half of the twentieth century. In particular, a "Green Revolution" began after World

War II, prompted by peace and an aspiration to feed a growing world, and facilitated new high-yield crop varieties, irrigation techniques, and synthetic pesticides and fertilizers-starting with a postwar American surplus of ammonium nitrate, and ingredient in explosives (Fox, 2011). Inexpensive oil and water fueled the revolution. In the United States, the practice of farming evolved into "agribusiness" thanks to economies of scale, government subsidies, and an official bias best captured by the mandate of Earl Buz, Secretary of Agriculture under President Nixon, and Ford: "Get big or get out" (Fox, 2011). Industrialization prompted the divorce of urban and rural, with rural getting sole custody of agriculture, which was an arrangement that remains the status quo.

The distance most food travels in the U.S. before it reaches the consumer is staggering. On average, food travels the country 1,546 miles, from farm to plate (Pirog, Van Pelt, Enshayan and Cook, 2001). About local food, according to the definition adopted by the U.S. Congress in the *2008 Food, Conservation, and Energy Act*, the total distance that a product can be transported and still be considered a "locally or regionally produced agricultural food product" is less than 400 miles from its origin, or within the state in which it is produced. Using that definition as a guideline, the U.S. Department of Agriculture (2010) reported that local food sales account for eight percent of overall agricultural sales (p. 1). This is a mere drop in the bucket. The current food system is dependent on petroleum, which has its drawbacks.

The cost of food production is more than passed along to the consumer, because the environment also suffers. The industrial food system is responsible for 15 percent of the energy consumed in developed countries. The annual expense of soil erosion worldwide is estimated at $400 billion. Every year in the U.S. farmers use 450 million kilograms of pesticides, polluting virtually all the nation's waterways with chemicals known to cause cancer and birth defects

(Edwards, 2010). The current methods used for producing food for human consumption on an industrial scale is damaging human health, biological diversity and the entire earth's ecosystem. Furthermore, the emphasis on monoculture is limiting the availability of fresh fruits and vegetables (Kingsolver, 2007). Berry (1977) traces all these problems in the United States to American citizens consigning the problem of food production to "agribusinessmen" (p. 20). They have forgotten of their past.

Once upon a time, the prevailing human metaphor was pastoral or agricultural, and it clarified, and so preserved in human care, the natural cycles of birth, growth, death and decay. However, modern humanity's main metaphor is that of the machine. Having placed ourselves in charge of nature, we began to mechanize both the nature itself and our conception of it. We began to see the all of nature merely as raw material, to be transformed by machines into a manufactured Paradise (Berry, 1977). It is time to pause and reflect upon the lessons of the past.

**The objective**

A utopian dream is to get back to nature, and to gradually return the Earth to a state of harmony before the advent of modern agriculture. However, it is unfathomable to imagine eight billion people hunting and gathering. Nevertheless, there is a middle ground, called ecological gardening, which is better known as permaculture. Permaculture, which is a contraction of both "permanent" and "culture," uses a set of principles and practices to design sustainable human settlements. Permaculture, or "permanent agriculture," was created by two Australians, Bill Mollison and David Holmgren and began as a tool for designing landscapes that are modeled after nature, yet include humans (Hemenway, 2009). Individuals can incorporate the principles on a small scale by developing ecological gardens.

Ecological gardens join the best features of wildlife gardens, edible landscapes, and conventional flower and vegetable gardens, but they are more than the sum of their parts and go beyond just adding these styles together. An ecological garden feels like a living being, with a character and essence that is unique to each. They use time-tested techniques honed to perfection by indigenous people, restoration ecologists, organic farmers, and forward-looking landscape designers (Hemenway, 2009). An example of two forward-looking individuals is Eric Toensmeier and Jonathan Bates.

In 2004, Toensmeier and Bates purchased a duplex in Holyoke, Massachusetts, which had a tenth-of-an-acre lot that was barren ground, with bad soil peppered with broken piece of concrete, asphalt, and brick (Toensmeier & Bates, 2013). The two imagined a lush paradise of fruits and berries, interspersed with ponds, greenhouses, and bountiful beds of annual crops. Following the advice of permaculture experts, they observed the site for a year. Their objective was to follow the principle of regenerative design, to heal it and its ecosystem, which would help to bring the land to life and bring them into a deeper relationship with it and each other. Regenerative agriculture, which permaculture aspires to be and often actually pulls off, achieves these goals while also meeting human needs (Toensmeier & Bates, 2013). While the need to move to a society grounded in permaculture principles may be clear, it must be done gradually. The first step is a return to urban agriculture.

**Need to shift to urban agriculture**

Historically, urban agriculture and gardens were a source of resilience for a long-term solution to food security in urban areas. During the 1900s, urban gardens saved millions of people from starvation in urban areas (Barthel and Isendahl, 2012). For example, during World War I allotment gardens played a crucial role in supplying urban dwellers in Britain with

vegetables, providing two million tons of vegetables by 1918. As part of the *Every Man a Gardener*-campaign, people planted allotment gardens in parks and sports fields-even at Buckingham Palace. The movement began to wane after World War II. The problem lies in the fact that modern urban sociology has unintentionally developed an attitude of the city as an essential reality separate from life supporting ecosystems, which has proved difficult to get rid of, since it continues to permeate urban policy and planning (Barthel and Isendahl, 2012). However, some urban areas are reevaluating urban planning to accommodate urban agriculture and gardens.

In recent years, urban planners and municipal policymakers have proposed tools and strategies to achieve greener cities that are both ecologically and socially sustainable. One strategy, that until recently urban planners overlooked, is urban agriculture. Urban agriculture includes community and private gardens, edible landscaping, fruit trees, food-producing green roofs, aquaculture, farmers markets, small-scale farming, hobby beekeeping, and food composting. A small but growing body of literature directly connects urban agriculture with environmentally and socially sustainable communities (Mendes, Balmer, Kaethler, & Rhoads, 2008). There is also research that shows that urban agriculture has extensive benefits.

Urban agriculture helps meet local food needs while promoting environmental sustainability. Community and school gardens, and hybrid urban agriculture provides opportunities for community involvement, social interaction among ethnically and age-diverse communities, and health and environmental stewardship education. Urban agriculture can foster community building, mutual trust, sharing, feelings of safety and comfort, and friendships that translate to a collective investment in the common good of a neighborhood (Hodgson, Campbell, & Bailkey, 2011). The decoupling of food production from food consumption in urban areas is a

recent phenomenon. Unfortunately, because of high-density urban development in some cities, some people might not have adequate space to grow, raise, or gather food.

Kate Sutherland did not have the space she needed to grow the vegetables she wanted in her Vancouver neighborhood (as cited in Tracey, 2011, p. 107). However, she found a neighbor who did, and who shared her passion for growing more local food as an alternative to industrial agriculture. They expected that they were not alone, so they handed out leaflets around the block. Consequently, a movement was born, and thirteen people showed up to the first meeting. The group now shares a cluster of backyards they cultivate together, all showing up at one place for work parties to do group tasks such as assembling a plastic greenhouse or setting up a new beehive. The mutual support network goes beyond agriculture. When one of the member's husbands got sick, the others took turns in bringing meals for the couple (Tracy, 2011). Convinced of their success, they have begun to publish details.

Sutherland's blog (twoblockdiet.blogspot.com) includes a link to *Two-Block Diet-An Unmanual*. They suggest connecting with one to three friends, and if all agree, taking the idea of a food-growing group to others on the same street (Tracy, 2011). This is the inspiration behind the concept of Neighborhood Urban Agricultural Hubs.

On the other hand, it is not enough to empower people to become producers of local food. That task is too mechanical, and the relationships they describe too limited. We need to move beyond political and environmental correctness, because eating locally is important, progressive, and fashionable. Our challenge, as academics, and practitioners, as people engaged in relocalizing the food system, will be to find ways to stretch our experiences and awareness to a point where "local" as food, as farmland, as the culture and ecology of real places starts to "be" us and define us wherever we are (Delind, 2006). We need to move beyond the creation of

lifestyles through consumption and challenge ourselves to create places through acts of physical engagement and cultural identification. Eventually, we will need to commit our bodies as well as our rhetoric and checkbooks, which means moving beyond individual self-interest, living with multiple generations, and rejoicing in our defining, but always flexible, connections to the place(s) we call home (Delind, 2006).

When this occurs, local food will be something that we share, something that we actively learn-from our cells and our soil on up-rather than something we eat. By doing this, we will be engaging in a place-based identity politics that has the possibility to keep us grounded, affirmed, and diverse to give us with a solidarity for resisting, exposing, and restructuring the institutionalized sources of power and inequality that currently dominate our lives (Delind, 2006).

**Learning from TEK: A systems perspective**

When asked why we eat food, few think beyond the fact that food is necessary to support the life and growth of the human body. For Fukuoka (1978), there is the deeper question of the relationship of food to the human spirit. He says, “For animals, it is enough to eat, play, and sleep. For us too, it would be a huge accomplishment if we could enjoy nourishing food, a simple daily round, and restful sleep” (p. 134). Unfortunately, this is not the case.

The European concept of the natural world, which has become a dominant model globally, views knowledge and culture as property, with the attitude that people can freely exploit commodities at will by selling and buying whenever they please (Goldtooth, 2008). Unfortunately, food has become one of those commodities (Thomas-Muller, 2008). This has resulted in disharmony between human beings and the natural world, as well as the current

environmental crisis threatening all life (Goldtooth, 2008). Humanity must develop a new economic model. It must reacquaint itself with nature.

The Okanagan practice a bioregional self-sufficient economy. Because of surviving together for thousands of years, they realize that the total community must be engaged to become sustainable (Armstong, 2005). The practical aspects of willing teamwork within a whole-community system clearly emerged from having to cooperate to survive. This idea of whole-community, as understood by the Okanagan, includes a complex holistic view of interconnectedness that demands responsibility to everything that they are connected to (Armstong, 2005). The problem with the current economic model is that most people consume food grown outside their region, and do not practice self-sufficiency.

We own our food, and yet we have lost control of our foods because most of us do not grow, raise, or gather anymore. We let other people do that. Farmers and anglers, ranchers, and gatherers, are the real stewards of our food and yet through marketing, distribution, food policies, and other economic and political demands, even these food caretakers are struggling to keep control of their food production (Nelson, 2008). In addition, most of us consume food today that is highly processed.

The historical shift of going from slow food to fast food in the last fifty years has deep roots in colonial and economic processes of power and politics (Nelson, 2008). As the U.S. government has slowly, yet consistently, tried to erode Native American sovereignty, corporate powers have gradually and systematically taken away the food sovereignty of all Americans. We can again take responsibility for knowing where our food comes from and what the environmental, health, and energy cost it was produced, from the carbon footprint to human

impact (Nelson, 2008). Humanity must begin to understand how its choices affect the world at large.

**Place-Based and Transformative Learning: Learning to live in place**

If humanity wants to take its environment seriously, then we must come to terms with the root of our problems, beginning with this place called home. This is not a naive return to a mythical past, but a patient and disciplined effort to learn, and in some ways, relearn the arts of inhabitation. These will differ from place to place, reflecting diverse cultures, values, and ecologies. Everyone is different. They will, however, share a common sense of rootedness in a locality (Orr, 1994). By learning to live in place, humanity will undergo a transformative learning experience.

Transformative change is not like an acquired skill or bit of knowledge that is limited to one dimension; it is a fundamental "sea-change" that encompasses the whole person (Ball, 1999). Learners who are seeking a transformative experience may therefore want to head themselves into situations where their fundamental values, perspectives and assumptions will be challenged, and where strong and primal emotions are likely to be evoked. These might be experiences where the person comes face to face with, and is immersed in, entirely new, unsettling, and unfamiliar circumstances (Ball, 1999). For many people, this is an encounter with nature, because they are experiencing a lack of exposure, which Richard Louv (2011) calls nature-deficit disorder.

Nature-deficit disorder is an atrophied awareness, a diminished ability to find meaning in the life that surrounds us, whatever shape it takes. This decline of our lives has a direct impact on our physical, mental, and societal health. However, not only can nature-deficit disorder be reversed, but also our lives can be enriched through our relationship with nature,

beginning with our senses (Louv, 2011). One method of reconnecting people with nature is to teach them urban homesteading skills. It is the first step in moving humanity towards a society based on principles of permaculture, which is a society keenly aware and connected to nature.

**Solution: Introduction and overview**

The proposed solution to address problems with the food system is based on ecological design, and entails setting up neighborhood urban agricultural hubs. Good design everywhere has certain common characteristic, including right scale, simplicity, efficiency, a close fit between means and ends, durability, redundancy, and resilience (Orr, 2011). When people practice self-sufficiency within their neighborhood, and cooperate to help meet each other's needs, the food system will have a closer fit from farm to table. This is merely the first step in moving towards a society founded on the principles of permaculture. The key lies in community.

A community-based solution, one that is grounded in voluntary cooperation, is central since not everyone will have the time, space, or ability to grow, raise, or gather his or her own food. Moreover, not everyone will know how. The proposal is to find community gardens, school gardens, find neighbors willing to share lots that border one another, or buy vacant lots to designate as neighborhood urban agricultural hubs, which would be designed on the principles of permaculture, where neighbors will learn and practice urban homesteading skills. They will also could find mentors. In addition to acting as a venue for hands-on learning, neighbors would voluntarily cooperate to grow, raise, gather, and preserve food for those who are unable to be self-sufficient. This practice will address the economic barriers many have to buying fresh fruits and vegetables. It will also reconnect people back to nature. The first key is finding space.

California Governor Jerry Brown recently signed a bill that serves as a model for future measures, which would encourage the development of Neighborhood Urban Agricultural Hubs. The bill is called the *Urban Agricultural Incentive Zones Act* (Zigas, 2013, "California's New Urban Agriculture Property Tax Incentive," para. 1). It addresses a problem common with urban agriculture, tax incentives for setting land aside. Romney (2013) says the legislation, signed September 28, 2013, will allow municipalities to lower the assessed value — and property taxes — on plots of three acres or less if owners pledge to dedicate them to growing food for at least five years. The legislation authored by Assemblyman Phil Ting (D-San Francisco) arose from this city's rich blend of urban agriculture interests: community gardens with long waiting lists, nonprofits that offer hands-on nutritional education and small enterprises that took root when officials in San Francisco changed zoning laws (para. 4) In order for Neighborhood Urban Agricultural Hubs to succeed in Oregon, for example, people would need to introduce a similar measure. It will need to be a grassroots movement, with citizens mobilizing to gather signatures to file a petition. There is another possibility.

A different approach would be for citizens to write his or her United States congressperson and encourage him or her to introduce a bill in the House or Senate that would expand federal tax deductions for individuals/families to include itemized deductions for urban agriculture. It would function like how the IRS gives federal tax credits for buying energy efficient appliances. People would save their receipts and enter the amount of the government approved equipment, seeds, or gardening product on a newly developed Urban Agriculture IRS Form, and receive credit for their purchases. This would help to encourage individuals/families to grow their own food. Naturally, some may not know how, and need to learn.

Because education is the cornerstone of the solution, it is important to network and highlight the work of local businesses, nonprofits, educational institutions, and individuals that give a chance for the public to learn about urban homesteading skills. Numerous businesses and nonprofits exist in Portland, for example, Growing Gardens, Living City Portland, Portland Homestead Supply Co., and Oregon Food Bank. Except for Portland Homestead Supply Co., these organizations teach classes to participant at their site. Most metropolitan areas have similar businesses and nonprofits. It will be important to use various media sources and encourage people to spread the word about learning opportunities in their area.

The part absent from most gardening and urban homesteading courses is knowledge about ecological gardening. (This is why it is important that the Neighborhood Urban Agricultural Hubs are designed on the principles of permaculture.) The solution incorporates ecological gardening, because it is not enough to empower people to become producers of local food. That task is too mechanical, and the relationship too limited (Delind, 2006). Nevertheless, it is a vital first step in reconnecting people with nature. It is for this reason that it will be important to educate people about the principles of permaculture, albeit gradually; small steps are essential.

Each Neighborhood Urban Agricultural Hub should have at least one person who is certified as a permaculture designer, and skilled at teaching, and is ideally someone who is a resident. This would assure that the individual could identify with socio-economic classes and ethnicities of that specific area. He or she would also know more about the local watershed and ecology. Because of his or her personal stake in and knowledge of the area, he or she would be able to effectively use place-based and transformative pedagogical approaches, instead of

someone who might be unfamiliar with the area. The key would be to find a means to organize this, which ideally are neighborhood associations.

Neighborhood associations serve as an ideal organization to help facilitate collaboration between residents, businesses, nonprofits, and civic leaders, to help find the specific needs for that area to set up a neighborhood urban agricultural hub. Each will vary because of its demographics. Moreover, some will lack certified permaculture designers, while others might lack a nearby nursery or usable space. Each will know what they need. Nevertheless, obstacles will be met.

**Supports and challenges**

Since the solution is multifaceted, that is, aims to address various parts of the food system, for example, education, federal and state tax structure, and urban planning, it is likely to face challenges that enable its implementation. However, there are existing organizations that can give support on how to overcome them.

Finding and training individuals who are certified permaculture designers might be daunting, because of numbers and coordination. For instance, there are ninety-five neighborhoods in Portland. That means a minimum of ninety-five certified individuals. The Dharmalaya Center in Eugene, Oregon has a program called *Permaculture Passport Program*. It is a nine-day collaborative regional permaculture sample program, which might serve as a model for partnerships in the Portland metropolitan area. Perhaps City Repair and Cascade Permaculture Institute could form a similar partnership.

Convincing the state and federal government to issue tax credits for urban agriculture to encourage the establishment of neighborhood urban agricultural hubs will face opposition from corporate interests, such as industrial scale farmers. They will feel threatened by the idea of

decommodifying food. That, in addition to urban zoning regulations, will make this a challenging solution to implement. Nonprofits like Ecotrust, Oregon Tilth and Partners for a Hunger Free Oregon have a history of lobbying and will prove invaluable resources.

**Leadership strategies**

Because the concept of neighborhood urban agricultural hubs is new and multifaceted, the leadership strategy must be flexible to adapt to change, since as it is implemented over time, the needs vary. Existing neighborhood associations are ideal to serve as a starting point as hubs begin to organize. However, over time, as the number of hubs increase, leadership needs will concurrently. Therefore, the most effective leadership strategy is based on self-organizing systems.

We are beginning to see organizations that are learning how to use the power of self-organization to be more responsive and efficient. There are increasing reports of organizations that have given up any dependence on permanent structures. (Permanent structures are rigid and mechanical, thus the root of many societal problems, in this case industrial agriculture.) They have eliminated rigidity-both physical and psychological- to support more fluid processes whereby temporary teams are created to deal with specific and ever-changing needs. They have simplified functions into minimal categories; that have knocked down walls and created workplaces where people, ideas, and information can circulate freely (Wheatley, 2006). Because each part of the solution I am proposing needs a distinct set of leadership skills, which may not always exist, the self-organizing model is ideal.

For the solution to be successfully implemented, it will need to draw upon leadership from cultural centers, government agencies, higher education institutions, local homesteading/gardening businesses, nonprofits, and religious institutions. Initially,

municipalities, urban planners, and neighborhood associations will need to meet to formulate a strategy for implementing the solution. It requires that these leaders and residents help to find sites that are convenient and accessible for neighborhood urban agricultural hubs. If land is not available, a grant writer may need to step in, or a philanthropist, to buy space for urban agriculture. Likewise, higher education institutions, local homesteading/gardening businesses, and nonprofits will need to increase the classes they offer to instruct people about composting, gardening, food preservation and raising small livestock. Cultural centers and religious institutions can offer ethnically specific education. When leadership appears from these various disciplines, the solution can take shape, and organize itself according to where there is need.

## Conclusion

The implications of implementing the solution are far-reaching. Initially, it will reacquaint people with the skills needed to become more self-sufficient, that is urban homesteading, and build community through voluntary cooperation. That will result in removing barriers for people to access healthy organic fresh whole food more readily. The practice of relying on food grown, raised, or gathered within a neighborhood, will also decrease human impact on the environment. By implementing the practice of educating people about permaculture, it will help to get them back in touch with nature. This will all help to shift them from a mechanistic way of thinking to an organic. It is all part of an ecological paradigm for education.

Ecological thinking requires a shift of emphasis from relationships based on separation, control, and manipulation, towards those based on participation, empowerment, and self-organization. (Sterling, 2011). People have increasingly separated themselves from nature and depended on a food system that involves controlling and manipulating the ecosystem. Besides,

people are often discouraged and confused about the food they consume. When people get directly involved with food production, their thinking will begin to shift. The learning experience will be transformational. The solution proposed is intended to encourage them to shift their thinking and reeducate them. It is intended to help reconnect them with nature.

My concept of Neighborhood Urban Agricultural Hubs is designed to help people learning to live together, by fostering voluntary cooperation. It will also encourage people to know the skills they need to be self-sufficient, by engaging in the practice of urban homesteading. And by teaching people how to ask, as Berry (1987) would say, “What is here? What will nature allow us to do here? What will nature help us do here? (p. 146). That is permaculture; that process is authentic life-long learning.

A review of the literature about urban agriculture (UA) suggests that it promotes environmental sustainability, helps to meet local food needs, and can foster community building, mutual trust, sharing, feelings of safety and comfort, and friendships that translate to a collective investment in the common good of a neighborhood (Hodgson, Campbell, & Bailkey, 2011). Although urban agriculture is emerging in North American, the question is still what are the urban planning policy barriers and leverage points? Moreover, is there enough available space within an urban area to grow, raise and gather food to sustain a population? These questions need further research.

My recommendation is that this conversation takes place outside academia and involves all people who are motivated to become actively involved. The Multnomah County Office of Sustainability hosts an event annually called the Multnomah Food Summit. I will contact the organizers to find an opportunity to present to the public at the next event. There are also individuals who have expressed interest.

During the past year, I have met several people who are interested in my concept. Dan Bravin, the Food Program Coordinator for the Multnomah County Office of Sustainability, Pukraj Deol, the Urban and Community Horticulture Instructor for the OSU Extension Service in Washington County, and Spencer Masterson, the Community Resource Developer, have all expressed interest in learning about the concept of Neighborhood Urban Agricultural Hubs. The most significant opportunity in March 2014 will be when I have an opportunity to work side by side with Heiko Koester, a permaculture designer and teacher, in the River Road area of Eugene, Oregon. The area has multiple urban agricultural hubs, designed on principles of permaculture, which often function as teaching sites. They serve as an excellent example of neighborhood urban agricultural hubs. Therefore, I will see a working model of the solution I have proposed.

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