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Local food hubs for alternative food systems: A case study from Santa Barbara County, California

David A. Cleveland^{a,*}, Nora M. Müller^a, Alexander C. Tranovich^a, D. Niki Mazaroli^b, Kai Hinson^a^a Environmental Studies Program, University of California, Santa Barbara, CA 93106-4160, USA^b Bren School of Environmental Science and Management, University of California, Santa Barbara, CA 93106, USA

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The mainstream food system in the industrialized world is dominated by large, private corporations, and is highly concentrated spatially and structurally, resulting in high levels of production, but also many negative environmental and social externalities. There is growing interest in alternative food systems as a way to reduce these externalities and increase food system sustainability. Localization has become a favoured strategy of advocates for alternatives, and ranges from incremental changes from within the mainstream system to challenging that system by creating grassroots alternatives that prioritize social and environmental goals over economic ones. A major obstacle to localization is the lack of economic, organizational and physical structures of the appropriate scale for local aggregation and distribution of food. Local food hubs are emerging as an important tool for overcoming that obstacle by pooling food products from a number of smaller farms and delivering them to grocery stores, schools, hospitals and restaurants. The fundamental challenge of local hubs as grassroots alternatives to the mainstream is how to be economically viable within a system dominated by the goal of economic profit, while working for social and environmental goals that the mainstream doesn't value, or even works against. We first provide an overview of how hubs have been theorized, in terms of 'mainstream' vs. 'alternative' and large- vs. small-scale, and how in practice they are often hybrids. Our case study of the creation of a successful local food hub in Santa Barbara County, California, USA, includes the perspectives of key food service staff in a large institutional buyer (The University of California, Santa Barbara's Residential Dining Services) that played a key role in the growth of the hub, the owners of the local hub, and some of the small-scale farmers the hub purchased from. We conclude that keys for success included scaling up from direct marketing rather than scaling down from mainstream distribution, and the actors motivations to prioritize social and environmental over economic goals.

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1. Introduction

The mainstream food system in the industrialized world is dominated by large, private corporations, and is highly concentrated spatially and structurally, resulting in high levels of production, but also in many negative environmental and social externalities (Friedmann, 2009). It has become increasingly dominated by long-distance import and export (Saltmarsh and Wakeman, 2004), driven by economic globalization and relatively cheap energy (Martinez et al., 2010). Most people in the US obtain food from the mainstream food system—large grocery stores,

restaurants, and institutions such as college dining commons, workplace cafeterias and health care facilities, which typically source their food from centralized, regional or global distributors that buy from large-scale producers (Martinez et al., 2010).

There is growing interest in alternative food systems as a way to reduce these problems and increase food system environmental and social sustainability. Localization has become a favoured strategy of advocates for alternatives, with local food hubs often a key component, but with mixed results. For practitioners and researchers, therefore, the question is How can alternative local hubs be economically viable within a system dominated by large-scale national and global distribution networks, and therefore lacking supporting economic, organizational and physical structures of the appropriate scale, and at the same time successful in working for

* Corresponding author. Tel.: +1 805 893 2968.

E-mail address: cleveland@es.ucsb.edu (D.A. Cleveland).

social and environmental goals that the mainstream doesn't value, or even works against?

While there is an increasing amount of research on food hubs, there are few detailed case studies of the creation of successful local hubs as alternatives to the mainstream food system. This article reports such a case study in Santa Barbara County (SBC), California. SBC is especially relevant to the debate about local food hubs because it is a major agricultural county producing an abundance of food, mostly produce (fruits and vegetables) year round. SBC agricultural production was valued at \$1.22 billion in 2010, which placed it in the top 1% of all counties in the US (SBC ACO, 2010). There is also an active localization movement in the county, but the food system remains dominated by the mainstream global system. For example, less than 5% of produce consumed in the county was grown in the county in 2009, while almost 99% of the produce grown in the county was exported out of the county (Cleveland et al., 2011). While it is typical in terms of the dominance of the mainstream global distribution system, it is unique in having the potential for supplying year round all the produce consumed in the county with produce grown in the county. This means that there are no environmental barriers to localization, at least for fruits and vegetables, so that analysis of alternatives can focus on the roles of physical scale and motivations in determining success.

We organized this paper by first defining 'local' food hubs, focussing on their relation to the debate about mainstream vs. alternative food systems, and give an overview of existing research on local hubs, stressing their hybrid nature (Section 2). We then present the case study of the development of a successful food hub in SBC, and the relationship of this success to the broader goals of hubs embodied in the motivations of the principle actors involved. These actors include Farmer Direct Produce (FDP), a local food hub that delivers to local customers, and buys mostly from local farmers (Section 4), the Residential Dining Service (RDS) at the University of California, Santa Barbara (UCSB) (Section 5), and small-scale local farmers who sell to FDP (Section 6). We conclude by drawing lessons for the role of local food hubs as alternatives to the mainstream food system (Section 7).

2. Understanding local food hubs as hybrids

Spatially local food systems in the US have been increasing dramatically as an alternative to the mainstream, led by direct sales between farmers and local customers, via CSAs, farm stands U-pick operations and farmers markets. However, direct marketing currently still accounts for a very small proportion of total food sales—according to the USDA, direct sales by farms was valued at \$1,029,160 in 2007, only 0.4% of total farm sales for that year (USDA NASS, 2009).¹ A major obstacle to localization is lack of economic, organizational and physical structures of the appropriate scale for moving locally grown food to local eaters. The places where nearly all food is bought are vertically linked physically and economically to a global food system. New ways of structuring food distribution hubs are increasingly being considered a key for overcoming this obstacle (Zajfen, 2008). Local food hubs are a means of aggregating and distributing food by pooling food products from a number of smaller farms and delivering them to grocery stores, schools, hospitals and restaurants.

A major challenge for local food hubs is the lack of supporting economic, organizational and physical structures of the appropriate scale. To meet this challenge, hubs as alternatives to the mainstream have to scale up from direct marketing, or scale down from large-scale distribution networks, while maintaining their motivations and goals for alternative food systems. This can be made more difficult by the move toward localization from within the mainstream food system, that seeks to capture increasing consumer demand, while sharing few if any of the goals of alternative localization efforts. Thus, local food hub initiatives have been categorized as either an 'idealistic' approach that challenges the basic assumptions of the mainstream by prioritizing environmental and social goals, or an 'instrumentalist' approach in response to 'consumer demand for local' which seeks to adjust the mainstream food system by reducing what have become 'unacceptable externalities' (Ilbery and Maye, 2005).

This tendency to think of the mainstream and alternative perspectives on hubs and the food system in dichotomous ways has been challenged as an 'overly simplistic binary contrast' (Hinrichs, 2000), and Izumi et al. (2010b) insisted that regionally-based food distributors ('food hubs') need to be analysed as hybrids between the two systems. In theory local hubs as hybrids have the potential to capture many of the advantages of both alternative direct marketing and the mainstream, large-scale distribution system, while minimizing the disadvantages of each (Table 1). A brief review of the literature on the theory and practice of local hubs shows how complex the situation can be.

2.1. Local food hubs theory

'Mainstream' and 'alternative' are widely used in the literature to describe contrasts in food systems, both in referring to the goals, motivations and values of those involved, and the economic, organizational and physical structures involved (Murdoch and Miele, 1999). Murdoch and Miele defined mainstream and alternative as 'zones' of production: 'standardized, specialized production processes responding to economic standards of efficiency and competitiveness on the one hand; localized, specialized production processes attempting to trade on the basis of environmental, nutritional, or health qualities on the other' (1999).

Karl Polanyi's analysis of the dominant market system has been widely used in social analysis of the food system (e.g. Friedmann, 2000; Izumi et al., 2010b), and is helpful in analysing local food hubs.² For the mainstream system to function, human behaviour needs to be motivated primarily by profit maximization signalled by prices, and not by criteria linked to other characteristics of land and labour, hidden behind the commodity-fiction. Polanyi's historical analysis led him to the idea that the mainstream market system engenders a social counter-movement (Polanyi, 2001 [1944]). Based primarily on Polanyi's broad theoretical framework, we define alternative food systems as this counter-movement, to the extent decision-making by actors in the system is based on prioritizing social and environmental goals over the

¹ There is a dearth of accurate data on 'local' food distribution, in part because 'local' is usually defined so broadly and/or ambiguously. The USDA data probably underestimate the extent of local distribution (Cleveland et al., 2011). Low and Vogel present data on extent of 'local' sales, but include sales to 'regional distributors' which are undefined (2011).

² Polanyi criticizes the idea of a self-regulating market, pointing at its weak theoretical foundations on the one hand (such as the 'commodity-fiction' of labour and land), and the ensuing dramatic social consequences of dismantling protective regulation mechanisms on the other hand. According to Polanyi, 'normally, the economic order is merely a function of the social order', meaning that the economy is embedded in social ties, and that 'to allow the market mechanism to be sole director of the fate of human beings and their natural environment ... would result in the demolition of society' (Polanyi, 2001 [1944]: 74).

Table 1

Local food hubs as hybrids between direct marketing and large-scale regional or global hubs. Some hypothetical comparisons based on a review of the literature.

Variable	Distribution method		
	Alternative, local direct marketing ^a	Hybrid local hubs	Mainstream, large-scale regional or global hubs
Major goals	Social & environmental sustainability	Hybrid	Economic profit
Sales volume per entity	Lowest	Intermediate	Highest
Food miles	Low	Intermediate	Highest
Time between harvest and eating	Lowest	Intermediate	Highest
Flexibility of packing & grading standards	Highest	Intermediate	Lowest
Gross price per unit received by farmer	Highest	Intermediate	Lowest
Net price per unit received by farmer (profit)	Intermediate	Highest	Lowest
Price stability	Intermediate	Highest	Lowest
Information flow between eater and farmer	Highest	Intermediate	Lowest
Internalization of negative externalities	High	High	Lowest

^a That segment of local direct marketing that has alternative goals; does not include long distance 'direct marketing', for example via internet orders.

economic goal of material profit,³ i.e. 're-embedding the economy within social networks' (Seyfang, 2006). The extent to which this process involves adopting mainstream economic, organizational and physical structures, and how this in turn affects the goals, will result in various degrees of hybridity.

Therefore, a key challenge in moving toward alternative food systems is understanding the relationship between economic, organizational and physical scale, and the goals of the food system. While research has shown that there is not a necessary causal relationship between some aspects of scale, for example food miles, and some of the goals for alternative food systems (Born and Purcell, 2006; Edwards-Jones et al., 2008; Weber and Matthews, 2008), there is can be a great deal of flexibility in these relationships.

On the one hand, local food hubs can be a way of increasing sales of 'local' food to eaters via the mainstream food system in response to increasing public interest in 'buying local'. For example, the USDA has created the 'Regional Food Hub Subcommittee' responsible for conducting research on hubs and identifying policy measures to support them, using a working definition of a hub that emphasizes scale over goals: 'A centrally located facility with a business management structure facilitating the aggregation, storage, processing, distribution, and/or marketing of locally/regionally produced food products' (Barham, 2011). These efforts often begin at the large-scale end of the continuum and attempt to scale down. Many large, mainstream hubs are scaling down some parts of their procurement and distribution seeking a share in emerging local markets, with economic profit their main goal.

This approach to localization is likely to continue emphasizing the mainstream economic goals of the distributors, even when alternative goals are explicitly stated, as Bloom and Hinrichs found in Pennsylvania (Bloom and Hinrichs, 2011). This is common for large-scale mainstream distributors whose goal is short-term profit maximization achieved via scaling down some aspects of the mainstream food system, most commonly food miles. For example, the Sysco Corporation, one of the world's largest food distribution companies, is partnering with The National Good Food Network (NGFN) to promote 'local' food, motivated by its loss of market share, and one of its major activities has been a 'local' branding effort to tap into consumer demand for the 'romance, memory, and trust' connected with local foods (Cantrell, 2010). Mainstream retailers like Walmart have moved aggressively toward sourcing local food as a 'hot market place trend' in response to increasing consumer interest (Walmart, 2012).

On the other hand, local food hubs have been promoted as a way of achieving alternative goals for food systems. These efforts often begin at the small-scale end of the continuum and attempt to scale up. The biggest challenge that local food hubs face is to be economically viable in the midst of the dominant mainstream system which is structured to support the large-scale, global distribution network, while at the same time achieving the larger social, nutritional and environmental goals of alternative food systems (Table 1). This requires an economic, organizational and physical scale that facilitates the connection between (1) local institutions accustomed to working with one or a few large suppliers sourcing produce nationally or globally, who want to increase the proportion of local food they serve for a range of economic, social, nutritional and environmental reasons, and (2) farmers, often small-scale local farmers, used to direct marketing or selling to larger-scale distributors, who want to increase the proportion of food they sell locally for a range of other goals, including increased profits.

Personal relations based on trust are a characteristic of direct marketing that can be important to maintain for the success of scaling up. These non-economically based relations which local hubs can foster among farmers, institutional buyers and eaters, can increase their economic competitiveness compared with large-scale distributors who do not have these relationships, but whose strength is economies of scale. The trust engendered by 'long-term, regular, and consistent contact' can be an 'essential catalyst enabling passive information to be transformed into useable knowledge' (Fisher, 2013). The USDA found that even for hubs created by entrepreneurs (40% of 45 hubs surveyed), the sole focus was not profit—they were 'socially driven business enterprises with a strong emphasis on 'good prices' for producers and 'good food' for consumers' (Barham, 2011).

2.2. Local food hubs in practice

Local food hubs in practice are often hybrids of goals and scales, which can lead to complementarity or synergy, but can also result in misunderstanding and conflict (Table 1). A number of studies have shown how larger scales are often accompanied by mainstream goals, as a result of scaling down from large-scale mainstream systems, or in scaling up from small-scale alternative systems. A study in Toronto found that the FPC and a local NGO were able to facilitate a connection between a large institutional buyer (University of Toronto) that wanted more sustainable food and ARAMARK, one of the largest global food service corporations (Friedmann, 2007). However, in scaling down, ARAMARK displayed a 'highly selective translation of environmental and health demands of social movements into consumer preferences, showing no real attention to the agricultural end of the supply chain'.

³ Connelly et al. note that while social and environmental goals can be in conflict, they meet in their key challenge of the tension between "values-based commitment to structural change and incremental implementation" (Connelly et al., 2011).

Similarly, a study of three farm-to-school programs in Pennsylvania found that the involvement of mainstream distributors resulted in dominance of the profit goal, undermined the alternative goal of supporting local farmers (Bloom and Hinrichs, 2011).

Scaling up is often seen as means of achieving alternative goals, as well as economic viability, but can also lead to compromising alternative goals. A local food hub created by community members in Stroud, UK, found that there was a conflict between spatial scale, originally set at 15 miles for sourcing food, and the social aims of improving nutrition in a low income community (because of lack of variety and of type of preferred foods), and economic viability (the lack of interest by target eaters limited sales by producers) (Franklin et al., 2011). The result was that to increase purchases from local farmers they targeted also 'greenies', and to increase sales to target audience they eased the spatial boundaries to include a wider variety of foods, yet the impact on the low income community remained limited.

Another example of scaling up is Veritable Vegetable, started as a local hub in the San Francisco Bay Area in 1974, and the oldest organic produce distributor in the US (Jolly and Kenfield, 2008). While remaining committed to social justice and building trust relationships with farmers and buyers, Veritable has scaled up in terms of food miles and farm size; while most produce is still purchased within California, they also 'source out of state and foreign produce as well', and emphasize availability, for example, 'with Mexican supply in reserve to meet demand as needed' (<http://www.veritablevegetable.com/>). The small-scale farmers they had been purchasing from felt betrayed when Veritable began purchasing from the big growers. However, the purchasing manager explained that 'they only have produce twice a week, and we need it every day for our customers', and that 'it's difficult not to pursue growth in this area ... We really feel that values are far more important than size', and does not see any reason why a 'gigantic business' cannot be committed to social justice and environmental stewardship' (Jolly and Kenfield, 2008).

However, scaling up alternative distribution systems can also result in positive synergies. This can be facilitated when the organization is non-profit, as with the Stop Community Food Centre in Toronto, a food bank transformed into a successful non-profit local food hub, emphasizing alternative social and environmental goals (Levkoe and Wakefield, 2011). Alternative social relationships can also increase economic viability of for-profit organizations, as found in a study of four regional distributors involved in farm-to-school programs. They also had support of local farmers as an important goal, and considered their long-term relationships with them as their main asset in filling the niche of farm-to-school programs. The study's authors concluded that 'the fact that relationships between regionally-based distributors and farmers are in part instrumental does not undermine their social dimension' (Izumi et al., 2010b). Similarly, a study of seven farm-to-school food programs in Michigan found that school food service professionals procured local produce for a combination of economic, environmental and social reasons that supported each other, for example, helping local farmers economically also moved more fresh local food to the schools (Izumi et al., 2010a).

This has also been the case for Eostre Organics in the UK, initiated by local activists who helped farmers establish the cooperative. Through its cooperative structure and its mission statement, Eostre Organics clearly positioned itself outside of a mainstream business model focused on profit margins: its explicit aims included 'supplying consumers of all incomes high-quality seasonal produce, to encourage cooperative working, to offer educational farm visits.' (Seyfang, 2006). It achieved the scale required to penetrate local markets and be commercially successful, and this allowed it to carry out education and outreach which in turn

resulted in 'nurturing the ethics of ecological citizenship and then providing a means for their expression' (Seyfang, 2006).

3. Methods

The research on which this article is based was part of an undergraduate-graduate research seminar. The instructor of that seminar, and first author of this paper, had established a working relationship with all of the people interviewed for the research reported here, during prior projects and teaching.

We collected the data for this case study through research in the published and grey literature, and through informal discussions and in-depth interviews in 2010, 2011 and 2012 with the key actors: five 1–2 h interviews with the owner/manager and co-manager of the local hub, and three 1–2 h interviews with RDS managers, in addition to many informal conversations with all of them. We also gave them drafts of this article to comment on. In mid 2012, we selected six farmers in southern SBC, two of whom had been selling a significant amount to FDP, two who had been selling a minimum amount, and two who had not sold to FDP, but which were similar in size and the type of produce grown to farms that did sell to FDP. The four farms that sold to FDP were selected from a list that FDP provided of farmers who sold to them during 2010–11; two had a small percentage (<1%) of sales to FDP, while the other two sold between 2 and 5% to FDP annually. The two farms that had not sold to FDP were suggested by FDP as farms similar to the ones they bought from. We formally interviewed in-depth five primary farmer managers and one marketing manager of six farms in southern SBC about their produce marketing using a survey form; these interviews took 1–2 h each. The interviewees were told about the research and the role of their interviews in the research. We recorded all interviews and used recordings as the source of quotations with permission of the interviewees. The reference period for the case study is through mid-2010. We analysed all of these data by extracting information related to the key themes identified in the literature review.

4. Farmer Direct Produce LLC

The concept for a local food hub that resulted in the creation of FDP developed through the confluence of growing interest by RDS in purchasing produce locally to supply the campus dining commons, and by farmers' and Santa Barbara Certified Farmers Market (SBCFM) managers and vendors in selling larger volumes of produce locally. In response to the interest by RDS, Wesley Sleight, soon joined by Anna Breau, both with long-term experience working at farmers markets and with farmers, began working on a pilot program with RDS. The story of FDP is one of a struggle to meet non-economic social and environmental goals, while also becoming economically viable, which involved an iterative process of establishing new ways of interacting with RDS and other buyers, and with farmers. By the end of 2010 it was a successful and growing local food hub based about two miles from the UCSB campus, buying from about 50 farmers and selling to about 20 local institutions, restaurants and stores, while RDS remained its largest customer. In this section we describe the process from the viewpoint of FDP, and in the following section from the viewpoint of RDS.

4.1. Motivations and goals for local produce distribution

According to Anna and Wesley, the most important goals for starting a local food hub were social and environmental. They have kept FDP focused on the health of people, the environment, and the local economy, and on supporting SBC's cultural heritage, and

especially on helping improve local nutrition by supplying local produce to local hospitals and businesses, and especially schools. For them this meant working to minimize time from field to plate, and provide produce at its peak ripeness, which yields the most nutritional value (MacMillan and Fredenburgh, 2009); FDP delivers most orders within 48 h of harvest. Most produce is stored over night in their 600 square foot cooler and delivered the following morning. Avocados, potatoes, apples and citrus arrive in weekly deliveries. These are the only goods kept in the cooler more than 24 h and used to fill orders throughout the week.

They told us that their biggest rewards came from their direct interaction with students, for example delivering produce to an elementary school which required them to walk through the cafeteria where students were excited to see the food they would be eating being brought to the kitchen, or talking with students while doing displays of local farmers' produce in the RDS dining commons. As Anna said, 'The main motivation for starting [FDP] was to get local food to the children, whether it's at the university or smaller schools ... it's just to provide good nutrition'.

For the health of the environment FDP has worked to minimize packaging, transport, and fuel use, and has prioritized buying from farmers who use beneficial insects and cover cropping with minimal chemical inputs, and supporting small farms that promote open space around densely populated areas, especially in southern SBC. Most of the farms they buy from are within a 50 mile radius of the FDP warehouse. Anna and Wesley believe that by providing more income to SBC small-scale farmers they are supporting the cultural heritage of the county, including farms some of which have 'been growing produce for over 100 years as the local community grew up around them'. The business plan is to use the bounty of the area, support the people and practices that FDP believes in, and 'bring good food to good places'.

On numerous occasions during the five extended interviews, and many additional casual conversations, Wesley and Anna described the value they received from doing something good for the community as the primary goal of their work, taking precedence over profits. They were willing to live very simply, especially during the first years of operation when FDP made little profit, only needing enough money to meet basic expenses. Wesley said, 'When I'd be hustling and getting injured by just moving so much stuff all day and all night, I figured at least I'm moving a lot of good food to good places, and it was like a community service project. I wasn't too worried about it as long as I could pay my rent and eat some food'.

4.2. Establishing a relationship with RDS

At first RDS only ordered from FDP occasionally because they were not able to fill the very large orders RDS was accustomed to making with large distributors. FDP participated in an RDS pilot project started in 2006 in one of the Dining Halls, where a section of the salad bar was slated to have sustainably grown selections.

Becoming more established in the world of institutional purchasing came with new expectations, larger orders, and competition with other distributors and indirectly with large-scale industrial agriculture. A major issue for developing the RDS-FDP relationship was insurance. Because UCSB required a \$1 million insurance policy for all vendors that deliver on campus, FDP was restructured into a limited liability company FDP, LLC, in September 2007 and acquired the needed insurance.

UCSB RDS has been the most important client in terms of volume and consistency of orders since 2007, placing orders almost every day. A period of steady growth for FDP began in 2008; annual sales doubled in 2009, and again in 2010, with RDS being their major customer. In winter 2010, RDS introduced a new initiative

with six core items (broccoli, cauliflower, oranges, sprouts, legumes, and apples) that would be local and certified organic or sustainably produced, making planning and ordering easier for the dining commons managers to place orders. It also made it easier for FDP, because RDS was able to provide them with a yearly and weekly estimate of their orders, allowing FDP to plan ahead and coordinate with farmers. And as farmers became more consistent with filling FDP orders, it helped solidify the demand of RDS and other local institutions.

4.3. Establishing relations with farmers

An essential component of early FDP success was the pre-existing relationships between its founders and local farmers. Before starting FDP both Wesley and Anna worked at the Santa Barbara Certified Farmers Markets. Thus they knew that many local farmers were interested in increasing the volume and stability of their sales, a goal they felt could be met by working with a local hub.

The practices of different farmers are well known in the Farmers Market community, and as Wesley and Anna established connections within the market, they developed a list of farmers whose practices they liked, including consistency and quality, which they valued highly because of early difficulties with filling orders. Some of these farmers now work exclusively with FDP because of the rapport developed over the past years. They chose not to work with farms that sold imported produce at certified farmers markets or used excessive chemical inputs. 'We knew all the questionable ones, and we knew the ones who had really solid integrity to them. We tried to choose farmers with good integrity, quality product, and consistent supply'. In 2010, about half of the 50 farmers FDP worked with were located in SBC, and most farms were between 5 and 50 acres. The smallest farm was a sprout 'farm', under one quarter acre, and the largest was almost 200 acres with fields in ten different locations in SBC.

FDP addresses the risks faced by small-scale farmers through their business practices. By working with many different institutional buyers in southern SBC, they spread demand over a large and diverse base. FDP works with farmers based on their prices, the quality of the produce, and 'whether or not there's bounty to share'—that is, farmers don't compete directly for involvement with FDP, and FDP does not switch orders or drop farmers if they find out they can get a lower price elsewhere. This reduces inter-farm competition, and aligns participants along quality expectations associated with wholesale purchasers, which are more stringent than those in direct marketing.

The unofficial contracts between FDP and farmers are built on trust from past experience together, and it is their belief that these strong relationships are the most valuable part of their business. Communication is essential to local hub success, and FDP functions as a channel for information flow between institutional buyers and local farmers, creating a flexible price list that balances buyer and seller price preferences. Farms are contacted daily to verify their available produce and ability to fill orders. A price sheet is updated weekly based on institutional demand and produce prices set by the farmers. FDP allows farmers to set their own prices and provides farmers a source of information on the local demand for their produce and the amounts that clients are willing to pay. Farmers can then use that information when they tell FDP what prices they want, but are not required to. If the prices set by the farmers are above what FDP can sell to buyers after their mark up, they will not buy their produce.

FDP is operating for profit, but the security of farmer and institutional relations is far more important than lowering prices paid to farmers or larger mark-ups to purchasers. 'We've started to

break down the numbers a little bit more just to increase the health of the business ... As soon as we do something to cut costs or something like that, to try to build up our profit margin, I think that would end up affecting the integrity that our business represents. We'd probably end up losing business because of it, it's that whole [idea of] operating a business from a standpoint of integrity'.

Many small farms are not organized for marketing and distribution, so FDP helped them grow and organize this aspect of their operations. Farmers who were not well organized were dropped by FDP, but have the option of working with them again if they become more consistent. FDP told farmers who have too little produce to fill orders that they have the option of participation if their harvests increase: 'If you guys want us to list anything you email us, basically we're approachable.' The quality of produce delivered by FDP has been strongly linked to the quality of communication between farmers and FDP. Some smaller farms were not used to wholesaling, which includes answering phone calls and filling orders quickly, or having the exact amount they agreed to supply available. At first, FDP was often forced to find alternative suppliers *in extremis*, or to not fill the university's order.

Another problem was that produce quality was variable, for instance oranges were sometimes not uniform in size, and packaged haphazardly. The appearance of some of the produce was unacceptable which increased the time needed by RDS staff for culling. As orders increased in size, farmers realized that selling to FDP could provide significant income, and they became motivated to spend the time required to increase consistency and quality. Anna called farms 'every week asking, what is your bounty for the week?'. This allows farmers to sell surplus produce when FDP could link them with a buyer. In some cases FDP has connected institutional buyers directly with farmers if they think this would be more efficient. For example, linking schools needing only a limited variety of fruit directly with the farmer closest to them. This cuts down on travelling expense and is evidence of FDP's interest in the health of the local food system, not just profit.

Farmers learned that it is important to package produce more carefully to ensure the physical appearance and quality desired by RDS, and to have the exact amount ordered by FDP ready for pick-up at the agreed upon time. As consistency and quality increased, the satisfaction of institutional customers increased, initiating a positive feedback loop. In 2010 a number of farms began planting more of certain crops, like carrots, in response to growth in demand. As the hub grew, one of its goals was to ensure consistent, large volume orders with produce from many farmers, which gave farmers the financial security to lease and plant more land.

Ordering and deliveries have been based on fluid and transparent communication with farmers. Orders are usually received from customers by 10 a.m., and FDP then begins contacting farmers who will pick during the day to fill the orders. Some of the larger orders require multiple farmers to fill, but the aggregation process became more efficient with experience. Most produce was picked up in the afternoon by FDP, with a minority delivered to the warehouse by farmers. The second most important method of getting produce to the warehouse has been picking up at farmers markets, where FDP could gather many orders at once. This also allows them to assess produce types, availability and quality for orders later in the week.

5. UCSB's Residential Dining Services

The University of California, Santa Barbara (UCSB) Residential Dining Service (RDS) is the largest purchaser of wholesale produce in SBC, serving ~4600 mostly first-year students ~10,000 meals per day, which was ~2.2 million meals for 2009 July 1–2010 June 30 (Crouse, 2010). There has been increasing interest in

'sustainability' at the UC system wide level and the UCSB campus, as well as by UCSB students and RDS staff. 'Local' has emerged as one indicator of sustainable, but it has been a challenge for RDS to acquire the quantity and quality of produce and other food needed. The quest for sustainable local produce by RDS, led by Bonnie Crouse, the Assistant Director, and Terry Thomas, the Systems Coordinator, involved working with the emerging local food hub that eventually became FDP.

Key factors in the support by RDS for the creation of FDP was student activism both directly, which justified a change in terms of students eating in the dining commons, and indirectly in terms of their pressure on UCOP (University of California, Office of the President), which helped spur the creation of sustainability goals for UC and UCSB food systems. These developments gave the RDS staff the opportunity to enact their personal commitment to creating alternatives to the mainstream food system, which was facilitated by not contracting with a food service corporation, as is the case with most institutional dining services.

When FDP and RDS began working together in 2006 there was a limited budget, which restricted the breadth of the project and goals. After RDS established its own sustainable food goals, they were able to implement quotas and increase the budget for local, sustainable and organic produce, leading to more purchases from FDP. The success of this relationship owes much to the high commitment of the people on both sides. Bonnie Crouse and Terry Thomas remained committed to sourcing local, sustainable food, and to finding solutions to problems of working with FDP. As a public institution committed to social and environmental goals, UCSB's RDS was motivated to go beyond economic criteria in establishing relations with FDP. The success of the relationship was also due to the policy changes at UCSB and a commitment to these changes by RDS staff.

RDS cultivated an unorthodox business relationship with FDP: flexible deadlines, personal relations, and an understanding of the constraints of farmers. This unconventional business relationship has been essential for the success of RDS in increasing the sustainability of their produce purchases. Procuring local produce for its dining commons was also a new experience for RDS, and they were therefore willing to work through logistical difficulties to achieve their goals for sustainability. This meant that as a young and growing business FDP was able to make mistakes without the fear of losing RDS as a client.

5.1. Motivations, goals and policy changes for purchasing local produce

In fall 2004 and in winter 2005, a small number of undergraduates created Education for Sustainable Living Program (ESL) classes on the topic of sustainable food (with the first author as faculty advisor), and how to get more of it into the UCSB dining commons. The students presented their research findings at public meetings on and off campus, and lobbied RDS staff, with the goal of increasing purchase of organic, local food, which they assumed to be more 'sustainable'. RDS told the students they needed to formally request a change of food policy from UCOP because 'that's where the change has to start'. At the same time RDS began exploring the idea of how to purchase more local and sustainable foods.

Crouse felt that it was time to think 'outside the box' of traditional purchasing infrastructure and research possible ways to purchase more organic products from local farmers without compromising financial goals: 'It was a personal thing of wanting to purchase more organic items ... for myself ... [because of] all the pesticides and environmental issues'. According to Crouse, 'there is something about working with the community, it was the first time

we stepped out of our bubble here at the campus and really got out', and supporting local farmers was 'a universal thing within our department'. Even though their main produce supplier was based in SBC, it was a large regional distributor with which they had 'a very business like relationship, so working with the local farmers, we're part of their community, and they're part of our community'. In addition, 'you can really tell the difference when something is picked 24 h before you put it out there ... you can get this high quality produce that you know where its coming from and how they're working the fields at a similar price, and that was the surprising thing, because we were always under the premise we can't afford it'.

The work at UCSB supported and was supported by efforts at the University of California level, with UCOP first formalizing sustainability criteria in 2003, although these do not appear to have included food as a topic until 2006. In 2007, and 2008 they stated their intention to add food as an additional policy area, and in 2008, UCOP formed a Sustainable Foodservices Working Group comprised of campus food service representatives. As members of this group Crouse and Thomas presented the information they had found and the goals they had set for UCSB to guide the committee toward policies that would be feasible for other UC campuses. One year later, in September 2009, a policy for food was formally added, with the intention that 'Campuses are to develop sustainable food service goals and complete feasibility studies' (UCOP, 2010). It included the goal that by 2020 at least 20% of all food purchased for campus food services is to be 'designated as "sustainable", as defined by the Sustainable Foodservices Working Group, based on third-party certifications for organic, locally-grown and other sustainability criteria' (UCOP, 2010), with 'local' defined as from within 500 miles (UCOP, 2009).

There was also increasing interest in sustainability across the UCSB campus, and in 2005 RDS participated in a campus wide planning effort, *Moving UCSB Towards Sustainability*, which resulted in part in creation of the Campus-wide Sustainability Change Agents, including a Food Team (UCSBS, 2007). The team developed a mission statement emphasizing a long-term goal of expanding local, organic produce to 25–50% of RDS purchases (UCSBS, 2006). In support of these goals, Willie Brown, the Executive Director of Housing and Dining Services, increased the RDS food budget specifically to increase purchases of sustainable and organic produce.

The main challenge was finding a supplier that could meet both RDS's goals for sustainability on one hand, and the requirements dictated by the current physical infrastructure, budget, and regulations at the University, state and federal levels. Crouse and Thomas talked to UCSC, regional distributors, and local farmers about where the produce was coming from. When they discovered that a lot of it was grown in SBC, they realized it was feasible to define local as within a 150 mile radius. Crouse recalls, 'We wanted local and we wanted sustainable ... that was our goal and a way to go toward certified organic eventually'. Based on what was available and what was feasible for them, they concluded that sustainable would be defined as never having been sprayed with pesticides. A major challenge for their definitions of sustainable was lack of an auditing system to verify them, so adherence to the standards was based on trust. UCSB RDS committed to sourcing 20% of all produce locally by 2020, to increase the purchase of organic and local produce to 25% by year 2012 and 50% by year 2015 (Crouse, 2010).

5.2. Establishing a relationship with FDP

With the new guidelines in place, RDS first explored sourcing directly from local farmers, and discovered that information about them was difficult to find. Thomas and Crouse recalled, 'We were

trying to figure out how to support local farmers ... it was hard to acquire information on local farms, farm size, [and capability]'. Both Thomas and Crouse remained committed to their goals of sustainable and local produce, and began to look at other local food procurement models for answers.

At the same time, local produce farmers and farmers market sales people were becoming increasingly interested in selling more produce to RDS as they realized the volume limits of direct marketing. Later in 2005, the Santa Barbara Certified Farmers Market manager along with a local farmer, approached Crouse and Thomas to see if the RDS could begin purchasing more local produce from the Farmers Market. After several meetings, both parties agreed that there was not the proper system or infrastructure in place that would make the relationship successful. This highlighted a main challenge for RDS; their current system of purchasing did not support ordering from multiple small vendors, in this case local farmers. University regulations required that contracts for dining commons' produce above a certain dollar amount must be put out for open bid, and accepting the lowest bid that meets the requirements of the University. Crouse and Thomas were unsure how local produce could fit into their ordering system, how to rewrite bid requirements or how individual farmers could participate in the bidding and contract process. Another main challenge was their perception that local produce was often more expensive than produce purchased from large distributors, and beyond the RDS budget.

In 2006, Crouse and Thomas launched a pilot program in one of the RDS dining commons, working with the Growers Collaborative (based in Ventura County) through the Community Alliance with Family Farmers (CAFF), aimed at creating a completely sustainable salad bar at one of the four RDS dining commons. However, there were problems because of the higher prices (two to three times what they had been paying), which they could not negotiate due to the low volume of their orders, and the limited selection of produce available.

Crouse and Thomas needed a distributor that could provide a diversity of sustainable produce at a reasonable price. So while they continued to order from Grower's Collaborative, they began placing orders with Albert's Organics, one of the largest distributors of organically grown produce in the United States, which also delivers to Canada. Although this larger company proved to be more consistent and offer a wider array of organic produce, the produce was not local but imported from all over the world, and there were issues with dependability. Subsequently RDS attempted to work with many different sources to procure local and organic produce, but continued to confront issues such as turnover in managers, produce that was not local, high prices, delivery scheduling problems, and a lack of infrastructure for delivering to RDS. A few local farmers had the volume and produce that RDS desired, but were not willing to undergo the bid process or sign a formal contract.

For ideas on how to work with local farmers they investigated UC Santa Cruz's Farm-to-College Project, a collaborative group of students, staff, faculty, and community, including a consortium of local farmers, that had established a successful system of local distribution and community education, and generated tremendous support in the UCSC and larger Santa Cruz community. Crouse and Thomas were impressed by the system, and wondered how they could do the same in SBC. A key component of UCSC's success was sourcing produce from a relatively large number of local organic farmers. Crouse recalls, 'we needed someone to organize the farmers in Santa Barbara, because [the University] could not do it'; 'We wanted local, but not conventional. We wanted certified organic, but there are few farms that are certified organic [that could deliver the volume we needed]. We also wanted sustainable

produce, which is hard to define, so we decided 'sustainable' would mean that it had not been sprayed [with pesticides]'.

Meanwhile, as described above, Wesley and Anna were trying to figure out how they could deliver produce to RDS, and began in 2006 by supplying sustainable produce for the salad bar pilot project. This arrangement proved more successful than any of the others RDS had tried, and by 2007 RDS was placing regular orders with FDP. Initially, managers of dining commons were reluctant to work with this new distributor because of the extra work involved. Also, some of the initial orders were not properly filled, which frustrated dining commons managers. Once this difficulty was overcome, managers grew more enthusiastic as fresh, high-quality produce enhanced their dining program. In addition, according to Bonnie and Terry, Wesley and Anna were trustworthy, flexible and went out of their way to accommodate the multiple requirements of the dining commons ordering and receiving systems. They had good business sense and a valuable connection to local farmers that gave RDS managers and administrators a closer relationship to where their produce was coming from and to the community outside campus.

Jill Horst became Director of RDS in 2009. She shared the environmental and social goals of Crouse and Thomas and worked with them to create weekly quotas for sustainable and organic produce for each of the dining commons, which require the manager in each of the four dining commons to order approximately 25% sustainable and/or organic produce. Therefore, managers had to take the extra time to order sustainable produce from FDP. Overall, the quotas helped to increase the commitment of the dining commons managers to the sustainability goals. RDS had a \$5 million food budget for 2009–2010, 22% of which was spent on produce. As they began to build a relationship with FDP, managers began to understand and accept the opportunities as well as the limitations of sourcing produce locally. As Anna said, 'Now when we don't have cauliflower, I can give them a real reason, like it was raining and it is too dirty to harvest'.

RDS also has to consider the goals of the students who eat in the dining commons, since meals in the dining commons are itemized on students' bills. RDS was concerned that students might not value local, organic, sustainable produce, and therefore not approve of the increase in the food portion of their bills. For example, some students complained when smaller, local apples replaced the larger ones they were used to, even though the local ones had more flavour, and students could eat as many as they wanted. Thomas and Crouse said that student groups educating and informing fellow students in the dining commons made a positive impact on student attitudes. RDS also enlisted the help of FDP, and they tabled in the dining commons, distributing samples and talking with students.

The challenge of verifying sustainability standards was made much easier by the personal relationships between RDS and FDP, and between FDP and the farmers they purchased from. By June 2010, RDS procured more than 790,000 pounds, or 61% of *all* produce within a 150 miles radius (already surpassing the UC sustainable food policy goal of 20% by 2020), including 27% from within SBC, and 26% pesticide free or certified organic. By 2010 all four dining commons were serving local, organic, and sustainable food, and FDP was providing UCSB with over 100,000 pounds of produce a year.

By the end of 2010, the FDP–RDS relationship was facing new challenges as a result of their success. Because the amount RDS was purchasing from FDP was getting close to the limit for purchasing without an openly-bid contract, their working arrangement would have to be formalized. The challenge for RDS was how to put into writing their criteria for local, sustainable produce, and for FDP, how to be able to document conformance

with those criteria, both by the hub itself and the farmers it buys from. With the anticipated increase in sales to RDS, as well as to other buyers, FDP was also coming face to face with the question of what 'local' means, and the challenge of increasing economic size in a system dominated by mainstream values, while maintaining their priorities in social and environmental sustainability. In addition, increasing their sales volume to FDP is also seen by some farmers as needed to increase the economic viability of their becoming more local.

6. Farmers' perspectives

Since 2006, SBC small-scale farmers can evaluate the merits of selling produce to FDP along with a wide range of other outlets, including medium size regional hubs like Veritable Vegetable, and large multinational corporations like Sysco's FreshPoint. They also direct market to local grocery stores and restaurants and through farmers markets, farm stands, CSAs and U-pick operations. In this section we focus on the reasons farmers do or do not sell produce to FDP in order to understand their motivations to participate in local food hubs. We interviewed the primary farmers or marketing managers of six farms in southern SBC, with farms of 3–180 acres; five were certified organic and one used 'organic practices' but was not formally certified.

Despite barriers and disadvantages, farmers do chose to participate in local hubs to some extent even when it means not maximizing their profits in order to achieve their social goals of selling their food locally. Farmers value the personal relationship they have with the FDP owners. While profit is usually the foremost criterion, personal and philosophical motives are also important when choosing sales outlets, and some farmers feel that participating in local food hubs is the 'right thing to do' in order to support their local food system. However, as FDP, RDS and the farmers have become more efficient in working with each other, there have also been increased savings and profits. For example, one of the possibilities that is being explored is FDP coordinating with farmers to grow the specific crops RDS uses in the amounts required, which would reduce waste and uncertainty for all participants.

6.1. Motivations for selling to FDP

One of the two main themes that surfaced when we asked farmers about the advantages of selling to FDP was personal relationships. Farm A is a larger local farm established in SBC in 1980 and has 170 acres in production, selling the majority of their produce to two outlets, farmer's markets (30%) and organic wholesalers (70%), filling in any seasonal gaps in sales by selling to FDP (less than 1% on average). In comparing FDP with other outlets, they said they 'appreciate their local sensibilities ... ; [the owners] are good friends of ours', 'The biggest advantages are freshness and developing a relationship with your close people'. Similarly, the owner of farm B (75 acres) currently sells less than 1% of his produce to FDP. He decided to do business with the hub because he was good friends with the owners, liked their business model, their clean packing shed, and that they always paid on time. The owner of farm B defines sustainable agriculture as the 'conscious effort to balance ecology, profit, and community in a food production system', paying tribute to the delicateness of balancing social and environmental goals with an economic bottom defined by the mainstream.

Farm C is a three-year-old small-scale farm with three acres in production, and does the majority of its sales through local farmers markets and a CSA, but also sells some to local wholesalers, including 5% of its produce to FDP several times per week. The farmer cited the good nature of FDP owners as part of his initial

motivation to sell to the hub, and believes that FDP's bridging of the 'gap between farmers and consumers' has the most potential for increasing sales.

Farm D is a small-scale (40 acres) urban farm located in the midst of a predominantly residential area. The owner sells the majority of the farm's produce from two on-property farm stands, with the next two biggest sale outlets being local farmers markets and stores. He currently sells only 2–3% to FDP, and, like other farmers, cites the trustworthiness and personal relationship of FDP owners and operators as motivation for beginning to sell to FDP: 'I knew that they could be trusted ... they are easy to deal with. It is just easy'. He also stated that he can reach the personal goals he has for his farm, citing the personal satisfaction he gains from selling locally.

The other main theme regarding the benefit of selling to FDP was reliability and flexibility. Farm A said that FDP knows how to work with the local farms and understands farmers' needs, providing farm A with a unique service that their other outlets (farmers markets and organic wholesalers) cannot provide. This includes, for example, being able to make large orders of items that restaurants only use in small amounts (e.g. cilantro) and then delivering smaller quantities to restaurants. Another advantage of selling to FDP is that they can take very ripe, easily perishable produce, e.g. strawberries, because FDP is able to find someone that will use them right away, and sell them at a discount, turning a total loss into income.

The owner of farm D saw the advantages of selling to FDP as their reliability, their willingness to pay higher prices for better tasting produce, the proximity of the FDP warehouse, quick turn around time on orders, and the opportunity to sell in the 'really local' market. FDP's produce pickup services are a major benefit of selling to the local hub.

Farm E (26 acres) does not currently sell to FDP, but is selling to a regional food hub, Veritable Vegetable, based in San Francisco. They supply their top quality produce to Veritable Vegetable because it consistently buys in large amounts and pays higher prices. However, Veritable Vegetable often cannot buy produce when it is ready for harvest. They were eager to find out more about FDP because they would rather sell at lower prices than lose income. They believe they would benefit from FDP's last minute orders and overall flexibility, allowing them to sell a greater percentage of their annual product, and could minimize the farm's losses financially and in terms of food waste, a social and environmental goal.

Farm F (10 acres) currently only sells to regional and global wholesalers, mostly avocados. They send a crew of 12 workers which harvests the whole orchard, 50 containers, in half a day, and give him a check, after which they airfreight produce to France. The owner of farm F acknowledged that this is not sustainable and that he would prefer to sell locally, especially with FDP, because they offer a pickup service, allowing him to move produce quickly and locally with minimal fuel and time costs.

6.2. Barriers/disadvantages to selling to local food hubs

Some farmers (not among those interviewed) do not have the desire to work with FDP because the disadvantages outweigh the advantages for their business operations; other farmers have the desire to sell to a local food hub but they experience the barriers of marketing, infrastructure, and scale, and feel that in order to gain some of the advantages of selling to a local hub they have to make some concessions. Both of the farmers currently selling 2–5% of their produce to FDP said that it also entails some disadvantages. Additionally, the two farmers currently selling less than 1% and the two selling nothing to FDP said there are barriers to selling or to selling more to FDP.

The dominant themes that surfaced when we asked farmers what the major barriers or disadvantages were to selling to FDP were FDP's limited purchasing capacity compared to larger distributors, and the relatively low prices compared with direct marketing. Farm A sells to farmers markets within a radius of 100 miles and considers this local because they can get produce to these distances within less than 24 h of it being picked. Additionally, this farm makes the majority of its sales to organic wholesalers because it allows them to tap into the national demand, as well as international demand, being that they sell to Canada as well. This highlights an interesting discrepancy that suggests that farm A values participating in the local markets but due to its larger scale of production cannot restrict itself to local markets: 'With the size farm that we have at 170 acres, that is way too much [produce] to sell at just farmers markets such as they currently exist ... We usually tell people we don't sell heads of lettuce, we don't even sell boxes or layers of lettuce—we sell palettes of lettuce. And farmers markets can't handle palettes, so we sell to organic produce wholesalers.' Additionally, farm A is very concerned that the time and money they spend to be certified organic pays off. They want to collect on the price premium that comes from being certified organic, which farm A correlated with 'great quality'.

Farm B sells less than 1% of its produce to FDP and does not sell to FDP often (12 times in the last six months). They have lower profit margins when selling to FDP and the farm B owner claims to make more concessions for them. The one thing that the owner of farm B mentioned he would like to change about his relationship with FDP is to supply them with organic avocados, because he would like to move away from selling large quantities to the large mainstream avocado wholesaler. He also said that the biggest challenge to working with FDP is that some of the things he grows are not of interest to institutional purchasers like RDS that are FDP's largest customers.

The farm C farmer would like to increase sales to FDP, but said that FDP's limited number of buyer accounts was a barrier to realizing his main goal of selling larger quantities of produce locally, and that FDP's frequent last minute orders were challenging. Additionally, the farm C owner does not feel that he can sell enough locally to achieve his sales goal because of the market for local produce is saturated in SBC given the limited direct marketing opportunities, namely farmer's markets.

Farming is a several-generation tradition for the owner of farm D, who reminisced about how readily available land once was in SBC. He recalled that SBC used to be a big enough market to sell all of their produce locally; it is not so easy anymore, he claims, because the market is saturated from within but also with farms from outside of SBC travelling to sell in the area. Farm D would like to sell more produce to FDP, and said that if the demand on FDP's end were present, he would happily sell more, especially during winter, when he is growing more of the types of produce that FDP purchases. However, the current obstacle is that FDP does not buy all of the crops that farm D grows, which limits the amount that farm D can sell to them; thus, an increased demand for a larger diversity of crops from FDP would be ideal for farm D.

The foundation for farm E's business model is supplying different varieties of tomatoes year-round, making the summer months the least profitable due to increased competition. Ultimately, the farmers feel that a greater change of consciousness among consumers about the food that they consume is what they truly need for their business to succeed and to allow them to keep selling locally; otherwise they will not be able to reconcile their social and environmental goal of selling organic produce locally given the pressures of the mainstream economic system. This belief supports their interest in beginning to sell to FDP as a way to reach more consumers of local produce.

The owner of farm F said that, while he supports the concept of local hubs and understands the potential benefits they offer, profitability remains the ultimate barrier for his farm. Selling locally through FDP would not afford him the same profit margins that he currently gets selling to large avocado wholesalers. As a result, he has a value-added strategy (i.e. processing) to increase his profit margins as an alternative to his current sales to large scale distributors.

7. Discussion and conclusions

Our case study provides some answers to the question posed in the introduction: How can alternative local hubs be economically viable within a system dominated by large-scale national and global distribution networks, and therefore lacking supporting economic, organizational and physical structures of the appropriate scale, and at the same time successful in working for social and environmental goals that the mainstream doesn't value, or even works against?

First, scaling up from direct marketing as FDP did is more likely to be successful than scaling down from mainstream distribution, which can leave significant control in the hands of entities making decisions based on the mainstream goal of profit maximization, not alternative goals, as was found in the case studies in Toronto (Friedmann, 2007) and Pennsylvania (Bloom and Hinrichs, 2011). By starting small and scaling up from direct marketing, FDP was able to nurture personal relationships of trust that can stabilize prices, a characteristic of FDP valued by farmers and RDS, and also found in other studies of alternative hubs to be critical for success (e.g. Izumi et al., 2010b; Levkoe and Wakefield, 2011). This was facilitated by the fact that RDS was independently operated by UCSB, and able to prioritize alternative goals as compared with food service corporations, which manage most university dining halls, and because RDS was part of a public institution committed to social and environmental goals, staff had flexibility to go beyond economic criteria in establishing relations with FDP. Thus, by their very nature, alternative local hubs provide added value to buyers and farmers that a mainstream produce distributor cannot, helping them to be economically viable in a system dominated by large-scale, mainstream distribution networks.

Second, in scaling up economic, organizational and physical structures to become more efficient, it is important that it is done in ways that promote alternative goals. To efficiently increase the volume of local food consumption, FDP scaled up to some mainstream structures (quality standards, order volumes, and liability insurance), which increased the ability of small-scale farmers to supply institutional requirements for quantity and quality, farmers to sell large volumes of specific crops, and RDS to purchase more local produce through FDP. At the same time, in response to RDS's volume requirement for produce, FDP went beyond SBC and RDS's 150 mile 'local' definition to source produce in more distant areas of California, similar to the local food hub in Stroud, UK, which increased their 15 mile limit in order to meet the goal of improving nutrition in a low income community (Franklin et al., 2011), but did this without dropping any small-scale farmers, as did Veritable Vegetable (Jolly and Kenfield, 2008).

Third, our case study is a good example of the necessarily incremental character of change (Connelly et al., 2011). While the goals for an alternative food system are radically different than those of the mainstream, any alternative system needs to evolve out of the current situation. FDP and RDS approached their goals incrementally, beginning with supplying salad bars, and moving to aggregating purchases from a number of farms to supply RDS needs. Procuring local produce for its dining commons was a new experience for RDS, and they were therefore willing to work through

logistical difficulties to achieve their goals, by cultivating an unorthodox business relationship with FDP: flexible deadlines, personal relations, and an understanding of the constraints of farmers. This meant that as a young and growing business FDP was able to make mistakes without the fear of losing RDS as a client. To increase volume they worked to establish RDS requirements that could serve as informal guarantees for farmers willing to grow the required amounts of the specified crops. They also substituted local, seasonally available vegetables and fruits for those previously supplied globally and aseasonally. More importantly, FDP and RDS were able to incrementally increase the awareness of alternative goals among students and farmers, important for the longer term changes needed for food system transformation, as was the case for Eostre Organics (Seyfang, 2006).

Fourth, the motivation of the individuals involved to achieve the goals of alternative food systems was a critical requirement for the success of FDP. UCSB activist students, RDS staff, the hub owners, and farmers in effect rejected the commodity fiction, choosing *not* to leave 'the fate of soil and people to the market' (Polanyi, 2001 [1944]). This meant that in seeking compromises in economic, organizational and physical scale, economic criteria were embedded in social and environmental criteria. The motivations to achieve goals of alternative food systems within the mainstream structures requires what in mainstream logic would be classified as self-exploitation, but which in alternative logic could be classified as increasing personal well-being via social contribution, thus expanding the definition of personal well-being in time and space. Local food hubs such as the one described in this article can provide examples of economic goals being made subservient to social and environmental goals, and counter-examples to the idea of economic growth as the primary and sufficient source of social stability, and wealth as the primary determinant of human happiness (Jackson, 2009). There is no theoretical limit to the scale at which this is applicable; in fact, for a sustainable food system it needs ultimately to be at the global scale (Cleveland, 2014).

In conclusion, as a hybrid between local direct marketing and large-scale regional or global distribution systems, FDP was able to achieve many of the hypothetical advantages of alternative local food hubs (Table 1), illustrating that these hubs can be an important force within the food system for re-embedding economic goals within social and environmental goals (Friedmann, 2009). The overall success of FDP as an alternative has been due to finding ways of scaling up that do more to advance alternative goals than impede them, even though some compromises may be needed.

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