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What Do We Mean by "Local Foods"?

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The local food movement is arguably the most dynamic segment of the food system, contributing to the challenge to define it. Turning to a dictionary, Webster defines the term local as, "characterized by or relating to position in space: having a definite spatial form or location." In a recent U.S. Department of Agriculture (USDA), Economic Research Service (ERS) report, Low and co-authors, suggest that localness may vary by the audience, purpose and data of the food system dimension where local is applied (Low et al., 2015).

Although geography is typically one of the key factors considered in local food systems, policy and program initiatives implicate a connection to a myriad of other aspects as well. According to the 2008 Food, Conservation, and Energy Act, local foods are defined as any foods produced within a radius of 400 miles or in the state where the food was produced as local foods, but this mix of transportation, distance, and jurisdictional criteria hints to the complexity of characterizing local foods (Low et al., 2015; Martinez et al., 2010). As one example of the implications of this complexity, Martinez et al. (2010) showed evidence that geographic proximity considerations have led to some controversy as to whether State-funded branding programs, which are aimed at promoting or identifying state-produced agricultural products, are part of the local food system. More recently, the Agricultural Act of 2014 did not provide a definition of local foods, perhaps because arriving at agreement on a definition defied consensus.

In essence, local foods are perhaps the most visible sector of the continually evolving "civic agriculture" paradigm (Lyson, 2004), a lens through which political, socioeconomic and environmental concerns about the conventional food system are addressed. So, for those pursuing a fundamental concept of localized economic control, they may choose to play their advocacy role in the one realm where consumers make some of their most frequent decisions: at meal times, and in food markets. The recent USDA-ERS report on local foods integrated several "civic agriculture" dimensions, including environmental, economic competitiveness, consumer motivations for direct purchases and linkages to broader non-profit initiatives, into a scan of the local and regional food system update (Low et al., 2015).

So what other criteria—stated or simply assumed—may be underlying the term local foods in the minds of consumers, food industry stakeholders, and those seeking to support food systems that reverse the momentum of globalization to maintain food production in their home region? The growing set of consumer research and community development literature sheds some light on a broader characterization that suggests sustainable production practices, smaller businesses, more producer-oriented governance, and shorter supply chains which may all be implicit assumptions held by those supporting, investing in and consuming local foods.

Geography, Distances, and Consumer Perceptions

In historical terms, food production has always received extensive attention from geographers because so many elements of the sector are place-based in nature, including arable land, water, and appropriate climate. However, interest in how consumption varies across places is a more

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recent area of interest. As a catalyst to the discussion of how local foods may intersect with distance traveled, Pirog and his co-authors estimated that food within the conventional production, distribution and retail systems in the United States now travels an average of 1,500 to 2,500 miles (Pirog et al., 2001). This much cited estimate was a catalyst for discussion of distances in supply chains, but there is still no clear agreement about what the "correct" distance may be, and fundamentally, if local and regional designations should be driven by place-based factors, such as population density, watersheds, or seasonality.

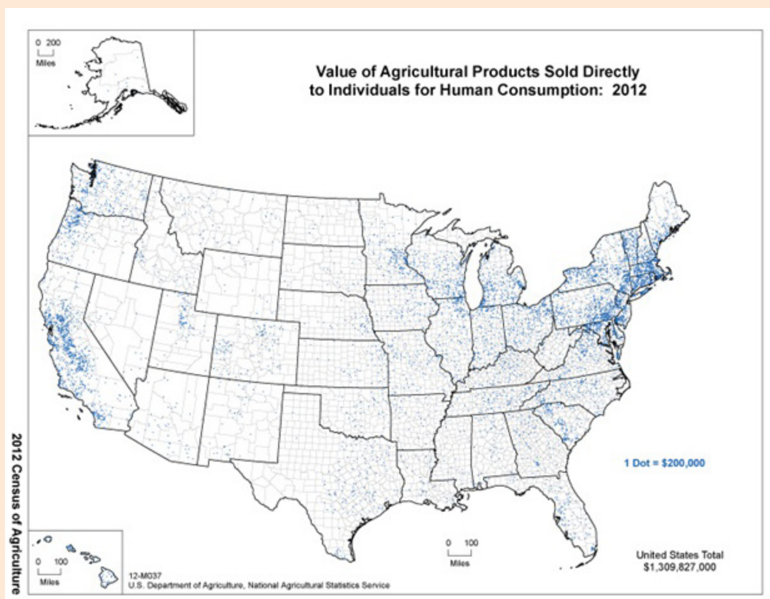
Since the term "local" does not have an official definition, researchers have asked consumers what they consider "local" or "regional, but not local" based on both physical distance and political boundaries (Onozaka, Nurse and Thilmany McFadden, 2010; Jekanowski, Williams and Schiek, 2000; Darby et al., 2008). In a 2008 national study, Onozaka, Nurse and Thilmany McFadden (2010) found over 70% of respondents considered a 50-mile radius as "local," while the 300-mile radius is more likely considered "regional" than "local" by most consumers. This is an important delineation since 300 miles is often used as a boundary for "local" by retailers as a realistic distance to procure enough volume and variety, even before the 2008 Farm Bill provided its definition. In terms of political boundaries, over 40% considered food produced within one's county as "local." In contrast, food produced within one's state was considered "regional" by the majority while only a smaller share considered it "local." It would seem that there is heterogeneity in perceptions of the "local" and "regional" differentiating qualities of foods. In later research on the same survey, Onozaka, Nurse and Thilmany McFadden (2011) found that the definition of local was influenced by the channels where consumers sourced their produce, which in turn, influenced their willingness to pay for locally labeled products as well. So, local as a label may be closely linked to the marketing channels rapidly emerging alongside conventional retail food systems in the United States.

Locally Oriented Marketing Channels

One might imagine that consumers identify the degree of "local" by types of marketing channel rather than geographic distances because of their concern about the number of "middlemen" in the supply chain. In essence, those who did not want to support or trust the corporate food system may commit their buying dollars to local producers and markets based on their perceptions of greater integrity from those producers and food producers they could visit and relate with through shorter supply chains (Nurse, Onozaka and Thilmany McFadden, 2012; Hinrichs, 2000). So, an examination of dynamics within these channels is warranted.

USDA's Agricultural Marketing Service (2013) reported the number farmers markets has grown dramatically, increasing 226% from 1996 to 2012, with over 7,800 farmers markets operating in the United States. According to the 2012 Census of Agriculture, the value of direct sales grew only slightly between 2007 and 2012 from \$1.2 to 1.3 billion, but 144,530 farms and ranches report some sales through these channels, up from 136,817 farms and ranches in 2007 (or 7% of all farms). Figure 1 shows that the intensity of this activity is not balanced across the United States, with notably higher total sales along the coasts and in the upper Midwest. Yet, some of those patterns could be correlated with higher farm activity overall, so Figure 2 shows what the average direct sales per farm was in 2012. There is still notable activity along the coasts and near major population centers, as one might expect, but perhaps the most interesting conclusion that can be drawn from these maps is how varied the focus or reliance on using local and direct markets is across farms.

Figure 1: Distribution of the Value of Direct Sales Reported by U.S. Farms and Ranches, 2012



In addition to direct sales, there are other marketing activities that can be commonly associated with local foods and entrepreneurial activity around localized food systems (Martinez et al., 2010). According to the 2012 Census of Agriculture, 49,043 marketed directly to retail outlets (a data point collected for the first time in 2012), 94,799 produced and sold value-added products (up by almost 20% from 79,418 farms and ranches in 2007), and 12,617 operated Community Supported Agriculture programs (CSAs) (up slightly from 12,549 in 2007). Across all types of locally-oriented farm activities, there is increased participation. Perhaps this represents the type of market diversification often recommended to producers, and fueled by those consumers and communities wanting to have a more locally resilient food sector.

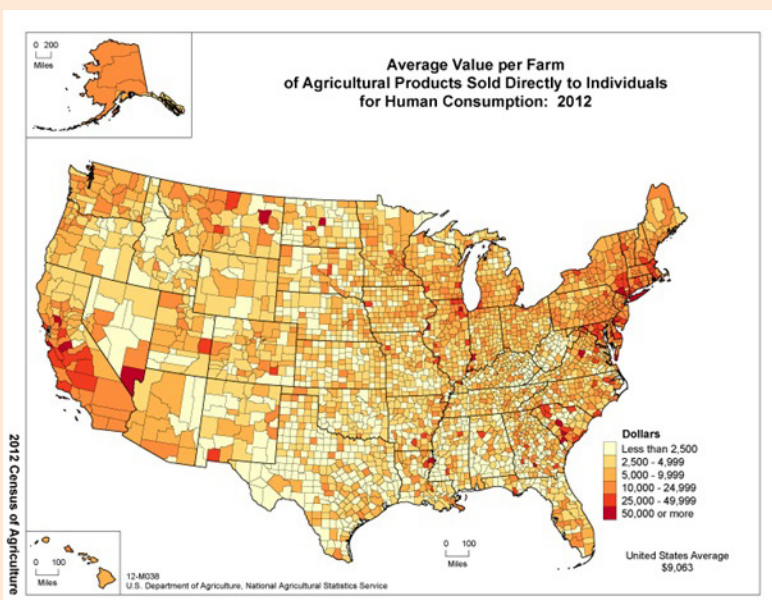
How does the use of these markets affect farm viability? That may be important to consider if consumers are using local markets as a way to support their local agricultural industry. Low and Vogel (2011) find that sales per acre is highest for fruit and nut and vegetable farms selling locally ($1,338 per acre on an average of 76 acres) when compared to that of all local food farms ($590 per acre) and all farms ($304 per acre) on average. Farms using both direct and intermediated marketing channels, defined as sales to middlemen like grocers, restaurants, and regional distributors, averaged $1,310 per acre. Farms using intermediated marketing channels exclusively, which tend to be the largest farms, averaged $3,100 per acre. So, some of the patterns observed in Figure 2, may be influenced by whether farmers markets are the sole outlets—suggesting lower gross direct sales—or if some type of locally driven food hub or distributor alliance has allowed producers to sell to bigger institutional buyers as well.

Consumers' Expectations of Local

Beyond opinions for acceptable distances of local foods to travel and the trends in the markets where they are found, it is worth exploring the role of consumers that catalyzed direct markets, food retailers adopting new local procurement policies, and the more recent emergence of urban food systems in and near metropolitan areas (Martinez et al., 2010). Over the last decade, several projects have explored how consumers translate the higher prices they pay for local (as well as organic and other sustainable food segments) to changes or outcomes they would like to support in their agricultural industry and food system (Thilmany, Bond and Bond, 2008; Onozaka, Nurse and Thilmany McFadden, 2010; Deselnicu, Costanigro and Thilmany, 2012). Thilmany, Bond and Bond (2008) were the first to explore if local purchases were driven by altruistic intentions rather than simple distances to market. Although higher local price points were often associated with perceived quality benefits (perhaps based on shorter distances translating to fresher product), they also found consumers were using their buying dollars to keep nearby land in farms and supporting farm jobs.

In subsequent research, Onozaka, Nurse, and Thilmany McFadden (2010) found that a sizable number of buyers connect local food purchases with outcomes that may impact their environment, local economy, and public health. In addition to an increasing share of those consumers buying at least 25% of their fresh produce in alternative markets (including farmers markets and CSAs, but also health food stores), those shopping in the direct markets also were willing to pay higher prices. Nurse, Onozaka and Thilmany McFadden (2012) went one step further with that same 2008 national survey data by integrating a psychological approach, the Theory of Planned Behavior (TPB), to explore how consumer choices may be shaped by beliefs and persuasion. For a subset of the respondents, Nurse, Onozaka, and Thilmany McFadden (2012) found that purchases through shorter supply chains such as

Figure 2: Average County-Level of Direct Sales Reported by U.S. Farms and Ranches, 2012



direct markets, resulted in a heightened sense of self-efficacy leading some consumers to make behavioral changes in their food purchases. In short, the question "what is local?" may not be defined by distance between producers and farmers, but rather, by the credibility of producers' mission or claims that align with the issues and food system changes desired by customers. Similarly, Thong et al. (2014) found that local labels had a strong substitution effect with support for small and family farms. These findings begin to suggest a new dimension of Corporate Social Responsibility (CSR) where not only do households scrutinize their investment dollars, but also the consumer companies they support, based on alignment of values with those businesses.

To explore this further, Deselnicu, Costanigro and Thilmany (2012) surveyed Colorado milk consumers on a variety of labeling issues, including how they perceived different labels as impacting food system issues. In short, participants were asked to use a quantitative scale (from -5 "much worse" to + 5 for "much better", in increments of one) to express how fluid milk displaying a specific label certification—USDA Organic, RBST-free (hormone-free),Validus (a third party certifier focused on animal and worker welfare), and Local-Colorado Proud—was perceived to perform in the nine selected CSR. Most of the areas are self-explanatory, but Table 1 shares the statements that were shared with respondents. A key focus to this study is the local area which states: "The company uses local resources and generates local growth. The local economy is stimulated by creating jobs locally."

Table 1: Corporate Social Responsibility (CSR) Activities Considered for Labeling

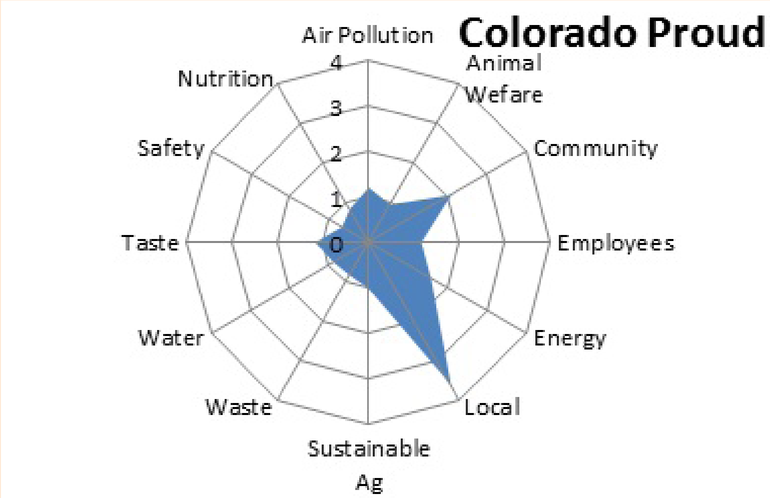
Dairy CSR Activities	Description
Animal welfare	There is a commitment to maintaining animal health through monitored nutrition and on-staff veterinarians, and reproduction by natural breeding rather than artificial insemination. Also, animals are kept outdoors on pastures rather than enclosed barns.
Energy consumption	Refers to the use of energy saving equipment in milk processing, and also to making transportation of milk to processing plants and retailers more energy efficient.
Water consumption	Implement recycling water programs through a water treatment facility and save water by using limited irrigation schedules to irrigate pastures and crops.
Air pollution	Manage the release of bovine methane by encouraging managed grazing and carbon soil sequestration. Also, decrease air pollution by making milk transportation from farm to plant and retailer more fuel efficient.
Community involvement	Company should be involved in charitable organizations, should implement volunteering days, and create and support local community programs.
Employee opportunities	The company should provide fair or above market wages, medical benefits, vacations, and retirement plans to employees. Employee advancement in company hierarchy is encouraged, as well as diversity in the workplace.
Local operation	The company uses local resources and generates local growth. The local economy is stimulated by creating jobs locally.
Waste management	Waste management refers mainly to composting solid waste to be used as fertilizer and monitoring waste runoff to the local water table.
Sustainable agricultural practices	Commitment to maintaining good soil health for a sustainable future of the business and the environment. Soil health implies practices such as the use crop rotation; using compost as natural organic fertilizer, and never using chemicals in maintaining a fertile soil.

Source: Thilmany, Deselnicu and Costanigro, 2013

Since the research objectives focused on how product labels may be a vehicle for transmitting CSR involvement information in a grocery store setting where consumer purchase decisions are made, mapping such label perceptions can define "What is Local." Figures 3a and 3b show how organic and local labels map into perceived CSR outcomes (averaged across study participants) to provide a comparison. Visually, the closer the shape moves towards criteria, it signals that consumers were more likely to associate that label with impacts on that particular CSR outcome. In short you can see both the direction and multidimensionality of a label's information transmission to the buying public.

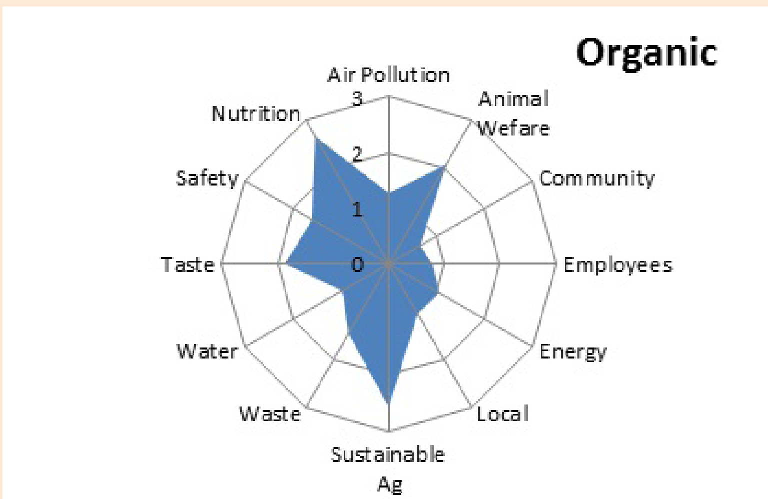
Results suggest that the organic label is multidimensional in that it is positively associated with animal welfare, energy, sustainable agriculture, waste management, taste, and nutrition. In contrast, the "Colorado Proud" label is associated with reduced air pollution, community involvement, local business, and taste. Multidimensional labels, such as organic, communicate cues mapping into a wide spectrum of outcomes and may have the advantage of appealing to a large number of consumers with diverse preferences. In contrast, local appears to be a more one-dimensional label, thereby transmitting a more focused message to consumers. But, this may also increase the pressure or scrutiny for local food systems and labeled food goods to demonstrate

Figure 3a: Consumers' Linkages Between Labels and Outcomes, Colorado Proud



Source: Thilmany, Deselnicu and Costanigro, 2013

Figure 3b: Consumers' Linkages Between Labels and Outcomes, Organic



Source: Thilmany, Deselnicu and Costanigro, 2013

that those claims of supporting the local economy and creating local jobs are credible. For short supply chains, these claims may be evident as buyers see farms hire new production and marketing staff or buy their inputs from local businesses, but as local food systems grow into intermediated businesses and food hubs, the challenge to communicate the impact may grow.

Why Does it Matter?

Why should we worry about better understanding what is local? One could argue that there are both marketing and policy implications. The local food segment was first officially defined by the United States Congress in the Food, Conservation, and Energy Act of 2008, with the following criteria: 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" (Martinez et al., 2010). The intended outcomes used to support more localized initiatives were primarily to improve competitiveness of producers and support local economies. One specific example is the earlier modification of the USDA Rural Development Value-Added Producer Grants program to designate local marketing as a form of value-added having equal importance with processing raw products into higher value goods. More recently, the Agricultural Act of 2014 disentangled a Local Foods Promotion Program from the Farmers Market Promotion Program operated by the USDA-Agricultural Marketing Service in recognition that farmers markets are only part of the local foods marketing infrastructure today.

In markets, the evolving role of local designations is perhaps a bit more complicated and subtle to define. The research and—more broadly—perceptions of what outcomes local-seeking consumers expect from the local foods they purchase suggests there may be increasing scrutiny of the use of local designations. For example, even buyers of certified organic products seem wary of corporate ownership of organic food companies, so those seeking local will likely question potential "greenwashing" by the more conventional food retailer sector if local offerings are not presented authentically (for example, with signage about the farm of origin). When there are short supply chains, such as when producers interact directly with their buying public or are part owners of a food hub distributing regionally, few challenge the notion of "local" labeling. However, as state branding programs, such as *Pride of New York* or *Ohio Proud* are used to connect an increasingly engaged set of corporate food retailers to procure locally, the degree of "localness" may be scrutinized, or valued less, by at least some of the buying public.

For More Information

Darby, K., M.T. Batte, S. Ernst, and B. Roe. 2008. "Decomposing Local: A Conjoint Analysis of Locally Produced Foods." *American Journal of Agricultural Economics* 90 (2), 476–486.

Deselnicu, O., M. Costanigro, and D. Thilmany. 2012. "How Corporate Social Responsibility Initiatives are Emerging in the Dairy Sector: an Analysis of Consumer Perceptions and Priorities." Paper presentation at the 2012 AAEA Annual Meetings. Seattle, WA.

Hinrichs, C. 2000. "Embeddedness and Local Food Systems: Notes on Two Types of Direct Agricultural Markets." *Journal of Rural Studies*, 16, 295-303.

Jekanowski, M.D., D.R. Williams, and W.A. Schiek. 2000. "Consumers' Willingness to Purchase Locally Produced Agricultural Products: An Analysis of an Indiana Survey." *Agricultural and Resource Economics Review* 29 (8), 43.

Low, S. A., A. Adalja, E. Beaulieu, N. Key, S. Martinez, A. Melton, A. Perez, K. Ralston, H. Stewart, S. Clark Suttles, S. Vogel, and B. B. R. Jablonski. 2015. *Trends in U.S. Local and Regional Food Systems: A Report to Congress*. Economic Research Service (AP-068).

Low, S. and S. Vogel. 2011. *Direct and Intermediated Marketing of Local Foods in the United States*. Economic Research Report-128. U.S. Department of Agriculture, Economic Research Service.

Lyson, T.A. 2004. *Civic Agriculture: Reconnecting Farm, Food, and Community*. Boston, MA: Tufts University Press.

Martinez, S., M. Hand, M. DaPra, S. Pollack, K. Ralston, T. Smith, S. Vogel, S. Clark, L. Lohr, S. Low, and C. Newman. 2010. *Local Food Systems: Concepts, Impacts and Issues*. Economic Research Report-97. United States Department of Agriculture, Economic Research Service.

Nurse, G., Y. Onozaka and D. Thilmany McFadden. 2012. "Consumer Motivations and Buying Behavior: The Case of the Local Food System Movement." *Journal of Food Products Marketing*. 18:5, 385-396.

Onozaka, Y., G. Nurse, and D. Thilmany McFadden. 2010. "Local Food Consumers: How Motivations and Perceptions Translate to Buying Behavior." *Choices,* 25(1).

Onozaka, Y., G. Nurse, and D. Thilmany McFadden. 2011. "Defining Sustainable Food Market Segments: Do Motivations and Values Vary by Shopping Locale?" *American Journal of Agricultural Economics, 93(2),* 583-589.

Pirog, R., T. Van Pelt, K. Enshayan, and E. Cook. 2001. *Food, Fuel, and Freeways: An Iowa Perspective on How Far Food Travels, Fuel Usage, and Greenhouse Gas Emissions*. Leopold Center for Sustainable Agriculture, Ames, IA

Stevenson, G. W., and R. Pirog. 2008. "Values-Based Supply Chains: Strategies for Agrifood Enterprises of the Middle.", pp. 119-143, in T. Lyson, G. W. Stevenson, & R. Welsh (Eds.), *Food and the Mid-Level Farm: Renewing an Agriculture of the Middle*. Cambridge, MA: MIT Press, ISBN 978-0-62215-8

Thilmany, D., C. Bond, and J. Bond. 2008. "Going Local: Exploring Consumer Behavior and Motivations for Direct Food Purchases." *American Journal of Agricultural Economics,* 90(5): 1303-1309.

Thilmany McFadden, D. and S. Low. 2012."Will Local Foods Influence American Diets?" *Choices*, 2nd Quarter 2012

Thilmany, D., O. Deselnicu and M. Costanigro. 2013. "How Consumers Respond to Corporate Social Responsibility Initiatives: A Cluster Analysis of Dairy Consumers." *Journal of the Food Distribution Research Society Proceedings Issue*. Vol. XLIV, No. 1

Thong, M., W. Hu, M.T. Batte, T.A. Woods, and S. Ernst. 2014. "Substitutes or Complements? Consumer Preference for Local and Organic Food Attributes." *American Journal of Agricultural Economics,* first published online December 19, 2014 doi:10.1093/ajae/aau108

U. S. Department of Agriculture-Agricultural Marketing Services (USDA-AMS). 2013. Farmers Market Growth. Available online: http://www.ams.usda.gov/

United States Department of Agriculture. 2012. *Census of Agriculture*, county level data. Available online: http://www.agcensus.usda.gov/Publications/2012/

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