

# HEALTHY FOOD SYSTEMS: A TOOLKIT FOR BUILDING VALUE CHAINS



Created by Anthony Flaccavento  
and  
Appalachian Sustainable Development

With support from the  
Wallace Center at Winrock International's National Good Food Network  
and the Ford Foundation

Second Edition

***“This is a very useful tool that gives step by step instruction. There isn’t much if anything like it out there, which makes this a unique contribution. The practical first hand information in the book is great and will be useful to those trying to do this work.”***

***John Fisk  
Director  
The Wallace Center at Winrock International***

## **Preface**

This toolkit is the product of nine years of experience that Appalachian Sustainable Development (ASD) has accumulated in building a healthy foods value chain in the Central Appalachian region of Virginia and Tennessee. The agriculture of this region was dominated by tobacco for several generations. The farm land is fertile, but divided into small parcels, where tillable land is at a premium. Although incomes vary, most farmers in the region have limited cash or capital, and as such are very cautious about taking on the risk of new ventures. The strategy detailed in this Tool Kit reflects the reality of these farms and farmers. We believe, nonetheless, that it will have broad applicability so long as local needs, limits and assets are considered.

This toolkit is designed to help new and emerging healthy food system value chain efforts. While it draws heavily from the experience of Appalachian Sustainable Development, including particularly its *Appalachian Harvest* network, it also includes ideas, challenges and insights from other value chain and food system initiatives, both within Appalachia and other parts of the country. The toolkit is intended to be a hands-on resource which can help spur new thinking, help refine plans, and perhaps help guide implementation of new and emerging food system initiatives.

Writing and production was made possible by support from the Ford Foundation and the Wallace Center at Winrock, International.

The toolkit is divided into seven sections:

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Along the way, short questionnaires are included, intended to surface some of the key needs one is likely to encounter in building healthy food system value chains.

A summary of lessons learned from existing experiences and a short list of resources comprises the final section of this workbook.

A word about Appalachian Sustainable Development and CAN: Appalachian Sustainable Development was formed in 1995 to overcome the “jobs vs. the environment” conundrum faced by so many limited resource rural communities. As part of that, we have developed a sustainable agriculture program designed to promote

improved farm incomes and better stewardship practices by linking farmers to consumers and buyers seeking healthy, local foods. ASD's agriculture program encompasses work with farmers markets, chef's and restaurants, a farm incubator, Land Grants, extension personnel and a variety of agencies and organizations assisting lower income people. *Appalachian Harvest*, the flagship value chain of our sustainable agriculture work, provides the primary basis for this document. For more information visit the ASD website at [www.asdevelop.org](http://www.asdevelop.org).

The Central Appalachian Network (CAN) is a five state network of catalytic non-profits working to build a more sustainable and locally rooted economy in Central Appalachia. Member organizations include ACENet (Athens Ohio), Jubilee Project (Sneedville, TN), the Center for Economic Options (Charleston, WV), the Mountain Association for Community Economic Development (Berea, KY), the Natural Capital Investment Fund (Shepherdstown, WV), Rural Action (Athens, Ohio), and ASD (Abingdon, VA). CAN works in partnership with the Ford Foundation, the Mary Reynolds Babcock Foundation and several local and regional partners. CAN is supporting healthy local food system work including the development of value chains, through "best practice" gatherings, workshops and consultation, peer learning and a mini grant program. For more information, visit the CAN website at [www.cannetwork.org](http://www.cannetwork.org).

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## **I. Introduction**

Ricky Horton has been growing tobacco on his Scott County, Virginia farm for many years. In 2005, Ricky decided to try organic farming, after being encouraged by several other local farmers who had been growing for the Appalachian Harvest organic growers group. In his first year, Ricky and his sister, Sherilyn Shepard, raised a little less than two acres of organic produce. According to Ricky, “We made more on a half acre of cucumbers through Appalachian Harvest than we did on over an acre of tobacco. That got me interested in trying to grow more organic.”

Ricky and Sherilyn expanded their operations and now raise nearly 15 acres of certified organic produce, while also maintaining a flock of free range chickens, selling the eggs through Appalachian Harvest as well.

Ricky and Sherilyn are typical of many farmers in the central Appalachian region. Born and raised on farms, they have seen their economic opportunities dwindle as the federally supported tobacco program declined. So they began diversifying their operations several years back, including raising flowers and potted plants for retail sales, and growing conventional produce for sale to local buyers. Nonetheless, they were struggling to find a core business with reliable markets and a good return for their investment of work and capital. Raising organic produce and free range eggs through the Appalachian Harvest value chain system seems to have given them that core enterprise.



*Customers at the Abingdon, VA Farmers Market*

## **Building a Healthy Local Food System**

Over the past few years, there has been an enormous expansion in interest in both local foods and in maintaining a healthier lifestyle, including our eating habits. This broad public interest has created strong demand for local and organically and sustainably raised foods in many different market outlets: farmers markets, health food and specialty stores, grocers and supermarkets and public school and college dining halls.

Although people define it differently, the idea of a healthy local food system is generally built around four elements:

- healthy food, including fresh produce and leaner, grass based meats;
- environmental stewardship practiced particularly by farmers but also considering the distance food travels and other post-harvest practices;
- access to healthy food for people at all income levels, not just for well-to-do “foodies”; and
- a livable wage for Farm-workers and a decent livelihood for farmers.

Few would argue with the goal of healthy food, accessible to all, that promotes better stewardship of the land while improving income for farmers. However, the challenge is in designing a system that makes these sometimes competing elements economically feasible for everyone in the chain. This work is generally referred to as “value chains”, that is, supply chains that begin on farm and end at the consumer’s table, and which promote values of health, fairness and sustainability.

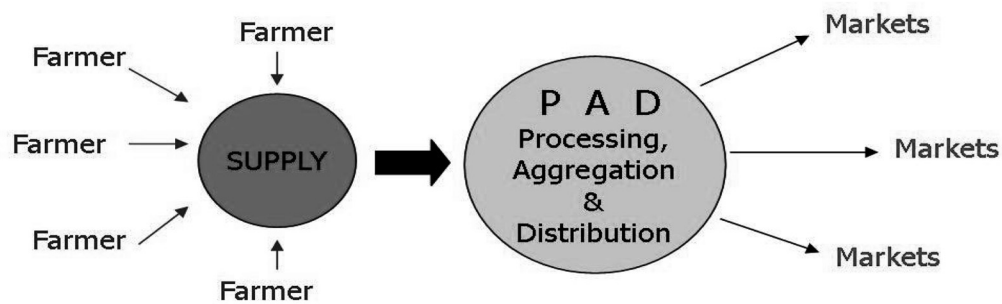
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## II. What is a Value Chain?

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With barely more than 1% of the U.S. population engaged in farming, and our population steadily shifting to urban and suburban living, most Americans are several steps removed from farms and farmers. While the rapid growth in farmers markets in most parts of the country is an exception to this, the vast majority of food consumers depend on a “supply chain” to bring food—and for that matter, fiber, materials and energy—to their tables. This supply chain varies in both scope and scale, but usually includes:



1. **Supply** – Food producers, including farmers, ranchers, fishermen, aquaculture operations, etc;
2. **Market venues** – ranging from small grocers, independent restaurants and specialty stores, to regional and national supermarket chains, schools, colleges and universities, and an array of large institutional buyers;
3. **Processing, aggregation and distribution** - or PAD - which links the supply with markets. This ranges from community kitchens and small, independent broker/distributors to multinational food processing and/or distribution companies.

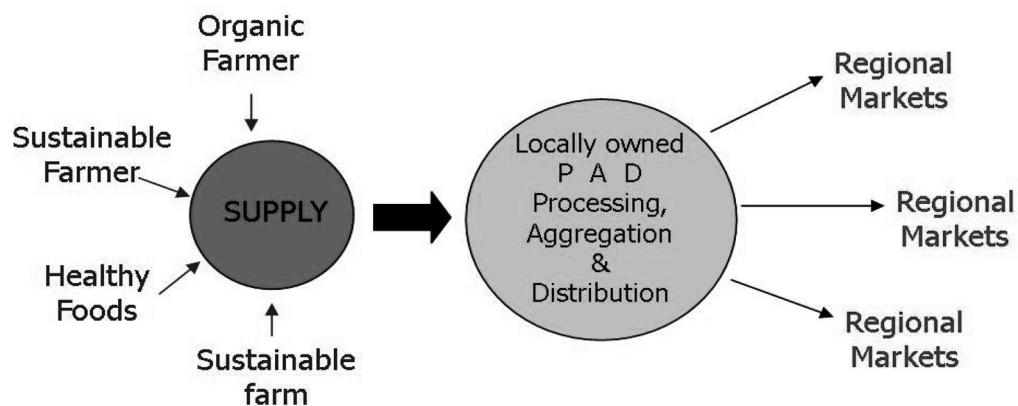
A “value chain” is a supply chain that is designed to link supply with markets efficiently, but to do so while promoting certain core values, including:

- *Equity and fair pay* – for farmers, farm-workers, food producers, businesses and workers in the supply chain.
- *Ecological sustainability*—beginning with more sustainable farming practices, but also considering the total ecological footprint of production, packaging, shipping, etc.
- *Community capacity*—to better meet its own food needs and to build a more self-reliant economy, primarily through locally owned infrastructure and assets.
- *Health and food access*—for all, with a particular concern for people of limited means.

“We may be losing money on every bushel we sell, but we’ll make it up in volume,” goes the refrain of many a farmer. While it is said tongue-in-cheek, it is often a painfully accurate description of the farmers’ situation. When economist, Ken Meter studied Virginia’s food system, he found that annual sales of commodity crops in 1999–2004 averaged 2.8-billion dollars. That seems impressive. Unfortunately, those same farmers’ input costs averaged \$2.9-billion per year—substantial volumes, but a losing proposition for farmers. Is it any wonder that the state lost more than five-million acres of farmland over the past 50 years?

The same study also provides reason to be hopeful. Meter examined food expenditures by Virginia consumers and found that if they bought directly from farmers—at farmers markets, through CSA’s, or through grocers and institutions sourcing from local farmers—just one day per week, farmers would reap an additional \$2.2-billion in annual sales. This new income alone will not guarantee farm profitability, but with well-functioning, locally-based value chains in place, farmers get a larger share of the consumer dollar, increasing their net return. Selling more bushels and getting better prices on every bushel just might make farming a bit more viable.

Thus, the work to build value chains involves the development and/or integration of the “three legs” of (1) supply, (2) PAD (processing, aggregation and distribution), and (3) markets in ways that promote equity, ecological sustainability, community self reliance, and improved health for all.



A value chain differs from a conventional supply chain in terms of the type of farming, the degree of local ownership or influence, and the distance to market. There is also more transparency and “feedback” among the different parts of the chain.

While value chains will emerge across a range of geographical distances, there is a preference for focusing on local to regional transactions, both to reduce ecological



impacts and to help overcome the estrangement between “producers and consumers” that tends to emerge with long distance supply chains. There is no clear mile limit that defines a “regional” transaction. However, given the 1500-1750 mile average for food miles in the U.S., value chain initiatives might define their region in relation to this, for example at 400 miles, or one-fourth the distance of the conventional transaction.

### **Value Chains and Place**

Over the past 20 years in particular, the food system has become increasingly globalized and in many respects “place-less”. Enabled by cheap energy costs and the Wal-Mart model of low cost international supply lines, this system has made food extraordinarily mobile and widely (though certainly not universally) available, irrespective of the season or the locale of those consuming it. In this environment, Wendell Berry’s oft-quoted dictum that “Eating is an agricultural act” has seemed unfathomable to most modern consumers.

On the other hand, the dramatic growth of farmers markets and other direct-to-consumer food arrangements (CSA’s, buying clubs, etc) since the mid 1990’s has helped spawn an awareness of food and its relationship to health and the environment, and a consequent demand for local and sustainably produced food. This in turn has generated improvements in public policy that are beginning to level the playing field for local and sustainable foods.

Meeting this upsurge in demand for food that is both healthy and grown nearby has proven to be a challenge in most areas. Developing effective value chains can provide part of the solution, as they help provide the infrastructure and market relationships that make it more feasible for farmers to reach and supply a range of local and regional markets.

In fact, value chains are regional in nature. The transactions include more than the “farmer and consumer”, of necessity involving other parties and businesses such as processors or distributors. Nevertheless, they should provide several of the key attributes which local foods advocates seek:

- *Knowing where your food comes from*, through farmer profiles at the point-of-purchase, through farm tours and local meals that create direct contact, and through transparency and traceability throughout the chain;
- *Reducing food miles*, typically by 75 – 90% compared with conventional food transactions; and
- *Increased availability of organic and sustainably produced food, with less packaging and processing.*



*Appalachian Grown*, developed by the Appalachian Sustainable Agriculture Project, and *Appalachian Harvest*, developed by ASD provide examples of place-based brands

### **Value Chains and Scale**

Determining the appropriate scale at which to operate a value chain is critically important if it is to be financially viable for all parties throughout the three legs of the stool. While there is no clear formula for making this determination, the following questions should be considered. Keep in mind that these questions should be asked in an iterative, back and forth process. **Information about markets will shape the size, type and number of farmers sought, while the type of farmers in your area will likely steer you towards particular markets.**

1. How large is the unmet demand for healthy, local foods in your region, and can it be met by an expansion of farmers markets, CSA's and other direct market options?
2. Who and where are the specific market drivers for healthy local foods? Is it public schools, colleges and universities? Is it retailers, and are they regionally based or national chains?
3. What is the estimated total demand, and for what type of products? Is there a minimum demand indicated by the buyers that must be met?
4. Roughly how many farms/acres of land would be required to meet this demand?
5. Is there broad enough interest among farmers to meet this demand, and if so, how much assistance and support (training, materials, finance) will they likely need? Who is available to provide this assistance, or can be cultivated to do so?
6. Why are these markets beneficial for farmers? Do they reduce costs? Improve prices? Provide larger, more predictable markets, or easier market access?
7. How many farmers/food producers will be needed to meet the minimum—and projected—demand, and how close are these farmers to one another?
8. What infrastructure is needed to link the desired products to the markets, and does some or all of it currently exist?
9. What will it cost to build or access the needed infrastructure, and what form of funding—grants, loans—is available?
10. Is there a local organization or business willing and able to launch the value chain? To manage it, if that is necessary?

Answering, or beginning to answer, these questions will help you assess your readiness to organize or build a value chain. It will also begin to connect you with farmers, buyers, distributors and others with whom you will need to work to build a value chain.

#### Value Chain Benefits

The primary reason to build or strengthen a healthy foods value chain is to move more organic and sustainably produced farm products into larger markets. But there are several additional benefits that accrue to local farmers and the economy, once an aggregation and distribution hub is in place:

**Jobs:** At processing, packing and grading, and food preparation facilities, and for truckers delivering food to markets.

**Business Development:** In greenhouses, feed, seed and breeding stock, organic or specialized materials, irrigation, mulch and other supplies and equipment dealers.

**New Healthy Food Products:** Using excess product or seconds

**Younger Farmers:** Who are attracted to both the organic / sustainable production methods, and the cooperative networks of growers around which value chains are usually built

#### The “Chicken or the Egg” Dilemma

**“This market needs more farmers and more product diversity to attract a strong customer base. But most farmers don’t want to risk producing more or new products without first seeing a large and secure customer base. This is the “chicken or the egg” dilemma faced not only by farmers markets, but by most value chain initiatives as well.”**

A handful of farmers park their trucks in the Methodist Church parking lot on Main Street on a Saturday morning. There’s a good bit of vehicle traffic along that road and most people notice the trucks with produce on tailgates and tables. A few stop, but most people, busy with kids or chores, keep on going. At a glance, there doesn’t seem to be enough stuff to make a stop worth while, and judging from the number of shoppers, most folks seem to agree.

This market needs more farmers and more product diversity to attract a strong customer base. But most farmers don’t want to risk producing more or new products without first seeing a large and secure customer base. This is the “chicken or the egg” dilemma faced not only by farmers markets, but by most value chain initiatives as well. In fact, for value chains the challenge is usually greater, because the scale is larger and the requirements—quality, consistency, packaging and labeling, GAP, etc.—are greater.

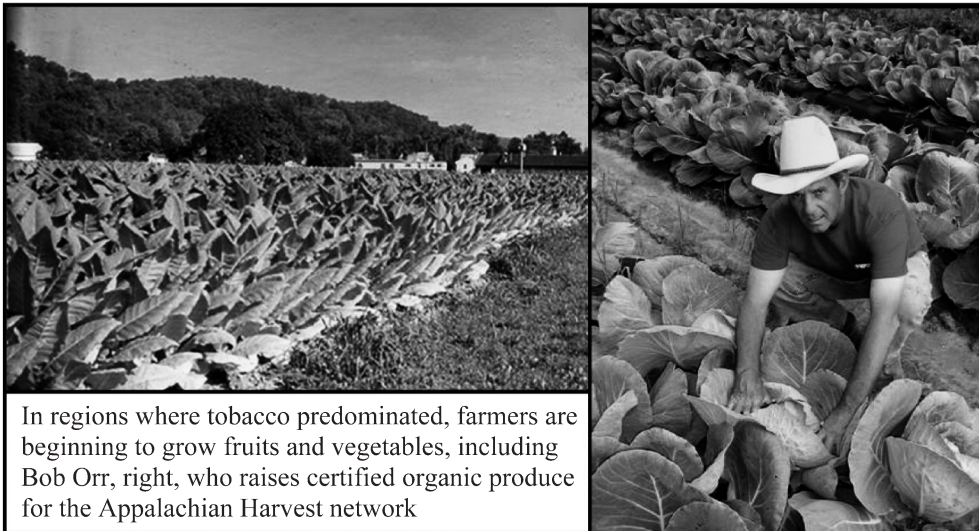
Section IV will explore strategies for overcoming, or at least working through, the chicken and egg dilemma to launch a value chain.

### **III. Getting Started—A Quick But Essential Field-to-table Scan**

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Developing each of the legs of the value chain will require considerable research, information gathering and experimentation. Before going too deeply in any one area, it is important to do a quick “field-to-table” scan of the value chain, both existing and potential, in your region. This will help focus your attention and resources and should reduce the chances of going down a path that is unlikely to succeed. It will also help you begin to assemble a team and develop the all important *relationships* you’ll need to catalyze or facilitate a value chain.

As with all things in this toolkit, we strongly recommend that information gathering and analysis be mingled with experimentation and practice. Don’t spend years or even months exclusively talking and thinking about what you might do; get involved, find the folks already engaged in parts of the value chain and together, try stuff. From this experimentation will come insights and relationships unlikely to surface from a purely academic or intellectual process. We might think of this as an “action learning” approach.



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Once you decide to embark on action learning to scan the potential for a healthy food value chain, consider these questions to guide and organize your investigation:

*What is already here?*

- What are the major and minor crops or livestock that are being raised in our area? Which of these are increasing (in acreage, \$) and which are stagnant or in decline?
- Why are they increasing or declining? Is it falling prices, competition and loss of market share, production problems, regulatory or PAD barriers? Other factors?
- Who are our farmers and food producers? Multi-generation or newcomers? Conventional or sustainably minded? English speaking or non-English speaking? What are their resources and limits, and what is their capacity to handle risk?
- What could be raised here – in terms of soils, climate, topography - or once was, but is not now produced on a significant scale? What factors have precluded current production of these things? Can they be profitably and sustainably produced in our region?

*What's the market and where is it headed?*

- In our region and surrounding areas, what are the most important direct market outlets for healthy food: Farmers markets, CSAs, buying clubs, produce stands, restaurants? What is being bought there? Are any foods emerging in many or most of these markets that could be produced well in our region? Who are the farmers already doing so?
- In our region and surrounding areas, what are the most important wholesale and institutional markets for healthy food: Locally-based grocers, regional or national supermarket chains, produce auctions, institutional purchasers, colleges and universities, public schools? Which of these are already sourcing locally/regionally and which appear serious about doing so? What is their interest in organic/sustainably produced food?
- Are there particular healthy foods for which a strong demand is evident or emerging in both direct markets and wholesale/institutional markets? Is this current demand significantly larger than current supply?
- Are there farmers raising these foods, and if so at what scale? Are these farmers interested in and capable of significant production increases? What would they need to scale up?

*PAD (Processing, Aggregation and Distribution) requirements*

- What are the PAD requirements to move larger volumes of the potential food products we are considering into wholesale and institutional markets? Are the PAD requirements of some buyers easier to meet than others? Who are these buyers?

- Are there existing facilities – meat processing, produce grading and aggregation, commercial kitchens – that could be used to meet PAD requirements? Who owns these and how accessible/affordable are they for local producers?
- Are there existing distributors that might help move local foods to regional markets? Who owns these, what would it cost to use them and what requirements do they have, in terms of grading, cooling, packaging, etc.
- If there are substantial gaps in the needed PAD infrastructure, are there partners or funds available to address these gaps?

These are among the important questions you should be considering as you begin to build or expand a value chain. There are certainly others, probably including some unique to your region. However, don't feel that you must fully answer all of these questions before taking action, developing partnerships, or experimenting with new products or markets. Remember: this is an *action* learning approach.

**A fruitful field-to-table scan should focus your plans and efforts by helping determine the basics:**

1. *What farmers are now raising, or could be raising, that can be sold in substantial quantities, and produced profitably and sustainably*
2. *Who is likely to buy these products, where they are located and what are their essential requirements; and*
3. *What systems and/or infrastructure will be needed to connect area farmers with those buyers, and which parts of this infrastructure need to be developed?*

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#### **IV. Markets – The First Leg of the Value Chain Stool**

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Several years ago, a farmer made an appointment to show some samples to the produce buyer at a local supermarket chain. Once in the warehouse, he opened the box to reveal beautiful red and yellow bell peppers, most of which he'd grown on his organic farm. They were large and extra large, unblemished, some blocky in shape, others a bit more elongated. The buyer looked through the box quickly, shook his head and motioned for the farmer to follow him. Further back in the warehouse, he pulled a box marked "Product of Holland" down from the shelf and opened it. Inside there were dozens of perfectly red bell peppers, all virtually identical in size and shape. They were much smaller than the bell peppers in the farmer's box.

"Look at these" the buyer said, emphatically and proudly, "they look like they were made in a mold!" When the farmer asked if the perfect uniformity was really necessary, the buyer responded, "That's what the American housewife wants."

The next day, that same farmer arrived at the dock of a different supermarket chain with the same box of peppers (He'd kept them in a cooler overnight!). When the box was opened this time, the buyer almost immediately took one of the peppers out, held it up to look at it, and then took out his pocket knife, cut a slice and ate it.

"That's fantastic! It's so crisp and sweet. You grew these?" asked the buyer. "I grew some of them and some were grown by another farmer in our group", was the reply.

As he dialed a number in his phone, the buyer asked "They're organic, right? How many cases can you bring me of these?" **The lesson: Know your buyer.**

##### **A Word About "The Chicken or The Egg"**

Farmers want to know that their crops or products will sell. Buyers, especially those with institutions and supermarkets, want assurances that product will be there in the quantities and quality they need. How does one overcome this "chicken & egg" challenge getting a value chain going?

Two strategies appear to help. First, find a "patient buyer", i.e. one who wants what you have to offer, but understands that your supply will not be too large or entirely reliable for some time. They're out there. A medium-sized local grocery chain might fit the bill, or a larger one willing to place your items in designated stores, expanding the number as your supply grows.

Alternatively, a small private college with 1000-5000 students may also be a good fit. The key is that they are sufficiently committed to healthy local foods to stay with you as you learn, grow and make mistakes along the way.

A second strategy is to identify a small group of farmers who are willing and able to take risk, specifically to produce foods that buyers appear to want, in sufficient quantity to both test and begin to develop a market. Finding farmers willing to do this may be a challenge, although some will see it in their long-term interest to take such a risk. A small pool of funds might also be raised to help off-set some of the risk to these growers, should the markets prove unworkable.

## Getting to know potential buyers

This is perhaps the first and most important step you can take in developing a value chain. Needless to say, getting to know potential buyers happens over time, so you must go well beyond a single meeting. Nonetheless, though often you can get a reasonably good idea about their attitudes, priorities and likely interest in your product from that first impression. **Getting to know your potential buyers** is the first step in assessing and building a market for your healthy foods. The second is to **narrow the market scope** to those that best fit your current and near-term needs and capabilities.

Having completed a field-to-table scan of the healthy food system in your region, you begin the process of getting to know your buyer with a critical baseline of information:

- What farmers are raising or could raise in substantial quantities, produced sustainably and profitably;
- Who is likely to buy these products; and
- What are the infrastructure needs to prepare and transport these products to markets.

It is now time to drill down much deeper.

Two simple things will get this process underway. First, visit the market(s) and take note of what you see. If the potential buyer is a grocer or supermarket, what's on their shelves and how is it displayed? Are there "local" sections, or local branded products? How much of an organic presence is there, and for what items? What about grass finished, free-range meats and eggs? How well placed and displayed are these items? What is the price difference between these and the non-local/sustainable items? While you're there, talk to the produce manager and other staff.

For schools and institutions, visit their dining halls or cafeterias with comparable questions in mind, and talk to students and faculty you encounter. These visits will give you a sense of where the buyer is now with the types of foods you hope to sell them (Of course for chains, it is better to visit several stores, and for any buyer, you need to take seasonality into account if you're looking for local items).

The second step involves a little research to ascertain where these potential buyers are headed in regards to local and sustainable foods. Have they set specific procurement goals, as some universities have done, for a percentage of local or sustainably sourced foods? Are they planning to create a local/organic salad bar in one of the dining venues, or a designated section within their stores? Have there been any statements or pledges made by their leadership, for example to the Climate Action Commitment or to source from local farmers? This information, combined with what you've learned from market visits, should help you decide the buyers with whom you want to make an appointment.

When meeting potential buyers, it's best to carry two things with you: solid information



about them, obtained during the process outlined above, and samples. Produce and eggs provide potential buyers with immediate visual cues about the quality of what you're raising and about your "presentation", including packaging and labeling of the product. For meats, while the visual is important there will likely be a taste test element as well. Because it is not uncommon for meat samples to get "lost in the shuffle", you may need to provide them more than once, or to several people in the institution. Alternatively, bringing potential buyers to you at a cookout or sit-down meal on the farm can insure that they taste your products, while they also begin to develop a sense of connection to the farmers.

Before you provide samples, whether tomatoes, free range eggs or ground beef, be sure these are items you can raise well, in quantities large enough for at least a "trial period" with the buyer. This might be an academic semester or a designated season, but it should be long enough for their students or customers to taste your food, and hopefully, start asking for it regularly.

While much of the initial meeting with a potential buyer is about "putting a face on their food", it is also essential that you glean as much information as possible, including:

- Which attributes are they most interested in and why? Quality? Locally raised? Organic?
- Quantities: What would they like to have and what would the minimum be that they need?
- Quality standards, regarding size, ripeness, color (for eggs in particular), fat content, etc.
- Delivery schedule: Monthly (for prepared foods), weekly, twice per week?
- Delivery destination: Will you be delivering to a central dock, or to each individual store or school?
- Seasonality: What do they want and what are they willing to accept?
- Packaging and labeling preferences and requirements
- Do they require GAP (Good Agriculture Practices) for produce, or USDA certification for meats?
- PRICE—What are they now paying for comparable products and what are they willing to pay for your foods?

Price is an especially critical element in developing value chains. Low prices, for milk, meats, grains and produce have driven thousands upon thousands of farmers out of farming. Low prices also encourage poor environmental and labor practices, as farmers seek to cut costs any way they can. Therefore, it is of no value to get access to markets if the prices they pay don't offer farmers the possibility of profit.

On the other hand, retailers must cover their costs and schools must keep their meal plans affordable. Finding a price that meets retailers' needs and still offers a decent return to farmers is one of the biggest challenges you'll face if you move beyond the "direct-to-

consumer” sales. There are tools to make this more feasible, but we’ll come back to that later. Now we’re ready to turn our attention to supply.

Appalachian Harvest focuses on supermarkets and currently sells to six different chains encompassing nearly 600 stores in Virginia, Tennessee, North and South Carolina, Georgia and Maryland. Supermarkets were chosen because of the size of the market and the access it provides to a broad spectrum of consumers (as compared to restaurants, CSA’s or Universities). Approximately 25 different produce items are sold along with free range eggs. Additionally, supermarkets are “in season year round”, while schools, colleges, and universities are at least somewhat out of sync with the growing season in much of the country. The potential to steadily expand the market and introduce new crops and products is also strong with supermarkets.

The primary disadvantage of selling produce to supermarkets is the strict, almost industrial, aesthetic standard which most maintain. This translates to a relatively high proportion of “seconds”, i.e good quality produce that is a bit too small, too large, too curved or otherwise non-uniform.

ASD addressed this challenge by developing multiple markets for seconds, greatly improving farmers’ bottom line. These include:

- Healthy Families, Family Farms – Using funds provided by churches, civic groups and individuals, organic produce seconds are purchased directly from local farmers, at a discounted price, and then distributed to families in need through the Southwest Virginia Second Harvest Food Bank.
- Sales to college and university dining services – who can use seconds for most items because they will be chopping, slicing or cooking them. The price for these is lower than a #1, making *Appalachian Harvest* more competitive with other conventional suppliers.
- Sales to in-store food service – that is, the salad bars and food bars which many supermarkets offer. Like college food services, they also can use seconds since they will be chopped or cooked.

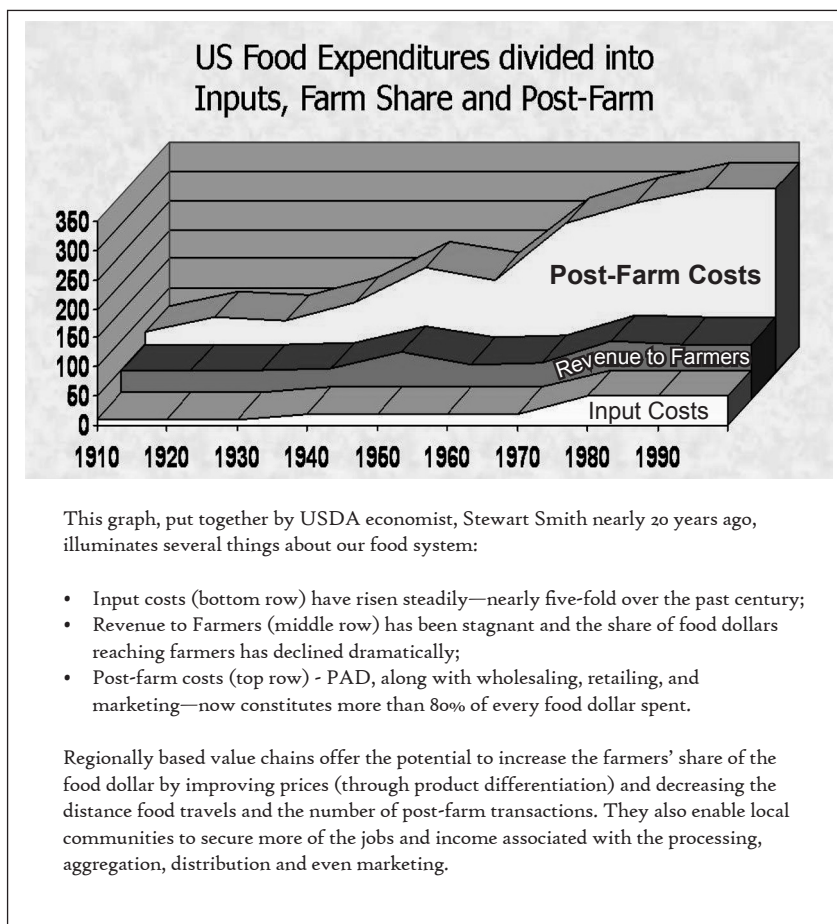
Finding good markets for seconds is key to improving farmer incomes, but it also helps achieve goals of making healthy food more affordable and accessible.

**“Finding a price that meets retailers’ needs and still offers a decent return to farmers is one of the biggest challenges you’ll face if you move beyond the “direct-to-consumer” sales. It is of no value to get access to markets if the prices they pay don’t offer farmers the possibility of profit.”**

***“Finding good markets for seconds is key to improving farmer incomes, but it also helps achieve goals of making healthy food more affordable and accessible.”***



*Through the Healthy Families initiative, ASD has distributed over 250,000 lbs. of fresh organic produce to families in need, while providing income to more than 50 small farmers. Gary Mitchell, Manager of the Second Harvest Food Bank in Abingdon, gets ready to prepare some organic cabbage.*



## **V. Supply—The Second Leg of the Value Chain Stool**

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Value chains provide farmers with three important benefits:

- Large markets for their products
- Relatively good prices
- Time saved on sales and distribution

These benefits are what drive many farmers to participate in a value chain, often raising a new crop or changing production practices to meet a specific standard, such as “organic” or “grass finished”. While many farmers welcome the opportunities a value chain offers, it is not for everyone.



*Farmers in the Appalachian Harvest network gather to plan for the upcoming season.*

### **Two Types of Farmers**

In Appalachian Sustainable Development’s early years, we formed a restaurant marketing group that included about ten small scale farmers and market gardeners. We pooled our produce (uncertified organic), field graded it and delivered it to about a dozen restaurants in a (sometimes) air conditioned van. We also operated a CSA together, usually with about 50-60 households. Our group included some Amish families, a few back-to-the-landers and some middle-aged hippies. We were a pretty typical bunch of organic growers.

By 1999, we were still pretty much the same group of growers, in spite of five years of outreach to local farmers. On the heels of some visits to regional supermarkets late in 1999, and with their stated interest in local, organic produce, we secured our first two tobacco farmers willing to grow for these buyers: seasoned farmers, born and raised in Appalachia,

known in their communities. This was the beginning of our rapid transition from idealistic newcomers to veteran local farmers. **The lesson: Know your farmer.**

It is essential to know your base of farmers and to build your marketing and distribution systems accordingly. In many parts of the country there are two basic types of farmers, which we'll categorize as "sustainably minded" and "conventional". Recognizing that these are generalizations and that some folks don't fit either, it nevertheless provides a useful way to understand and meet the needs of farmers.

"Sustainably-minded"	"Conventional"
Generally younger	Typically middle aged or older
Often new to farming	Born and raised on farms
Transplants to the area	Local
Strong philosophical commitment to organic/sustainable	Skeptical of organic/sustainable
Experimenters, "dabblers", who want to raise many things	Prefer to produce smaller # of items on a larger scale
Love the idea of farming, but lack resilience	Know the work of farming, are resilient
Micro to small scale	Small to medium scale
Want interaction with customers	"I'll grow it, if you'll sell it"
Expect top dollar	Want good prices, but more accustomed to wholesale.

While there are definitely exceptions to these categories, the majority of farmers in the Appalachian region and the southeast largely fall into one of these two groups. Building a sizeable and reliable supply requires outreach, education, extension work and development of some form of cooperative marketing. This in turn depends upon knowing the farmers with whom you work and ensuring that these support services are relevant to them. In the case of *Appalachian Harvest*, the system was designed primarily to meet the needs of the more conventional growers, as they represent the vast majority of farmers in our region. It is feasible, we have found, to also reach newer and more sustainably-minded farmers, with some adjustments and additions to the training and support system.

**"Building a reliable supply is among the most challenging aspects of value chain work. But it is absolutely essential to developing strong commitments from buyers."**

Building a reliable supply is among the most challenging aspects of value chain work. But it is absolutely essential to developing strong commitments from buyers.

**There are three key components to building supply:**

- **outreach;**
- **training and technical assistance; and**
- **building a producers' network.**

**Outreach**

An effective outreach strategy will vary considerably from region to region, but begins with an understanding of what type of farmer you're hoping to attract. Young people and sustainably-minded growers are more likely to attend a community meeting and respond to a message focused on organic crops or healthy foods. Tobacco growers and more traditional farmers are more likely to come out if the meeting is hosted by a neighbor, or is held at a farm, rescue squad or other familiar location. Both groups are looking for help with selling their products, so an emphasis on secure markets is always helpful. The flyer below is typical of what ASD has used—at farm stores, equipment dealers, libraries and other venues—to reach a broad group of farmers.

**Growers Wanted!!**

**TO RAISE ORGANIC  
PRODUCE  
FOR LARGE MARKETS**

Tuesday, January 29th  
6:00-8:00 pm  
Washington County Public Library,  
Abingdon, Virginia

Appalachian Harvest is a network of nearly 60 local farmers raising organic produce and free-range eggs, selling to more than 600 supermarkets.

At this meeting you'll learn about:

- Raising organic produce for commercial markets
  - How to become certified organic
  - Markets: What items are needed
- Potential profits from organic production
- How to become part of the Appalachian Harvest Network

For more information contact Phil Blevins with Virginia Cooperative Extension at (276) 676-6203 or Appalachian Sustainable Development at (276) 623-1121 or visit our website [www.asdevelop.org](http://www.asdevelop.org)

Using local media also helps spread the word about the opportunities you are offering.

BHC, Jan 7, 2008

# AGRIC

## Market growth creating more opportunities

**O**n Tuesday, Jan. 29, from 6 to 8 p.m., there will be a public meeting for people considering raising organic produce or free-range eggs for commercial markets.

Sponsored by Appalachian Sustainable Development and Virginia Cooperative Extension, the meeting is free and open to both experienced and new farmers. Those attending will learn the basics



FARM SCENE  
ANTHONY FLACCAVENTO

of organic farming, including the process for becoming certified, and for raising free-range eggs.

Specific market opportunities will be discussed, primarily focused on the large supermarket demand which Appalachian Harvest has secured

for the 2008 season. For more than fifteen years, the market for organic produce and other organic foods has been growing by nearly 20 percent annually. Sales in 2006 exceeded \$10 billion and are expected to reach \$20 billion nationally by 2010. Demand for organic foods in Southwest Virginia and East Tennessee has also grown substantially over the past several years, as reflected in a doubling in Appalachian Harvest sales to supermarkets from 2005 to 2007.

For the 2008 season, Appalachian Harvest has secured commitments from 8 different supermarket chains in Tennessee, Virginia, North and South Carolina, Georgia and Maryland.

**A**ll told, these buyers are requesting 7,000 to 10,000 cases per week of certified organic produce, involving more than two dozen different items. Among the larger sellers in 2007 were grape tomatoes, red slicer tomatoes, bell peppers, zucchini, cucumbers, leaf lettuce, sugar snap peas and eggplant.

According to ASD's marketer, Robin Robbins, "We currently have at least twice as much demand for organic produce as we have supply. So we need many new, dedicated farmers to help meet this demand."

In addition to the organic produce, free-range eggs are also now selling through the Appalachian Harvest System. At present, about 750 dozen eggs are selling each week with a projected demand of 1,000 to 2,000 dozen per week.

In addition to market demand, the community meeting on Jan. 29 will provide participants with a basic understanding of commercial organic production systems, along with a list of upcoming workshops and farm tours throughout the spring.

For more information contact Phil Blevins at the Virginia Cooperative Extension office at (276) 676-6203 or the ASD office at 276.623.1121 or visit our Web site: [www.asdevelop.org](http://www.asdevelop.org).

**ANTHONY FLACCAVENTO** is executive director of Appalachian Sustainable Development in Abingdon. You can reach him at (276) 623-1121 or e-mail him at [ascd@eva.org](mailto:ascd@eva.org).

ASD uses a five-step strategy for grower outreach and recruitment into the *Appalachian Harvest* system.

**Step 1: Farm tours** – beginning the prior year and continuing through the fall. These tours help teach existing farmers new skills, but also help potential growers become more comfortable with new crops or practices, once they see folks they know (or can relate to) having success.

**Step 2: Five to ten community meetings**, beginning late fall and continuing through the winter. These are geographically dispersed, some in people's homes, others in familiar community venues. A short presentation provides people with basic information about the types of crops or products being sought, the market demand, the training and support offered, and how to get started.

**Step 3: "Meet the buyer" gatherings** are similar to the community meetings, but utilize a buyer from a well known supermarket or institution to bring people out (ASD has done this with both regional supermarkets and national chains like Whole Foods).

**Step 4: Use the media**, both to advertise your community meetings and to build broader interest among potential growers. Most local papers are happy to provide this coverage or run your press releases.

**Step 5: One-on-one outreach and word of mouth.** Often current growers in a value chain become great “recruiters” as they see the benefit of increasing the size and reliability of supply.

Keep in mind that many farmers will want to “study on” the possibility of participating in a value chain. In our experience, most farmers take one to three years before they feel ready, so don’t become discouraged if only 10% of farmers who attend outreach meetings actually become involved in the first year.

### **Training and Technical Assistance**

The essence of a strong training and technical assistance (T & TA) program is that it will be technically sound and current, yet “farmer-friendly”. Usually this means that more complex research and comprehensive information need to be condensed into much shorter pieces. In some cases, the language will also change in the process. Regardless, the focus is on **practical application** of information, adapted to the farms, soils, pastures and ecosystem of your particular region.

With the emphasis on sustainable production practices, this information can be more difficult to find from land grant universities and Cooperative Extension, although increasingly there is both interest and expertise there.

ASD uses a four step approach to providing good T & TA. Throughout each element of this training, a **peer-learning** approach is utilized because it is, quite simply, much more effective.

**Step 1:** Gather information, including both academic research and field tested experiences, on the range of subjects your farmers will need to succeed. This may include information on enhancing soil fertility, no-till production, organic pest and disease management, rotational grazing systems, etc. In addition to Land Grants, ATTRA (Appropriate Technology Transfer for Rural America), USDA/SARE, Stockman Grass Farmer, and several other information clearinghouses can be excellent resources.

If you have the capacity or partners with the capacity, it is also helpful to conduct your own field research as a means to expand knowledge and help strengthen relationships with Extension and universities. Over the past three years, ASD has coordinated field trials on three different organic production issues in concert with Virginia Tech, University of Tennessee and Cooperative Extension.





*Allen Straw and Phil Blevins, VA Cooperative Extension, show farmers results of an organic tomato blight trial, undertaken with ASD*

Step 2: Compile the information in a “farmer friendly” form that provides background (and sources for additional reading) but emphasizes practical application. ASD utilizes a Growers Resource Manual that is updated each year.

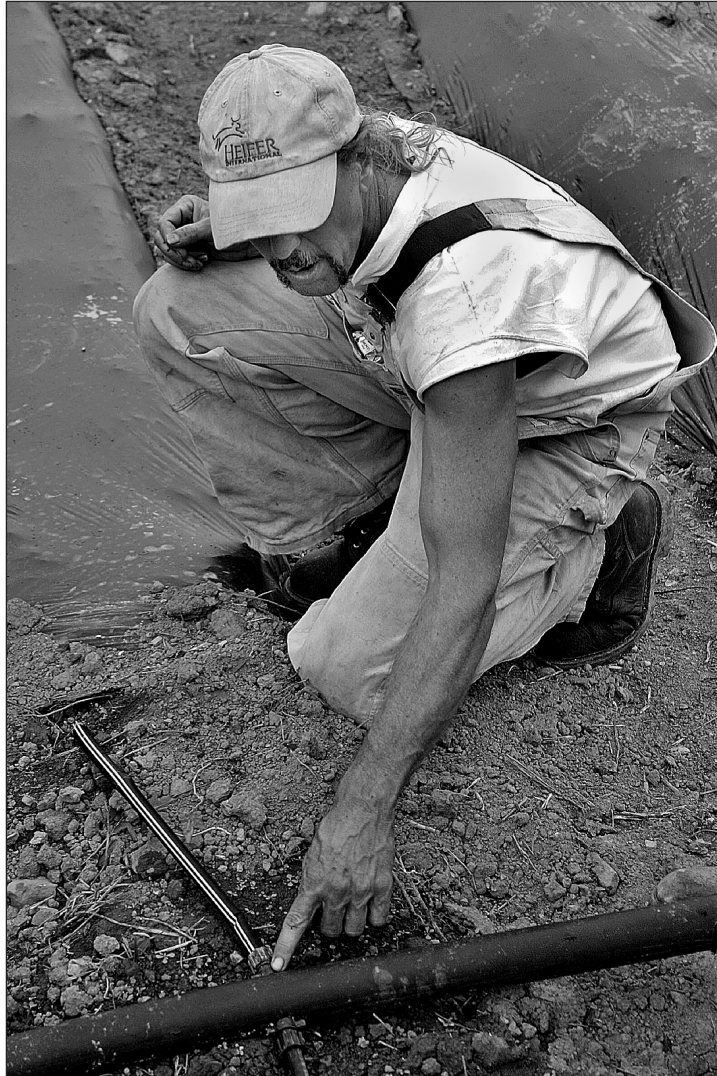
Step 3: Hold practical workshops and farm-based trainings. Where possible, these should be led or co-taught by local farmers, sometimes along with Extension personnel or more experienced farmers from other areas. It is also important to address the broadest range of farmers’ information needs; thus you may need to offer “beginner, intermediate and advanced” levels of training.

Farm tours, in which specific methods, practices or systems are showcased, can be especially effective among farmers, as they make information contained in written materials come alive on a local farm.



*Local farmers participate in a hoop house workshop in Lee County, Virginia.*

Step 4: One-on-one TA and mentoring. However strong your workshops, training and written materials are, there's a good chance that many farmers, especially newer ones, will also need one-on-one TA to help identify problems and solve them. *Appalachian Harvest* has a paid staff person—an experienced local farmer who has received extensive additional education—who helps fill this need, drawing upon the experience of others in the network. We also utilize *farmer-mentors* to extend this capacity and shorten response times for farmers. Two to three of the more experienced growers serve this role, under part-time contracts with ASD. The farmer mentors are provided with additional training and materials (e.g. insect and disease identification guides) that increase their effectiveness.



*Farmer-mentor Gary Van Cott explains drip irrigation*

### **Building a Producers Network**

A “network” is not a cooperative in the organizational or legal sense. It is, however, an effective means to foster cooperation among farmers (and other producers) and in so doing, build the supply one needs to develop a value chain.

Networks form when people come together out of a common need, typically a market opportunity that each producer alone cannot meet. The market may be too large, or the requirements of cooling, packaging, labeling, processing or shipping may involve equipment and facilities they cannot afford. This is the case for the *Appalachian Harvest* grower’s network. From the standpoint of building supply, a producers network, provides two key benefits:

First, it brings farmers together, with some regularity, to plan production, and discuss products and markets, share woes, and celebrate successes. It builds collegiality over competition and helps farmers see that they need one another to succeed.

Secondly, it cultivates peer learning, as farmers share tips, techniques and ideas, and seek information from their colleagues. It also provides a friendly venue through which to deliver workshops, and from which farm tour hosts arise.

Producer networks tend to form organically when a larger-scale market opportunity is presented. Nonetheless, they require attention and coordination if they are going to meet the farmers' needs and provide the reliable supply that value chains demand. This will likely require regular—and useful—meetings that are straight forward, participatory and as short as possible. Meetings of the *Appalachian Harvest* network have evolved to generally follow the following format:

1. Welcome/orientation of new producers
2. 20-30 minute educational session, focused on an issue or challenge farmers face
3. “Business meeting”, primarily focused on markets, products and production planning.

**The producers' network provides the vehicle through which production is planned and coordinated to match (or at least approximate) the secured demand.** ASD utilizes two spreadsheets: a “Buyers Weekly Demand Matrix”, with weekly projections for multiple crops, provides the basis for production plans for every crop (or product). Our “Projected Production Schedule” flows from the demand matrix, allocating production of the various crops among the growers in the network. Through the producers' network, farmers cooperatively “allocate” the production needed to meet the stated demand. Where possible, we strive for 10-20% more production than demand, as experience shows that not every farmer will meet his or her projections.

**“From the standpoint of building supply, a producers network provides two key benefits: First, it brings farmers together, to plan production and discuss products and markets. Secondly, it cultivates peer learning, as farmers share tips, techniques and ideas, and seek information from their colleagues.”**

<i>Appalachian Harvest</i>										
<b>Large Volume Buyer</b>										
<b>Crop Demand and Acreage Requirements by Crop--2006</b>										
Crop	Size	Buyer 1	Buyer 2	Buyer 3	Buyer 4	Totals	Yield Per Acre/wk	Wkly total div. by yield/acre	# of plantings or selling weeks	Total Acres
Sugar Snaps	10#	25	15	10	5	55	85	.6	1	2.5
Early Tomatoes	20#	10	12	25	5	52	50	1.04	2	1.5
Red Slicers	20#	50	2	6	5	63	70	.09	2	2
Carolina Gold	20#	0	50	15	0	65	66	.09	1	3
Red Grape	12 pint flat	100	0	25	25	150	150	1	1	2.5
Sun Sugar	12 pint flat	25	50	50	15	135	142	.9	2	4
Roma	20#	100	10	2	1	113	120	.9	3	10
Heirloom	10#		60	25	25	110	135	.8	4	3.5
Green Bells	1 1/9 bu	60	10	2	0	72	85	.4	4	2.5
Cucumbers	½ bu	45	15	25	10	100	115	.8	4	1.5
Green Beans	Bu		4	8	2	14	23	.6	2	4.5
Watermelons	3 count	25	8	6	10	49	51	.9	1	8.5
Cantaloupes	6 count	25	0	10	5	40	63	.6	1	5.5

*Example of "Buyers Weekly Demand Matrix", used by Appalachian Harvest*

With market demand secured and a producers network in place, the final, critical component of the value chain is the infrastructure and system that links them together, the Processing, Aggregation and Distribution.



*Supermarket displays should call attention to local, sustainably produced items.*

## **VI. PAD – Processing, Aggregation and Distribution—the Final Leg of the Value Chain Stool**

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The lynchpin in any value chain is the infrastructure (and the system) that moves products from farms to markets in the form required by the buyers. This usually involves some combination of **processing, aggregation and distribution, or PAD**. There are four basic types of PAD, designed for four different types of foods:

1. Slaughterhouse – for meats; usually USDA inspected, depending on buyers requirements; may also involve a custom butcher or additional processing for specialty items.
2. Dairy and/or Creamery – for processing and bottling milk, and for making cheese, ice cream and other dairy products.
3. Shared-use or Commercial Kitchen – for a range of preserved foods, from bagged, fresh-cut salads to salsas, jams and baked goods.
4. Produce Packinghouse – for washing, grading, cooling, packaging and shipping produce.

Generally speaking, the processing, cooling, packaging and food safety requirements for each of these require separate facilities, although a commercial kitchen can certainly complement a produce packing house. Whether for meats, dairy, processed foods or produce, PAD infrastructure serves the basic same purpose: Providing market access to substantial numbers of farmers and making farm products “market-ready”. What constitutes “market-ready” is determined by the buyers you choose, their needs and how the food you raise is merchandised.

**PAD infrastructure is especially critical when working with limited resource farmers, as in most of central Appalachia and the southeast, or farmers transitioning from commodity crops to fruits and vegetables or higher value meats.** These farmers typically are unable to purchase the basic equipment involved in PAD (the limited resource growers) or unwilling to take all the risk on a new and untested venture (the commodity growers).

The essential elements of PAD in value chains include:

1. A building
2. Equipment for grading, cutting, processing, cooking, etc.
3. Coolers or freezers (in most cases)
4. Trucks, or some sort of distribution fleet
5. Product differentiation capacity, including labels and handling, special packaging, etc.
6. The ability to meet food safety (GAP, GHP, HACCP) and possibly organic standards
7. The organizational capacity to manage the PAD and integrate market demand with production.

**These elements** may be dispersed among several businesses and organizations or managed by a single entity. Regardless, they **must be closely coordinated and tightly integrated for a successful value chain.**

*Appalachian Harvest approach to PAD*

When Appalachian Sustainable Development launched *Appalachian Harvest* in 2000, there were no local food distributors carrying organic produce, and no facility for packing and grading produce in the region. Experience and research had led us to the conclusion that sizeable markets for organic produce offered the best opportunity for tobacco growers and other traditional farmers seeking a viable crop. As a result, we decided to build our own PAD system. In truth, we had no idea what we were getting ourselves into.

The centerpiece of this infrastructure is the *Appalachian Harvest* Packinghouse. As the following pictures illustrate, our packinghouse started out as a bay in a tobacco barn, on “loan” to us from one of the participating farmers. After a few years we purchased the barn and property (about one acre) and continued retrofitting and adding on to the building, as the number of farmers and the market demand grew. In May, 2007, an electrical fire destroyed the building (just days after a major renovation and expansion had been completed), forcing us into a temporary location for that season. By June of 2008, our new facility was completed and operational.



*Appalachian Harvest began operations in a tobacco barn in Stickleyville, VA to which modifications and additions were added over several years.*



*The fully renovated and expanded Appalachian Harvest packinghouse, April, 2007. It was destroyed by fire the next month.*



*After a season in a temporary facility, the new Appalachian Harvest packinghouse was completed in July, 2008, in Duffield, VA.*





*Internal view of Appalachian Harvest packinghouse.*



*Golden zucchini, washed and labeled*

## **Processing: The first stage**

In a fresh produce operation, the “processing” does not involve chopping, slicing or cooking of items, though these are compatible operations that may be useful in dealing with excess or seconds. The processing function is nevertheless critical to meeting the demands of buyers and getting the best possible price for farmers. There are three sequential steps:

1. *Inspection at the dock* – Farmers in the *Appalachian Harvest* network are trained in quality standards for the produce they grow, including proper picking (size, cleanliness, ripeness), post-harvest handling and Good Agricultural Practices (GAP – more on that later) protocol. When they bring produce to the dock, it is inspected to be sure that the majority meets the standards of a #1 or #2. For new growers particularly, this initial inspection, which involves looking through the boxes or bins, provides an opportunity to improve their quality, to ensure that a higher percentage of their produce is picked at the right size, ripeness or time of day (if it appears limp or shrunken). If a substantial portion of a grower’s produce does not meet the standard, it may be rejected at the dock. **A poor quality batch of produce takes more time and money to grade, and slows down the process for other farmers.**

Farmers receive an invoice for their produce, denoting the type of produce, quantity of boxes or bins, and date of delivery.

2. *Forced air or hydro-cooling to remove field heat* – With the exception of tomatoes and most winter squashes (butternut, acorn, etc.), it is very desirable to remove field heat from produce as quickly as possible. “Field heat” refers to the interior temperature of produce at the time of picking, and is usually close to the ambient temperature over the preceding few hours. This is why early morning picking is strongly encouraged (through not always possible for growers); cucumbers picked at 7:00 a.m. following nighttime temperature of 60 degrees will obviously have less interior heat than those picked late afternoon, following several hours of 85 degree sun. Where morning picking is impossible, growers are encouraged to pick mid to late evening.

*Appalachian Harvest* has adapted a forced air cooling system to remove field heat. Depending on the item and quantity, the produce is placed in a cooler at low temperatures (34 to 38 degrees) and very high humidity (over 90%). A strong fan is then used to blow this cold, moist air through the produce for 15 minutes to one hour, again depending on the item and quantity, until the desired interior temperature is reached. A small number of fruits are poked with a temperature probe to see when the temperature is appropriate. The produce is then moved, either to a standard cooler or directly to the grading line.

Removing field heat extends the shelf life of produce, a critical attribute not only for your buyers and customers, but for your own reputation as well. A shriveled cucumber in a major supermarket with your label on it constitutes bad PR.

3. *Washing, Grading and Labeling – Appalachian Harvest* began with a single grading line, which we used for every type of produce. For several years, we also hand washed or wiped produce as well, a very slow process that you want to get beyond as soon as possible.

Grading is essential if you are going to meet the aesthetic demands of most buyers, especially grocers and supermarkets, since they display your produce for all to see. But **good grading also increases income for farmers, as it enables you to find the highest value for different sizes and shapes of produce.** This is because different buyers have different standards for a “#1”. In cucumbers, for instance, some buyers prefer a smaller cuc, generally a “32 count”, meaning that 32 fill a 20 pound, half bushel box. Others want a 24 count cucumber, which is about 25% larger. Both pay a #1 price (though it will likely be somewhat different), so farmers get top dollar for a wider range of produce. The same holds true for zucchini, summer squash, bell peppers, tomatoes and other items.

Additionally, the grading process allows you to sort out good quality “seconds”, for which substantial, though lower paying markets also exist (see earlier discussion in the Marketing section).

Washing of produce usually occurs at the beginning of the grading line, and allows you to remove small amounts of dirt or dust. **Washing does not replace proper picking or handling by growers, as it will not remove mud or extensive amounts of soil.**

Washing also enables you to better address GAP and food safety standards, as you can introduce a dilute amount of bleach or similar disinfectants (such as Stor Ox) into the injectors of the grading line. Properly done, this both increases the shelf life of the produce, while helping you to operate within both safety and organic standards.

Labeling is the final step of this processing stage. It may or may not be required or expected by your buyers. Along with other point-of-sale materials, labeling helps establish your identity in the market place, and can help consumers feel connected to the farmers who raised their food.

Labeling also enables the stores to “get the ring” i.e. to capture any price premium, for example for local and organic items. It also allows them to track the sales of your products, by item and in total. But labeling can also be expensive, more so in the actual application of labels, than in their production. Think about 40 bell peppers in a box, each labeled; 500 boxes of peppers, every week. And cucumbers, zucchini, tomatoes...It is a substantial cost, the value of which you will need to determine.

### **GAPs and Local Foods**

With the emergence of food system value chains comes an additional challenge: meeting food safety standards, particularly those described in Good Agricultural Practices (GAPs). For many small farmers, becoming GAP certified involves not only burdensome paperwork but high cost. What's more, some of the practices being proposed in related efforts such as the Leafy Green Marketing Association Standards, may unnecessarily restrict farming practices while offering no clear benefits in terms of food safety.

The uncertainty surrounding GAPs has led many grower organizations as well as national groups to begin working towards food safety standard that are reasonable for small to mid-sized farmers and food processors, while focusing upon the most important points in the value chain to enhance the safety of the food consumers eat. At the national level, The Wallace Center Good Food Network has an ongoing learning and discussion group working on food safety issues, a group comprised of growers, aggregators and other local food system leaders. Regionally, similar work is underway within the Maine Organic Farming Association, the Southern Sustainable Agriculture Working Group, and many other regional food system networks.

While issues of public policy on food safety are being debated, it is advisable for leaders of value chain initiatives to begin working with farmers, aggregators and processors to prepare for potential changes in food safety and sanitation requirements. At a minimum, this probably involves four steps: 1) familiarize yourself with the current GAP standards used by larger institutional buyers, 2) get involved with state and national policy debates on food safety, in order to ensure that small farmers and processors are not unnecessarily penalized, 3) once you understand the basic standards, develop an educational process for your growers that enables them to know and follow sensible food safety and sanitation practices, and 4) encourage your farmers, aggregators and processors to document their food handling and sanitation processes.

While these steps do not ensure that your value chain will be able to sell into every market, it will go a long way towards keeping the doors of potential buyers open and building trust with these buyers.

### **Aggregation: The Second Stage**

A weekly order from one of the core *Appalachian Harvest* buyers might involve ten different items and over 1000 total cases of produce. This would be impossible for most smaller, limited resource farmers to fill, even for a single week, let alone every week for a few months. However, **aggregating the produce of several farmers makes this possible**. Aggregation can happen without a packing facility, e.g. through an internet-based farm-to-consumer website. For larger buyers who demand consistency, as well as various packing requirements, aggregation usually happens in and through a packing house.

In addition to meeting the larger volume requirements of most supermarkets or institutional buyers, aggregation can provide both a longer season and some reduction of risk for the organization or business responsible for supply. Utilizing the producers network to

coordinate and manage supply, multiple growers are recruited to raise a specific item such as summer squash. In southwest Virginia, the season allows for three to four plantings of summer squash, more if hoop houses are used for early or later season production. Efforts are made to have roughly equal acreage of summer squash planted on 4 week intervals (squash bears high quality fruit for 3 – 5 weeks), ensuring a steady supply over a longer period. This helps avoid large price cuts that come with a glut of product, while also building both buyer and consumer loyalty to your brand. **Being present in the marketplace for a longer period is needed if people are to become repeat customers.**

Aggregation can also make distribution more cost effective as a full truck costs less per case to transport than one that is half empty.

One of the decisions you'll need to consider once you do decide to aggregate the products of multiple farmers, relates to brand identity. Some groups, like the Oklahoma Food Cooperative, maintain the identity of each individual producer, whether they're selling beans, beef or bread. Consumers – both individuals and chefs – select items from specific producers, using a web-based system that displays what's available and facilitates ordering. Farmers and food entrepreneurs then bring their products to a designated center where volunteers (and a small amount of paid staff) pack orders for individual buyers, drawing from among several producers. Co-op members then pick up their orders at a designated site.

While this system works very well, it is geared for a large number of small buyers – primarily households and some restaurants – and a monthly distribution system. *Appalachian Harvest* sells to a small number of large buyers (primarily), shipping twice per week. It would be virtually impossible to maintain individual farm identities for 60+ farmers in hundreds of markets. Instead, it has worked to build a brand inextricably linked to those farmers, their farming methods and our region.

### **Distribution: The Third Stage**

An effective distribution system is critical to the success of any value chain. Often, it is one of the most expensive components as well, particularly for highly perishable items (like produce) that must be shipped frequently. It is possible to cover your costs, even generate a small amount of net revenue, with careful planning of delivery routes and a reliable supply of product.

The single most important determinant of net revenue in shipping is **whether or not your truck is full**. Traveling with a full or nearly full truck is a challenge, especially during the early and late parts of the season, when produce may be less available. Plan your sales and delivery accordingly, focusing on closer buyers during times when supply is lean.

Although it varies, most food shippers charge a per-case delivery fee, which represents the primary means to offset costs (“Backhauling” products for companies is the other, wherein you bring their product back to your area, charging a fee for that service, rather

than returning with an empty truck.) The more cases you can put on the truck, the more revenue you generate. Delivery fees vary widely, with cross-country produce often tagged with a \$5-\$7 per-case fee. A local or regional food distribution system has, potentially, a competitive advantage here. You can charge much less, making the total cost of your items—what the buyers call the “delivered price”—more competitive. *Appalachian Harvest’s* delivery fees vary with fuel cost and miles shipped. For 2009, they ranged from \$2-\$3 per case.

The other factors in determining shipping revenue are the size of the truck and the relative bulk of the product. A 4’x 4’ pallet holds 80 flats of grape tomatoes, 40 cases of bell peppers, and only 25 of cabbage or cantaloupes. Because it is not feasible to charge different per-case fees for every product, you must be careful to consider weight and bulk in planning your deliveries, and before that, your product selection.

Delivery costs include:

- Rental or lease costs on vehicle, or
- Loan payments, if you purchase the vehicle, and maintenance costs
- Fuel and oil
- Road and vehicle taxes and fees
- Insurance

Determining your cost for different delivery routes involves calculating both variable costs—fuel and labor—and your fixed costs of loan payments (or lease), insurance and taxes and fees. Maintenance costs are also variable, but since they are unpredictable, can be assigned an average amount per year (based on experience). Maintenance and fixed costs are then divided by the number of deliveries made (or projected to be made) in a year. These are then added to the variable costs, as in the following example:

<b>Annual fixed costs for a 24’ refrigerated delivery vehicle, 2009</b>	
Loan payments (based on a 5 year loan and a used vehicle):	\$7,000
Maintenance	\$1,500
Taxes and fees	\$1,500
Vehicle insurance	\$2,000
Total annual fixed costs:	\$12,000
Number of deliveries (3 / week x 20 weeks)	60
Fixed costs/deliver (\$12,000 ÷ 60)	\$200
<b>Variable costs, per delivery:</b>	
Labor (based on \$25/hr for 12 hours)	\$300
Fuel (based on 600 mile round trip, 10 mpg, \$3/gal).	\$180
Misc. – tolls, meals, etc.	\$70
Variable costs per delivery	\$550
Total cost/delivery	\$750

A 24' truck can hold 10 (sometimes 12) pallets, each of which can hold from 25 to 80 cases. An average of 50 cases/pallet or 500/truckload is a reasonable basis for estimate. In this instance if you charged a \$2/box delivery fee, it would take 375 boxes (approximately 8 full pallets) to break even.

Beyond costs and revenues, the other key distribution considerations include: proper refrigeration temperatures (different for tomatoes than most other crops); tight, secure wrapping of pallets to preclude shifting and falling of boxes; proper loading, so that the last delivery goes on first; dock timing, to ensure that your driver arrives at the dock(s) within their receiving hours; driver training; and following FHSA (Federal Highway Safety Administration) rules, particularly regarding weight limits and limits on driver hours.

There's no avoiding the fact that distribution and delivery is a constant challenge. If you can work out a contract with a nearby distribution company that is reasonably priced, and assures that your food will be handed with care and reach your markets on time, you should seriously consider this.

## **VII. Summary: Moving Forward with Healthy Food Systems**

In many respects it is “the best of times and the worst of times” for healthy food system initiatives. The unparalleled recent growth in farmers markets and other local foods efforts, combined with the nearly two decades of steady growth in the organic market, have created considerable demand and generally better prices for sustainably produced foods around the nation. Recent efforts to increase purchasing by colleges and universities as well as public schools are driving additional demand in virtually every region of the country. What's more, research, education and training and technical support for organic and sustainable production practices, or for development of local food system initiatives is more widely available than ever before. The 2008 Farm Bill, though still heavily weighted towards a small number of commodity crops, included significant increases in funding for several local food system and sustainable agriculture programs. Leaders of regional value chains should familiarize themselves with the grant and local programs available through USDA.

At the state level, there has been progress as well, including legislation to encourage procurement of local foods in public school systems (for example in Tennessee, Vermont and elsewhere) and increased resources devoted to healthy local foods within state departments of agriculture, cooperative extension and land grant universities.

On the other hand, substantial barriers and challenges still exist for farmers and farm and food advocates working to promote healthy local food systems. Among these are:

- Unrealistic food safety requirements—though recent legislation acknowledged the distinct challenge faced by small farmers, there nevertheless has been a broad movement among larger institutional and retail buyers towards requiring farms to be GAP audited or to meet other food safety requirements. Some of these are probably unnecessary, perhaps even counter productive, and farm and food advocates must take a role in shaping these policies going forward.
- “An industrial food mindset” still pervasive among many retail buyers. This means an expectation of uniformity and aesthetic perfection that is difficult for small to medium sized farmers to meet, and which generates food waste. Most buyers state that they are just “giving the consumers what they want”. It is probably up to healthy food system advocates to then help change some of these perceptions around how food should look.
- An expectation that food should be cheap. Clearly, there has been progress in this arena, but it is primarily limited to shoppers at farmers markets, at CSAs and at smaller venues. When food reaches the grocery store shelf, the school cafeteria or the college dining hall, there are real and perceived pressures to keep costs quite low. Making good quality, healthy food affordable for the full spectrum of our community is clearly a goal of a value chain. However, many of us who can afford to pay more for food have simply become accustomed to its ubiquitous availability at a relatively low price.
- The aging of the farm population, now approaching 58 years old on average, presents both a critical challenge and an opportunity. The emergence of strong value chains that help make farming economically viable will play an important role in keeping farmers on the land. These same value chains, particularly if they promote the values of ecological sustainability and healthy foods, also appear to be an effective way to entice more young people into farming.

Forty years ago, Americans on average spent about 6% of their household income on healthcare and about 17% on food. That has now reversed, with Americans spending over 16% on healthcare and just over 9% on food. At the same time, obesity and diabetes rates are rising dramatically among all segments of the population, especially young people and lower income families. While there are surely many reasons for the staggering costs of healthcare and the relatively poor level of health for our nation overall, some of it is almost surely tied to our eating habits. Significantly changing those eating habits for large numbers of Americans is an urgent matter. Building healthy food system value chains will not solve our health and healthcare problems, but they will substantially increase the quantity, accessibility and affordability of healthy food for millions of people. In so doing, it will also help to sustain and expand family farms, promote sustainable agriculture and help rejuvenate the rural landscape. Ultimately, this is the goal of healthy food system value chain work.



## **Resources For Building Healthy Food System Value Chains**

The following organizations and individuals have a range of expertise in one or more dimensions of building healthy food systems and the value chains necessary to expand them. This list is not intended to be comprehensive, but should help the reader get started.

### **Overall Development of Food System Value Chains**

#### Appalachian Sustainable Development

Contact: Kathlyn Terry  
P.O. Box 2481  
Abingdon, VA 24211  
Phone: (276) 623-1121  
Fax: (276) 623-1353  
Email: [asd@asdevelop.org](mailto:asd@asdevelop.org)  
Website: [www.asdevelop.org](http://www.asdevelop.org)

#### The Wallace Center at Winrock International

Contact: John Fisk  
1621 North Kent St., Suite 1200  
Arlington, VA 22209-2134  
Phone: 703.879.6556  
Fax: 703.525.1744  
Email: [jfisk@winrock.org](mailto:jfisk@winrock.org)  
Website: [www.winrock.org/wallace](http://www.winrock.org/wallace)

#### CADE (Center for Agriculture Development & Entrepreneurship)

Chris Harmon, Executive Director  
25 Elm Street  
Oneonta, NY 13820  
Tel: (607) 433-2545  
Cell: (607) 435-1685  
Website: [www.cadefarms.org](http://www.cadefarms.org)

#### ALBA (Agriculture and Land Based Training Association)

Rural Development Center, Headquarters  
P.O. Box 6264  
Salinas, CA 93912  
Phone: (831) 758-1469  
Website: [www.albafarmers.org](http://www.albafarmers.org)

#### SCALE, Inc.

(Sequestering Carbon, Accelerating Local Economies)  
Anthony Flaccavento  
276-628-4727  
Email: [flaccavento@ruralscale.com](mailto:flaccavento@ruralscale.com)  
Website: [www.ruralscale.com](http://www.ruralscale.com)

#### Iowa State University

The Leopold Center for Sustainable Agriculture  
209 Curtiss Hall  
Iowa State University  
Ames, Iowa 50011-1050  
Phone: (515) 294-1854  
Fax: (515) 294-9696  
Website: [www.leopold.iastate.edu](http://www.leopold.iastate.edu)

#### Good Natured Family Farms

Contact: Diana Endicott  
Email: [Diana@goodnatured.net](mailto:Diana@goodnatured.net)  
Website: [www.goodnatured.net](http://www.goodnatured.net)  
Phone: (620) 939-4933

#### Red Tomato

Contact: Michael Rozyne  
1033 Turnpike Street  
Canton, MA 02021  
Phone: 781-575-8911  
Fax: 781-575-8915  
Email: [info@redtomato.org](mailto:info@redtomato.org)  
Website: [www.redtomato.org](http://www.redtomato.org)

## **Resources on Organic and Sustainable Farming Practices**

#### ATTRA - National Sustainable Agriculture Information Service

P.O. Box 3657  
Fayetteville, AR 72702  
800-346-9140 (English)

#### Appalachian Sustainable Development

Contact: Kathlyn Terry  
P.O. Box 2481  
Abingdon, VA 24211  
Phone: (276) 623-1121  
Fax: (276) 623-1353  
Email: [asd@asdevelop.org](mailto:asd@asdevelop.org)  
Website: [www.asdevelop.org](http://www.asdevelop.org)

#### USDA - SARE

(Sustainable Agriculture, Research and Education)  
National Office  
USDA-CSREES  
Stop 2223  
1400 Independence Ave. SW  
Washington, D.C. 20250-2223  
Fax: (202) 720-6071  
Jeff Jorgan, Southern Region SARE Director  
Rob Hedberg – Acting SARE Director  
(202) 720-5384  
[rhedberg@csrees.usda.gov](mailto:rhedberg@csrees.usda.gov)

SSAWG (Southern Sustainable Agriculture Working Group)  
Jim Lukens  
P.O. Box 1552  
Fayetteville, AR 72702  
Phone: 479-422-5831  
Email: [jlukens@ssawg.org](mailto:jlukens@ssawg.org)

OFRF (The Organic Farming Research Foundation)  
P.O. Box 440  
Santa Cruz, CA 95061  
Phone: (831) 426-6606  
Fax: (831) 426-6670  
Email: [info@ofrf.org](mailto:info@ofrf.org)  
Website: [www.ofrf.org](http://www.ofrf.org)

North Carolina State University  
College for Agriculture and Life Sciences  
Department of Horticulture Science  
Contact: Nancy Creamer  
224 Kilgore Hall, Box 7609  
Raleigh, NC 27695-7609  
Email: [nancy\\_creamer@ncsu.edu](mailto:nancy_creamer@ncsu.edu)  
Website: <http://www.cals.ncsu.edu>

EatWild.com  
P.O. Box 7321  
Tacoma, WA 98417  
Email: [info2009@eatwild.com](mailto:info2009@eatwild.com)

*Note: Many states or regions have organic farming associations which can help with information and resources on production and market of organic foods.*

### **Information on Branding, Marketing and Certification for Healthy Local Foods**

Appalachian Sustainable Agriculture Project  
729 Haywood Rd. #3  
Asheville, NC 28806  
Charlie Jackson, Executive Director  
Phone: 828-236-1282 ext. 105

The Food Alliance  
Contact: Scott Exo  
1829 NE Alberta, Suite 5  
Portland, OR 97211  
Phone: (503) 493-1066  
Fax: (503) 493-1069  
Email: [info@foodalliance.org](mailto:info@foodalliance.org)  
Website: [www.foodalliance.org](http://www.foodalliance.org)

The Organic Consumers Association  
6771 South Silver Hill Dr.  
Finland, MN 55603  
Phone: (218) 226-4164  
Fax: (218) 353-7652  
Website: [www.organicconsumers.org](http://www.organicconsumers.org)

USDA - National Organic Program  
American Grassfed Association  
P.O. Box 461090  
Denver, CO 80246  
Phone: (877) 774-7277  
Fax: (877) 774-7277  
Email: [aga@americangrassfed.org](mailto:aga@americangrassfed.org)  
Website: [www.americangrassfed.org](http://www.americangrassfed.org)

### **Building Networks, Cooperatives and Community Assets**

BALLE  
(The Business Alliance for Local, Living Economies)  
Contact: Michael Long  
305 Flora Street, Suite E  
Bellingham, WA 98225  
Phone: (360) 746-0840  
Email: [michelle@livingeconomies.org](mailto:michelle@livingeconomies.org)  
Website: [www.livingeconomies.org](http://www.livingeconomies.org)

ACENet (Appalachian Center for Economic Networks)  
Contact: Angie Hawk Maiden  
94 Columbus Road  
Athens, OH 45701  
Phone: (740) 592-3854  
Email: [angiec@acenetworks.org](mailto:angiec@acenetworks.org)  
Website: [www.acenetworks.org](http://www.acenetworks.org)

Rural Action  
Michelle Decker, Executive Director  
(740) 767-4938  
[michelle@ruralaction.org](mailto:michelle@ruralaction.org)  
[www.ruralaction.org](http://www.ruralaction.org)

The Wallace Center  
Good Food Network  
(703) 525-9430

Center for Economic Options  
Pam Curry, Executive Director  
910 Quarrier St. Suite 206  
[info@economicoptions.org](mailto:info@economicoptions.org)  
(304) 345-1298

<http://ngfn.org>

## Urban Farming

Growing Power, Inc.  
Contact: Will Allen  
5500 W. Silver Spring Drive  
Milwaukee, Wisconsin 53218  
Phone: (414) 527-1546  
Fax: (414) 527-1908  
Email: [staff@growingpower.org](mailto:staff@growingpower.org)

White Dog Community Enterprises  
Contact: Judy Wick  
1315 Walnut Street, Suite 522  
Philadelphia, PA 19107  
Phone: (215) 386-5211  
Email: [info@whitedog.com](mailto:info@whitedog.com)  
Website: [www.whitedogcafeoundation.org](http://www.whitedogcafeoundation.org)

Lynchburg Grows  
1339 Englewood St.  
Lynchburg, VA 24506  
(434) 846-5665  
Michael Van Ness, Executive Director  
[Michaelv@lynchburggrows.org](mailto:Michaelv@lynchburggrows.org)  
[www.lynchburggrows.org](http://www.lynchburggrows.org)

Intervale  
180 Intervale Rd.  
Burlington, VT 05401  
(802) 658-8075  
[www.intervale.org](http://www.intervale.org)

## Additional Resources on Community Economic Development, Climate Change and the Environment

Berry, Wendell. Another Turn of the Crank. Washington, D.C.: Counterpoint, 1995.

Berry, Wendell. Home Economics. New York.: North Point Press, 1987.

Berry, Wendell. Sex, Economy, Freedom and Community. New York.: Random House, 1992.

Berry, Wendell. The Gift of Good Land. New York.: North Point Press, 1982.

McKibben, Bill. Deep Economy: The Wealth of Communities and the Durable Future. New York: Henry Holt & Co., 2007.

Heinburg, Richard. Peak Everything: Waking Up to the Century of Declines. Canada: New Society Publishers, 2007.

Values-Based Food Supply Chains: Strategies for Agri-Food Enterprises-of-the-Middle  
[gwsteven@wisc.edu](mailto:gwsteven@wisc.edu)  
[rspirog@iastate.edu](mailto:rspirog@iastate.edu)  
[www.agofthemiddle.org](http://www.agofthemiddle.org)

The Ford Foundation  
Wayne Fawbush, Program Officer  
320 East 43rd St.  
New York, NY 10017  
[w.fawbush@fordfound.org](mailto:w.fawbush@fordfound.org)  
212 573-4918

## Resources on Public Policy and Advocacy

The Community Food Security Coalition  
3830 SE Division St.  
Portland, OR 97202  
(503) 954-2970  
[Aleta@foodsecurity.org](mailto:Aleta@foodsecurity.org)

The National Sustainable Agriculture Coalition  
110 Maryland Ave. NE  
Washington, DC 20002  
(202) 547-5754  
Aimee Witteman, Executive Director  
[awitteman@sustainableagriculture.net](mailto:awitteman@sustainableagriculture.net)

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Copies of this document are available for  
\$15.00 (U.S.) each, plus shipping & handling,  
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SCALE, Inc.  
18157 Wyndale Road  
Abingdon, VA 24210

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www.ruralscale.com

(or)

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