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Value-Added Ag-Based Economic Development: A Panacea or False Promise?

Part One of a Two-Part Companion Series: What is Value-Added
and How Should We Study It?

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Introduction

This paper is part one of a two-part companion series on Value-Added Ag-Based Economic Development. In this paper, we explore the confusion caused by the application of the term “value added” to a wide range of activities that may have very different characteristics. We also describe the difficulty of deciphering household income attributed to value-added activities and construct a framework for understanding the range and characteristics of economic activities of the farm household outside traditional commodity production. In the second paper, we outline what policymakers and others hope to achieve through value-added agricultural development and examine whether there is any theoretical or empirical basis for such expectations.

Value-added a Panacea?

The most enduring subject in the field of American agriculture deals with changes in the structure of the industry and the demise of the small family farm. Any comprehensive assessment of the literature on this topic would tally citations well into the hundreds if not thousands. As just one useful example, Ahearn et. al (2002) cite several key USDA publications on farm structure in recent years, along with studies by the Office of Technology Assessment (OTA) and the US Senate that date to the 1980s. The Ahearn paper also uses the standard reference points for such discussions: changes in numbers and sizes of farms. Students and casual observers of American agriculture alike know the story by heart. Namely, the number of farms accounting for the largest share of U.S. commodity production continues a long-term secular decline that dates to the turn of the 20th century and the closure of the American western frontier. Further, as the US economy grows and develops, this trend towards concentration of commodity production relentlessly leads to a bimodal structure in agriculture, consisting of relatively few large farms accounting for the majority of production and many small farms that remain in agriculture but rely increasingly on non-farm sources of income to support the family household. This bi-modality tends to be dramatic, in part, because the Federal government’s definition of a farm, unchanged for more than a quarter century, has an extremely low threshold—annual sales need only be \$1,000 to be counted as a farm. Most would agree that this threshold does little more than keep entities with trivial farm interests in play, perhaps largely for political purposes.

In light of these persistent trends, successive generations of American farmers have received the sage advice that they need to “get big or get out.” Theoretical work also points to the economic forces squeezing farmers out of agriculture (Blank 2001; Young

and Hobs 2002). Recently, however, a different view has emerged to suggest a third option: struggling farmers (by implication those with smaller entities and limited cash flow) can adopt a survival strategy generically called the “value-added approach” (see for example, Mishra and Sandretto 2002; Start et.al 2002). The argument typically goes like this: **Because of** _____(here there follows a list of factors detrimental to commodity markets, including but not limited to: declining grain prices, cyclical livestock prices, high input costs, excessive regulatory burden, changing consumer preferences, intense national and international competition, and rapidly appreciating land prices) **farmers should pursue** _____(here there follows various descriptions of alternatives to commodity markets, including but not limited to: niche marketing, value-added production, specialty commodities, identity-preserved products, vertically aligned supply chains.)

Policy-makers at both the state and Federal levels have bought into this approach, funding numerous programs dedicated to enhancing farm income with techniques referred to as value-added. The USDA has cranked up the rhetoric and increased its effort in the value-added arena during the 1990s, especially for programs that target small farms. Value-added production is one of the organizing principles for dozens of initiatives for several USDA agencies. A query of USDA’s website site yields well over 1,000 references to value-added food and agriculture. Recently, the Federal commitment to encouraging such initiatives are enshrined in the 2002 “Farm Bill”. This legislation, the Farm Security and Rural Investment Act of 2002, authorized a Value Added Agricultural Product Market Development Grants program (Sub-title E, Sec. 6401).

Any funding eventually appropriated by Congress for this program will only complement extensive efforts at the state level in state departments of agriculture. The state-level focus on value-added agriculture is clearly exemplified by the policy stance of the [National Association of State Departments of Agriculture \(NASDA\)](#), which has as its mission the support and promotion of the American agriculture industry. A NASDA policy statement released during the debate on the 2002 Farm Bill emphasizes a role for value added farming strategies, both for smaller, emergent farm businesses and larger producers who want to target export markets; along with support for such efforts for individual businesses, NASDA touts the likely benefits to be had by encouraging alliances and cooperation to achieve increased market share in processed food markets (NASDA, 2002).

In New York State, the Department of Agriculture and Markets has administrative authority over an Agricultural Development Program, which according to a press release on October 7, 1999 was created in 1999 to help “farmers refine specialty niches” and “improve the marketing, processing, storing and manufacturing of agricultural products.” The underlying agenda for most such legislation is to keep family farms in farming and to create or retain jobs through ag-based economic development. Consider Governor Pataki’s comment in 1999: “As we enter the new millennium, this program will help create more jobs through the expansion and development of agriculture-related businesses and will preserve New York’s largest industry as an indispensable part of our future.” (For more details, see website for Department of Agriculture and Markets).

Thinking of this nature does not necessarily follow political boundaries. A recent inventory of 11 of New York's competitor states and two Canadian provinces identified nearly 130 companion programs dedicated to ag-based development; all, to one degree or another, incorporate thinking about prospects for new value-added farm and food production (Bills 2001b).

The value-added approach, on its surface, sounds too good to be true. More money from the food value chain into farmer's hands, freedom from the tyranny of commodity prices, more jobs for rural communities – why didn't we think of this before? Reality, however, is more complicated. The simplicity and appeal of the rhetoric has clouded more complex questions, such as:

- What activities should be labeled value-added?
- Will such efforts necessarily lead to profits?
- Who ultimately benefits when farmers move out of commodity marketing and towards niche marketing?
- Is there any empirical evidence to show that value-added strategies will lead to positive developments in the physical setting and economic landscapes of rural communities?

The working assumption seems to imply that if only farmers, or nonfarmers harboring desires for a farm business start-up, would lift their heads, become more entrepreneurial, and shift their attention to niche markets, the "small farm income problem" would disappear. In reality however, the gains from value-added agriculture are not well documented. There is a growing body of anecdotal evidence of success based on case studies (see, for example Born 2001) but no large scale study exists to document how value-added activities impact incomes of small farms, or larger ones for that matter. In fact, there is even debate and confusion about what the term "value added" really means.

Skeptics occasionally interrupt the hype and promise of value-added agriculture. Consider, for example, the questions raised by Cheryl Tevis, Editor of Farm Issues (2001) in an article criticizing value-added as the new buzzword for the millennium. She discusses value-added enterprises involving processing and biotechnology and asks: "Once these products are fully integrated into the marketplace, does this mean a new value-added enterprise for family producers?" She goes on to raise additional questions about farmers' roles in such ventures (as a partner? as hired labor?) and whether there are truly beneficial spillover effects from value-added activities to rural economic communities.

What is the Problem?

Clearly there is a need for a more meaningful discussion of ag-based development and value-added strategies in order to have a more realistic idea of its impact on farm family households and the rural economy. In this paper, we argue that value-added opportunities are not all created equal and that public policies should not simply create false hope and/or fashion incentives that push producers blindly into new markets. Although the stated goal of most value-added agriculture policy is to improve farm

family incomes, in the worst case scenario, such policies may be encouraging producers to skip over the needed strategic assessment of value-added opportunities and to enter highly risky business ventures without prospects of profitability. The end result may even be to jeopardize the financial future of the family business, or to encourage poor decision-making about the use of public money to support farm and farming programs.

The arguments we present point to two discouraging conclusions:

- The term value-added is now overworked and routinely applied to a wide range of activities that are often dissimilar in terms of resource requirements and risk profiles.
- Regardless of how “value added” is defined, current sources of data on farms and farm households do not feature the necessary unit of observation or have the required level detail needed to evaluate how value added activities are impacting farm businesses and rural communities.

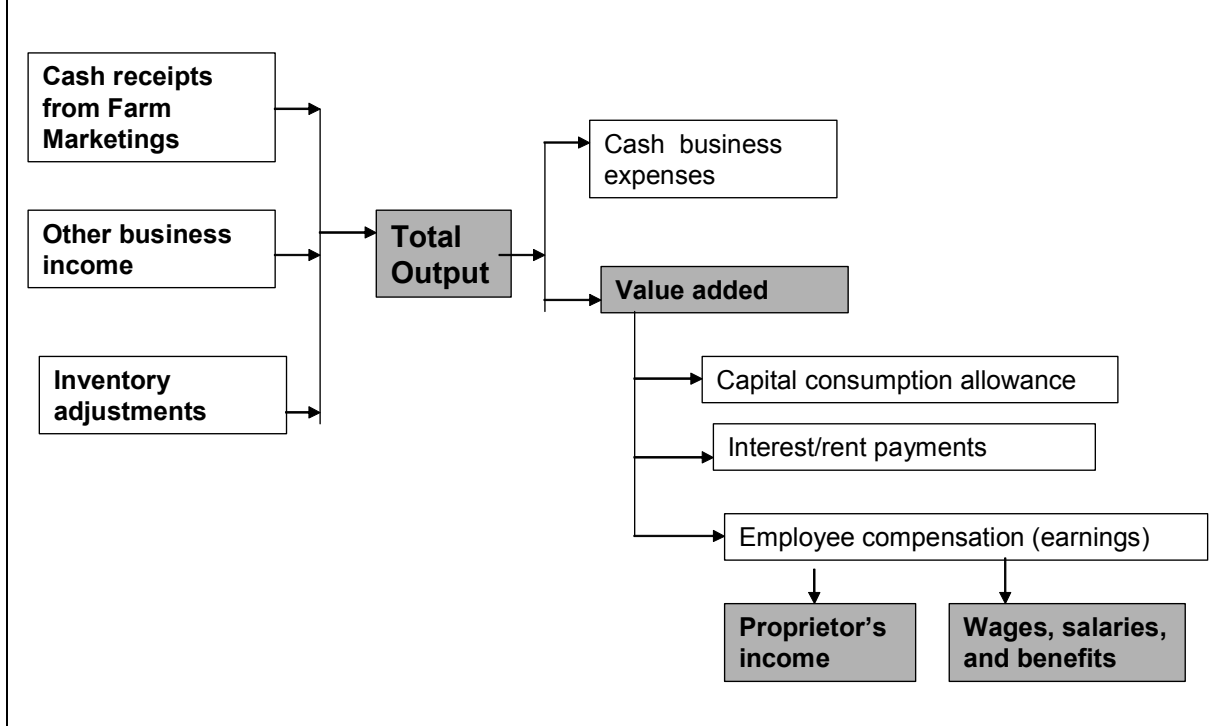
What Does Value-Added Mean and How Much of It Do We Have?

The term value added is used liberally throughout discussions of economic development and small farms, but the meaning is often shaded differently depending on the focus and context. As Eathington, et al. (2001) point out in their study of Iowa’s agricultural processing industries, “Many different groups lay claim to the term “value-added agriculture” for political and promotional reasons, but there is a persistent absence of clarity in terms of just what value-added agriculture is and who receives the value.”

A starting point is to consider the accounting term “value added”. Everyone in the economy who handles a product and then sells it is considered to be “adding value”. Indeed, value-added is the way firms, states, regions, and whole nations keep score when gathering income for businesses and, ultimately, households. To illustrate for the farm commodity production sector, Figure 1 shows a stylized schematic of how value-added is calculated for entities with USDA-defined farming interests. On the income side, arbitrarily defined commodity sales (cash receipts from farm marketings), collateral receipts deemed to be farm-related (denoted as other business income in Figure 1), and any inventory adjustments are taken into account. It is absolutely critical to note that “other business income” is a misnomer because the category excludes any receipts gathered by the farm operator or other members of the farm household if such receipts are defined as “nonfarm”. An identical accounting approach is followed on the expense side of the ledger, with a strict focus on farm-related outlays. As we emphasize below, the layering of “farm” and “nonfarm” income in households with farming interests is more often than not the very essence of value added agriculture.

The accounting logic shown in Figure 1 applies with equal force to a single business establishment (e.g., a farm, a factory, a hardware store) or the aggregate of all business establishments in an industrial sector, a county, a state, or a nation. Indeed, the measurement of all values added for all firms or establishments is the private sector’s contribution to the nation’s gross domestic product (GDP).

Figure 1. Calculation of total output, value added, and proprietor's (net business) income



Source: Bills, 2001b

Measures of GDP disaggregated by industrial sector at the state level tell the story of value-added in farm and food production statewide. These data are shown in Figure 2 for those industrial sectors we chose to define as agriculture (farms, agricultural services, and food manufacturing) for the purposed of this discussion. Clearly, as stressed above with distinctions between farm and nonfarm income, the value-added concept does not take on full meaning until “nonfarm” production downstream from the farm gate is taken into account. We arbitrarily reference establishments classified as agricultural services and food manufacturing here, while acknowledging that many models for growing farm businesses necessarily must branch into additional “nonfarm” lines of enterprise, such as wholesaling, retailing, or transportation. This diversification makes farms into multiproduct firms, as owners and managers of businesses with farming interests mix and match new enterprises with traditional lines of commodity production in order to support growth. In this way, for example, the dairyman becomes a food manufacturer when fluid milk is converted to yogurt and, perhaps, a wholesaler/retailer if the yogurt is distributed by the farm operator. The farm to firm transition illustrated by this example is in step with much current thinking on proactive value added effort by farm families.

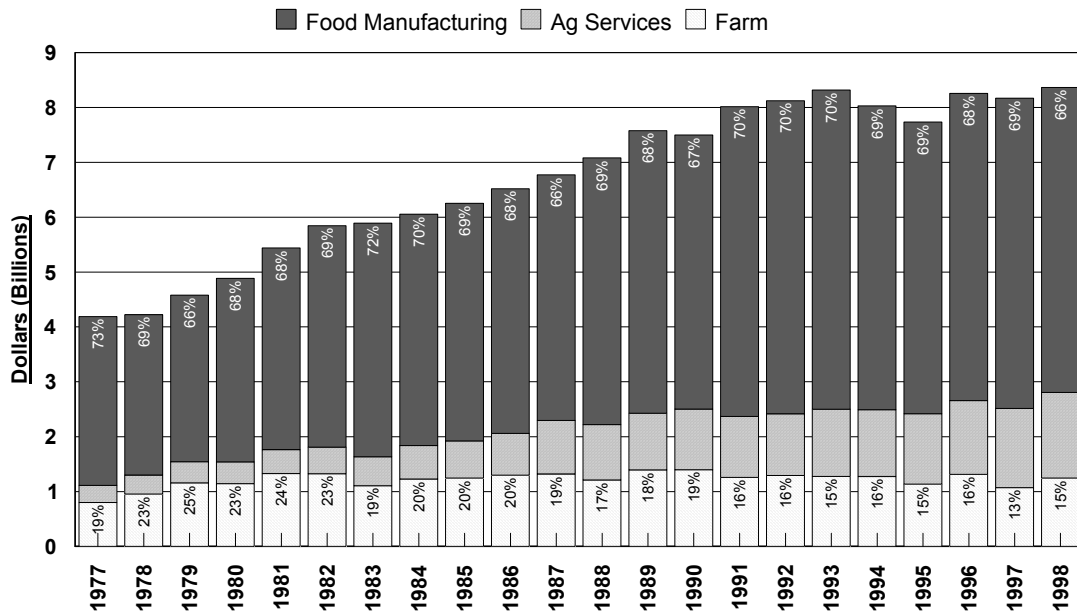
The trend data for New York State show that value added originating in farming (due to commodity sales and “other business income” counted by Federal statisticians as demonstrated in Figure 1) has remained relatively stable, exhibiting only a very slight upward trend in current dollar terms since the late 1970s.¹ In sharp contrast, value added in agricultural services has increased systematically in recent decades and presently exceeds the value added in production agriculture. This surprising result suggests that, as in the wider nonfarm economy, activities in New York’s food and agriculture sectors are transitioning away from industries that are commodity-based and towards those that are service-based.²

Value added in food manufacturing has increased precipitously since the mid-1970s and presently stands at about \$5.5 billion, up from just over \$3 billion in 1977. In current dollar terms, the value added in these three sectors has increased from more than \$4 billion per year to more than \$8 billion over the twenty-year interval 1977-98.

¹ Trends in New York State mirror trends in competitor states to some degree; see Bills, 2001a for the relevant comparisons.

² A counterpoint is that, once again, Federal statistics are out of step with modern food and agriculture and make the term “agricultural services” a misnomer that leads to yet another source of confusion. Namely, under Federal data gathering methodology and definitions, agricultural services include veterinary and other animal services. Today, as in years past, some recipients of these services are commercial livestock and poultry producers. However, perhaps the larger class of recipients are owners of sport and companion animals. The latter not only includes equine owners but also a variety of companion animal and avian species. A second major category of agricultural services relates to landscape, lawn, garden, and allied services. Many of these services, indeed the bulk of them, are provided to nonfarm clients, but often showcase the connections between New York’s “green industries” and allied services. On the other hand, The Federal definition of agricultural services is very narrow in the sense that many lines of economic activity generally thought of in terms of “service” to agriculture (e.g., marketing and processing of raw farm commodities, their transport from the farm, financial and credit services, machinery repair) are excluded from the Federal classification of “agricultural services”. Instead, these marketing and processing services fall into broader categories that cover suppliers of production/service inputs to both farm and nonfarm customers. For example, commercial banking is not classified as a farm service even though a component of the banking business is directed to farm clients. There simply is no convenient way to segment and showcase the farm component of businesses purveying goods and services to farm customers. Unfortunately, this challenge for accurate descriptions of farm input services is worsening over time as local farm service firms dwindle in number or diversify their businesses to attract nonfarm customers.

Figure 2. Value Added Originating in Food and Agriculture, New York, 1977-98



Source: US Dept. of Commerce, Bureau of Economic Analysis.

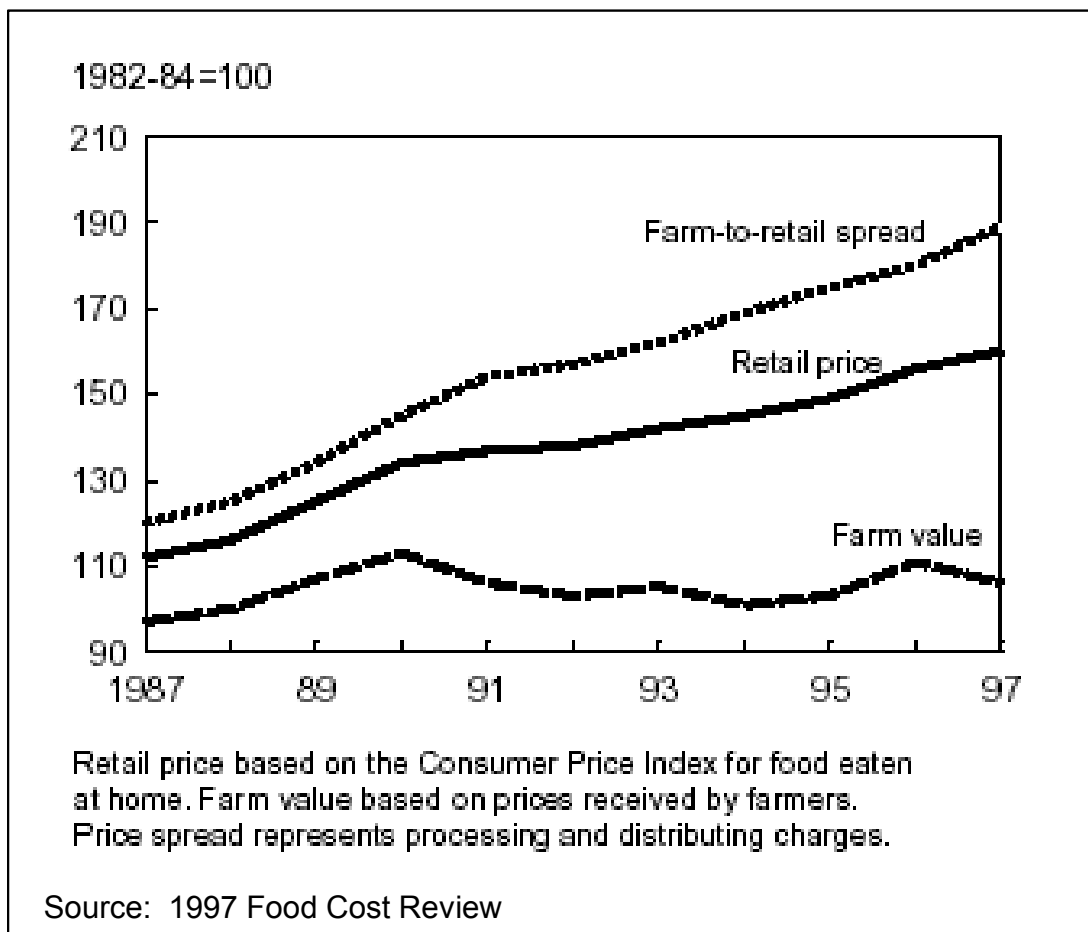
Although the overview of food and agriculture discussed above is based on federal data and based on standard accounting terms, it may not convey what small farm advocates and others mean when they use the term “value-added” in relation to commodities. While successful (profitable) commodity production adds value to a farm business and the rural community, in policy discussions the expression “value-added” is constructed around more than commodity production. Consider, for example, two entries related to the term value-added [our emphasis indicated in bold] in the on-line glossary used by the U. S. House Committee on Agriculture:

1. **Value-added agriculture** — A concept that has gained currency in the small farm policy debate, in response to the **concern** that the farm value of the consumer food dollar continues to decrease (which, some small farm advocates contend, is due to the excessive profit-taking by processors and retailers). **Value added agriculture might be any means to capture a larger share of the consumer food dollar by farmers.** Examples include direct marketing; farmer ownership of processing facilities; and producing farm products with a higher intrinsic value (such as identity-preserved grains, organic produce, free-range chickens; etc.), for which **buyers are willing to pay a higher price than for more traditional farm commodities.**
2. **Value-added products** — In general, products that have **increased in value because of processing**; such products include wheat flour and soybean oil. Livestock are considered value added products because they have increased the value of pasture and feed grains going into them. The terms value-added and high-value are often used synonymously.

These definitions hint at unfair treatment of the farmer regarding his/her share of the consumer dollar. The implied resentment over the farmer's small share has its roots in the situation pictured in Figure 3, showing the trends in commodity and retail prices since 1987. The graph tells the story of how relatively stable (or declining) commodity prices, combined with increases in total food expenditures, have led to an expanding farm-retail spread which, by implication, flows to non-farm sources. Ironically, this ignores any successful efforts by farmers to engage value added production by complementing commodity production with allied services, manufacturing, wholesaling, or retailing.

Further, due to unfavorable cost/price relationships, value added by farms, i.e., commodity agriculture, has stagnated in recent years and accounts for a declining share of aggregate farm and food production over time. This decline is evident in the value-added estimates reported above for New York (see Figure 2).

Figure 3. Real Consumer Food Expenditures & Farm Value



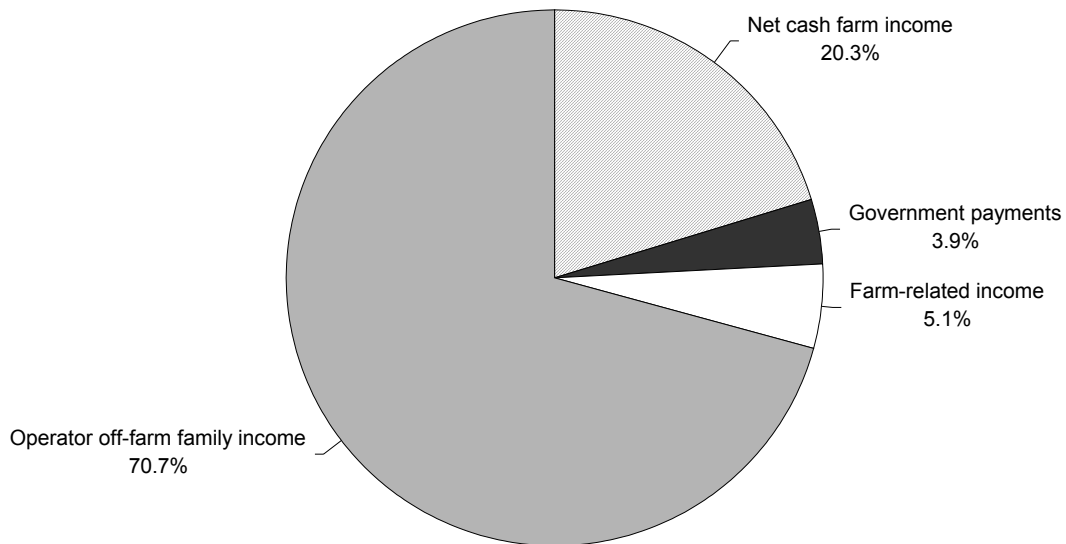
Regardless of the confusion and mixed messages present in the numbers, the rhetoric about value added has gained considerable momentum largely unencumbered by facts or empirical evidence. Although the above definition provided by the House Committee emphasizes processing as a way to add value to commodities, elsewhere the term

value-added includes various aspects of production and marketing activities. For example, on the Iowa State University Extension website “value-added” is used to characterize strategies that enhance value through genetics and diversification. Other authors (Govindasamy et. al 1999) consider direct marketing a value added activity, especially for commodities that are consumed in their raw state (fruits, vegetables, flowers). Elsewhere, words such as “branding” and “identity-preserved” are used in conjunction with value-added. And finally, alternative uses for agricultural assets, such as agritourism, are swept into the broad term of value-added.

Thus for political purposes, regardless of academic squabbles over terminology, the core concept of “value-added” refers to business strategies that enable the farmer to capture some of the premium that is being harvested further up the marketing channel by middlemen and retailers. Our knowledge of the anecdotal evidence suggests that the value added harvest is well underway for New York farmers but the results are completely impossible to track in published statistics. Unfortunately, the tracking problem is endemic, since well-intended, time-honored data gathering conventions have lost touch with the reality of this millennium’s food and agriculture business structures and organizations. Current data sources, as in decades before, are constructed using the entity classified as a farm **business** as the unit of observation; however, to look at the contributions of value-added we need evidence that considers **households with farming interests** (net farm income or loss to report from farm commodity production) as the unit of study. Having the appropriate unit of study is absolutely essential because our analytical reach must extend beyond the commodity production component of the farm operator’s income portfolio. For this reason, data which feature farm households as the unit of study are critical if we are to understand fully both the strategic merits and the numerical results of value-added business expansion.

The dilemma for New York agriculture can be illustrated using a recent USDA survey that enumerates all sources of household income for New York farmers (Figure 4). These data show that only about 20% of farm household cash income comes from commodity production (net cash farm income). Federal farm program payments add another 4% to household income while farm related income (income deemed to be received by farmers in exchange for agriculturally-related services—“other business income in Figure 1) accounts for 5% of the total. The remainder (70% of farm household income) is from a vaguely-defined set of activities classified by the USDA as “off-farm” income.

Figure 4. Sources of income for farm households, New York, 1999



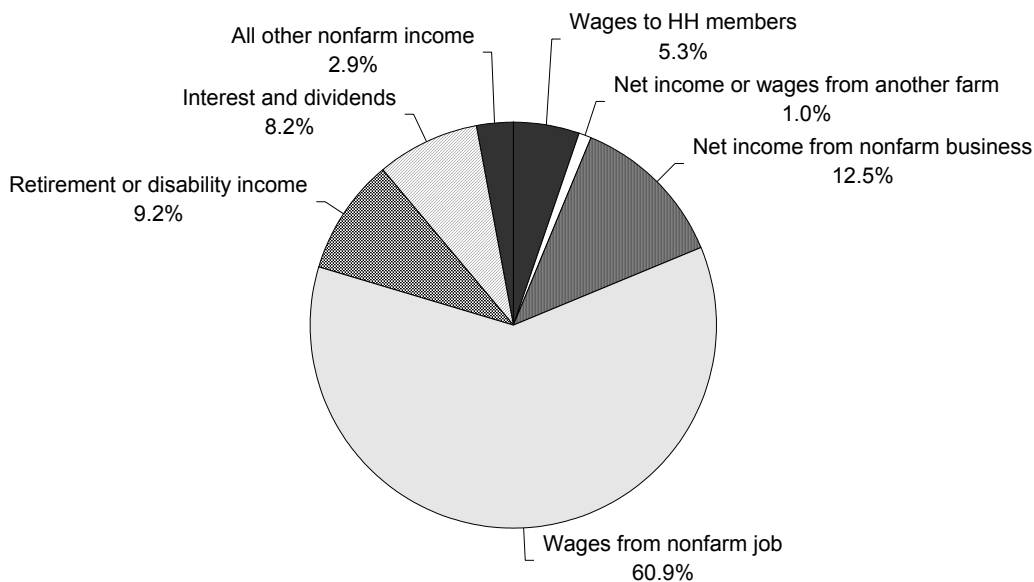
Source: USDA-NASS

Our concern is that despite the efforts of some to sort out the issues of farm family income (see, for example, Harrington and Koenig 2000), USDA categories are missing certain activities and/or blurring the boundaries needed to make an authoritative evaluation of value added production. That is, some off-farm income is generated by on-site, closely allied business enterprises that represent the very essence of ag-based value-added enterprise. Examples include: wholesale-retail farm markets, food processing and manufacturing, and transport/trucking/delivery services. USDA data conventions are not robust enough to capture such details of today's complexities in business models. As a result, sorting off-farm income by major source (see Figure 5) provides only tantalizing glimpses of downstream effort. The data demonstrate that farm families, just like nonfarm families, realize substantial income from passive sources, including: retirement and/or disability income, interest earnings, dividend earnings, and "other" sources as defined by the USDA. Together, these passive income sources account for about 20% of New York's farm household income.

For the remaining 80% of household income, the survey tallies active "nonfarm income" in ways that may or may not be instructive for today's discussion of value-added agriculture as shown in Figure 5. A generation ago, the conventional wisdom held that this component of off-farm income was comprised mainly of two sources: 1) wages/salaries realized from a hobby farmer's real day job and/or 2) wages/salaries earned by other household members. In those days, the cliché went that a winning strategy for a young, aspiring farmer was to marry a school teacher based on the predictable paycheck coming from that off-farm source. On the one hand, surely this

imagery is badly dated and falls far short of capturing the current composition of farm family income. But yet, the chronic data limitations enumerated here mean that we continue to craft policy and advise farm families in a genuine information vacuum, absent any real insight on the details of the household income portfolio.

Figure 5. Sources of off-farm income for farm households, New York, 1999



Source: USDA-NASS

Are All These Activities Value-Added?

Unsatisfying as the empirical evidence might be, the salient question is: should all these activities be considered “value-added?” In examining the issue of value-added and its impact of farm families and the rural sector, it is crucial to parse out the definition. The parsing adds precision because activities contributing to various parts of the portfolio of farm household income can differ in terms of the demands on the manager, the need for additional employees, and the level of additional debt burden.

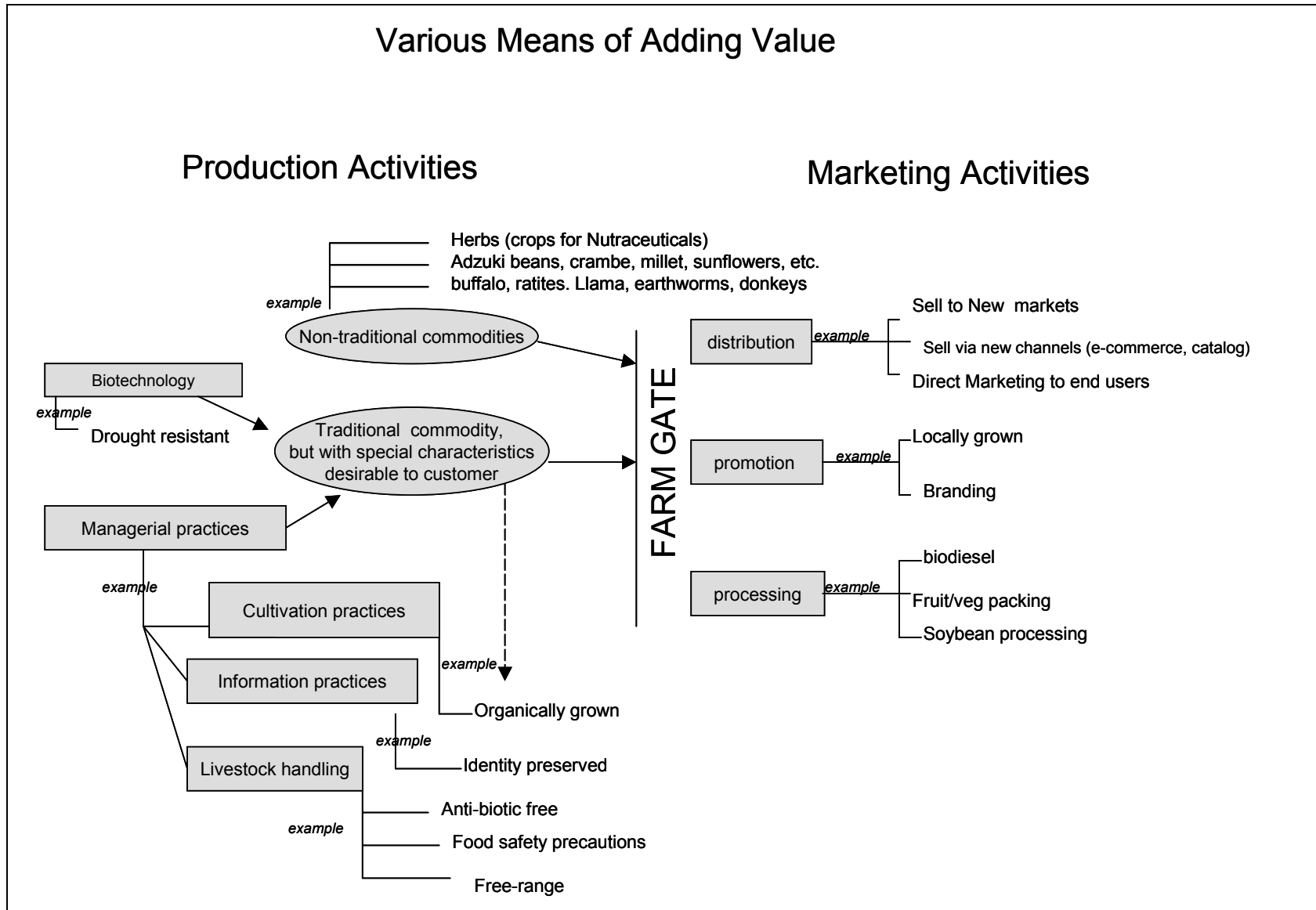
For this discussion, a useful way to categorize income-producing activities is as follows:

1. Value Added
 - a. Production-oriented value-added activities
 - b. Post production or Marketing-oriented value-added activities
2. Parallel deployment of farm assets (**not** truly value-added)

Figure 6. illustrates this thinking. Starting on the left-hand side, consider the various production activities that can add value to commodities. In other words, managerial practices or genetics can be used to imbue traditional commodities with special characteristics desired by the customer. To meet the demands of consumers willing to pay a premium for characteristics such as food safety assurance or organic qualities, managers must use cultivation, handling, and/or information system practices that differentiate the product. Alternatively, farmers can use strategies that are more focused on the marketing side of the business to add value. For example, farmers can look for new customers in new markets (e.g., sell to a different demographic, or even seek out customers in different industries, such as pharmaceutical) or cut out the middleman by targeting end users instead of wholesalers. The University of Arizona's extension site on value-added programs calls this approach "New Gates Through Old Fences." Another differentiation approach is to use promotion strategies such as branding to distinguish the product. Angus Beef and Florida oranges are two examples. Finally, on-farm processing to create special packaging (e.g. bagged salads, sliced produce) or to transform the raw goods into another product (e.g., biodiesel) can be used to differentiate farm products and add value.

What does not appear in Figure 6, and therefore what we would not call value-added are those activities that involve finding uses for existing resources that can be run in parallel with agricultural production. We use the term "parallel deployment" to characterize activities such as: accelerating or modifying use of land and/or buildings to generate new rental income, provision of boarding services for animals, providing for public recreation access, and agritourism. Such activities are different because they involve **extracting** value rather than adding value.

Figure 6. Various Means of Adding Value



How Do Activities Vary?

To further understand some of the differences among the various activities it is useful to consider four dimensions:

- What is the **overall** managerial skill level needed to pursue the activity (above and beyond the skills needed for good commodity business)?
- What is the key **specific** managerial talent needed for success?
- What is the likelihood that **additional employees** are needed to support the new activity?
- What is the need for **additional assets** (which will increase the debt burden)

The activities are listed in Table 1, along with our characterization of each with regard to the four dimensions listed above. It should be noted that our scoring of the activities is subjective and would benefit from further empirical exploration. As we will see in the next section, these factors will influence how value-added activities change the farm family risk profile.

Overall Managerial Skills

Value-Added Activities

Considering the overall managerial skill level needed to pursue a given activity, we argue that the **highest** demands on the manager come from 1) the value-added strategies on the production side of Figure 6, including: use of biotechnology, managerial-focused approaches, the switch to specialty commodities, and/or 2) on the marketing side, the addition of processing facilities. We rated these as high because on the production side, managers would need to integrate new (and possibly high-tech) production practices and to have excellent record keeping and information systems. On the processing side, the manager would have to adapt to more of a manufacturing environment, which can be distinct from production agriculture. On the other hand, other strategies may place only **moderate** additional demands on the overall skills of the manager, for example: use of new distribution vehicles, creation of partnerships with other players in the vertical chain or those using new distribution techniques. In these cases, the manager does need some expertise, but even those with moderate overall managerial abilities may be successful. Activities we estimate would take the **least** amount of overall managerial skill include: direct marketing and/or promotion techniques such as branding. These might be considered more of a new activity tacked on to the existing operation, rather than a re-engineering of the whole operation.

Parallel Deployment Activities

Note that those activities involving use of existing assets (human and/or land) are all **low to medium** in terms of demands placed on the overall additional management skills needed. This is an important distinction because it means deployment strategies are available to a broader spectrum of managers.

Table 1. Scheme for Categorizing Activities Associated with Value-Added Agriculture

Strategies Involving Value Added Products	Method	Example	Necessary Managerial Skill Level	Key Management Skill(s)	Need for employees beyond farm family	Need for additional assets	
<u>Production-oriented</u> 1. Biotechnology	Use specific genetics in the product desired by the marketplace	pig intestines to researchers, genetically treated dairy cows for pharmaceuticals	High	Production	No	Medium	
	2. Managerial focus	Use managerial techniques such as special cultivation or livestock handling	Organically grown livestock or crops, anti-biotic-free livestock	High	Production	No	Medium
		Use tracking via information systems	identity-preserved products	High	Production, Information Systems	No	High
	3. Specialty Commodities	Change production to meet a niche market	sheep cheeses, goat milk, adzuki beans, buffalo	Med-High	Production, Marketing	No	Medium
<u>Post-Production oriented</u>	1. Distribution	Direct selling	Sell commodities directly to end user via roadside stands, farmer's markets	Low	Sales & Mktg.	No	Low
		Use new distribution vehicle	Catalog, on-line sales	Medium	Sales & Mktg, Information Systems	No (assuming outsourcing)	Medium
		Branding, trademark	Vidalia Onions, buy-local programs	Low	Sales & Mktg	No	Low
	2. Promotion	Add own processing capabilities	beef packing, specialty jams, apple packing	High	Employee Mgmt.	Yes	High
	3. Processing	Partner with others in the vertical chain to process	partnership in vertically integrated corporation	Medium	Negotiation	No	?

(Table continued on next page)

Table 1. (cont.)

Strategies involving Parallel Deployment of Resources	Method	Example	Necessary Managerial Skill Level	Key Management Skill(s)	Need for employees beyond farm family	Need for additional assets
1. Exploit specialized human capital	Agricultural Service Business	fertilizer services, vet services	Medium	Content-specific knowledge	No	Low
2. Exploit land and/or buildings	rental income	land, facilities (storage), and rights (hunting rights, right-of-way)	Low	Landlord	No	Low
	service business	companion animals: boarding, kenneling, training	Medium	Content-specific	Yes	Low
	access to public for recreation	Cross-country trails, snow mobiling	Low	Landlord	No	Low
	Agri-tourism	Destination farm, pumpkin farm	Medium	Landlord	No	Low

Key Management Skills

Value-Added Activities

The key specific managerial talent needed for the various activities varies widely. Production skills are central to success in using biotechnology, managerially-focused approaches, and switching to specialty commodities. For distribution and promotion activities, sales and marketing expertise are crucial. Adding value through processing strategies requires either strong employee management skills (if processing plant added to farm) or strong negotiation and relationship management skills (if strategic alliances are formed in the name of vertical integration). Information systems skills are especially critical for identity-preserved strategies and website promotion.

Parallel Deployment Activities

Again, the activities associated with parallel deployment of farm assets are distinct from value added activities with regard to the specific key skill needed for each case. For the most part, these activities require good landlord skills. In the case of the service businesses (using specialized human capital and/or buildings) there is a need for very focused and content-specific knowledge.

Need for Employees beyond the Farm Family

Value-Added Activities

There is only one case in which a value-added enterprise is likely to need substantial additional labor beyond the farm family: adding a processing plant. Other examples listed on Table 1 can likely be achieved (with some outsourcing for technical expertise) with labor present in the family household. One could make the argument that growth in the agri-tourism area or a large increase in catalog or Internet sales would lead to additional hiring, but for most farm households, at the startup stage the majority of the other strategies can be attempted by engaging family members in the added activity.

Parallel Deployment Activities

If a parallel activity requires a labor intensive activity and is a departure from production agriculture, the farm business may need to supplement its labor force. An example would be a kennel business. Other than that, we characterize most deployment activities as manageable with farm family labor.

Need for Additional Assets

Value-Added Activities

The need for additional assets is likely to be **high** if a processing plant necessary if a processing plant is built or extensive equipment is added to allow for tracking of commodities (identity preservation). In contrast, biotechnology approaches, other activities with a managerial focus, and specialty commodity activities are likely to require more modest adaptations in terms of equipment or land and so are deemed to have only a **medium** requirement for additional borrowing. The *lowest demands are in the cases of direct selling, specialty commodities*

Parallel Deployment Activities

The activities involving use of existing assets all can be ranked low in terms of additional borrowing needed to start the business. As will be seen in the companion paper, the fact that parallel deployment activities require very little additional capital (as opposed to value-added) has an impact on their corresponding risk profile.

Summary

Value-added is a buzzword being used to characterize a wide range of approaches and activities that do not necessarily belong together, once we examine some important characteristics. Thus it is useful to group activities with like characteristics and to separate out activities that deploy current farm assets rather than truly adding value. In particular, it is important to realize that value-added strategies require different combinations of managerial skills, new employees and additional assets. Table 2 illustrates this by plotting the activities on two dimensions: Necessary additional overall managerial skill required, and the need for additional assets (increasing the debt burden). The result is striking if we consider that many small farm producers who are being given the incentives and moral support (through policy) to move toward value-added agriculture may have low to moderate management skills and modest capacity for additional borrowing.

Table 2. Various Value-Added and Parallel Deployment Activities, by Need for Additional Assets and Overall Managerial Skill

Additional Assets	Managerial Skill Level		
	High	Medium	Low
High	<ul style="list-style-type: none"> • Identity-preserved products • Adding processing plan 		
Medium	<ul style="list-style-type: none"> • Genetics • Organics • Anti-biotic-free 	<ul style="list-style-type: none"> • Specialty Crops • E-commerce • Catalog sales 	
Low		<ul style="list-style-type: none"> • Strategic Alliances • Ag-Service Business • Kennels • Agri-tourism 	<ul style="list-style-type: none"> • Direct Selling • Branding • Rent facilities • Pubic Recreation

For such individuals, it is clear that only a subset of value-added activities make sense. In the paper that serves as a companion to this one, we will continue to evaluate these activities, in the context of the total portfolio of farm family income, outlining the hopes and dreams attached to value-added agriculture and exploring whether there are any theoretical or empirical reasons to support such expectations.

Conclusion and Implications

The framework and discussion presented in this paper support two major conclusions. The first is that the term value-added is being used very broadly to characterize activities which are quite different from each other in terms of the managerial and other resources needed. The second conclusion is that existing published data sources do not use the appropriate unit of study for a detailed empirical examination of value-added agriculture and its role in farm family incomes. This means that policymakers are moving forward in the value added arena with little or no rigorous exposure to empirical evidence and with scant effort to help farmers make informed decisions about their eventual fate in the marketplace.

These conclusions imply that policymakers, extension educators, and researchers alike must be careful about applying the label “value-added.” True value-added activities require a different set of resources and managerial skills when compared to strategies which simply re-deploy existing assets. While it is hard to resist the appeal of sending small farmers off to capture returns that are harvested further up the marketing channel, it amounts to sending sheep to slaughter unless we have a clearer idea of what it will take to be successful. Another important conclusion is that it is important for the research community to concentrate on dissecting farm households rather than farms. In order to adapt to the diversity of choices facing farm households today, it may be worthwhile to re-think the framework of how we examine income sources. Only with the right data in hand will it be possible to understand from an empirical point of view whether value-added activities and/or parallel deployment of resources are contributing to the well being of our rural sector and its participants.

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