Long Term Planning for Crop Production

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The selection of enterprises for the farm must be made in the context of the overall farm business strategy and long run vision. In addition, the proposed crop should be a reasonable choice for your farm with respect to soil and climate conditions and available resources. Further, for many enterprises there exist a large number of varieties, for example, peaches and fresh market tomatoes. The following discussion will focus on permanent crop enterprises, but the basic concepts presented pertain to annual crops as well as livestock enterprises.

Business Strategy

It is critical to have a clear business strategy for your farm to remain profitable and competitive. One basic strategy is becoming a low cost producer and competing on price. Farms choosing this option often tend to lower costs by increasing acreage and realizing economies of scale by spreading equipment and other overhead costs over a large acreage. Farms choosing this strategy typically sell volume to a few large buyers. However, this strategy can work for small farms under some conditions. Having the ideal location for a crop in terms of climate and proximity to market to reduce transportation costs are examples. Farms taking the low cost production approach tend to focus on one or two crops and are not highly diversified.

Another basic strategy is differentiation by producing a unique product. This can take the form of an unusual fruit or vegetable such as cardoon or olallieberries, or unusual varieties of common crops such as heirloom tomatoes or blood oranges. Differentiation can also mean extremely high quality such as very light colored, uniform, shelled walnuts. Success using the differentiation strategy typically goes hand in hand with niche marketing. That is, selling to a small but well defined market such as restaurants or high end specialty stores. The differentiation strategy is often used in direct marketing. The differentiation strategy could mean focusing on production of a single commodity or a highly diversified operation depending on the marketing program.

A third basic strategy is being a service provider to customers. This means timely responsiveness to customer requests and reliability. Buyers may have specific requirements with respect to packaging, quality, variety, market window, and flexibility on the time and amount delivered. Service may require willingness to allow a customer to refuse product that does not meet stringent standards or supplying major customers when supplies are limited and demand outstrips supply. In some cases the customer may request that a specific crop be grown exclusively for them. In this case the customer is actually doing the enterprise selection.

Consistency and Feasibility

Each enterprise under consideration should be evaluated with respect to consistency with the ongoing business. First and foremost, does the proposed enterprise fit with the overall vision and strategy approach of the business? Consider how well it builds on current strengths and opportunities of the farm. Does it expose weaknesses such as labor shortages or late spring frost potential?

Research the climatic, soil, and input needs of the enterprise. See the section on Information Sources at the end of this chapter. If the operation is diversified, the crop should fit into the existing crop rotation with respect timing of planting and harvesting with consideration of labor and equipment needs. Storage may also be an issue. For each crop, create a detailed calendar of operations specifying the equipment and labor needs for each operation. From this work plan, a projected budget of costs can be developed.

The calendar of operations and resource use will also provide insight into whether or not the proposed enterprise is reasonable given the resources available to the farm. It will also identify additional resources that may be needed with respect to equipment, tractors, and labor. The timing of operations is key. Adding an enterprise may create a labor need during a lull time on the farm creating the opportunity to keep a valuable employee from leaving for other work. It may also create a bottleneck where several crops have to be planted or picked at the same time putting a strain on available labor and equipment. Other potential conflicts in resource use include water and working capital.

An example calendar of operations for a hypothetical mixed vegetable operation with four fields is presented in Figure 1. The calendar shows the busiest equipment months to be May and September with activities in all four fields. Details could be added to the chart to show irrigation scheduling and hand hoeing in order to more completely reveal peak labor demand periods. Alternatively, separate charts could be developed for irrigation scheduling to spread out labor and water demands. From a cash flow perspective, income is generated in March, August, September and October.

Estimate the costs of production and the resource use to be realistic as to whether or not finances are adequate to produce the crop. It may be that a crop would be profitable but the cost of transplants or drip irrigation might be prohibitive. Changing costs over time directly impact the profitability of an enterprise. The recent increase in the cost of fuel is a dramatic example of a change in input costs effecting profits but the impact is not equal across commodities due to basic differences in the methods of production. Another key value to watch is interest rates both for short term production loans and long term real estate, equipment, and improvement loans.

Sample costs of production for a variety of crop and livestock operations by region and year are available from the University of California Cooperative Extension http://coststudies.ucdavis.edu. Each study describes a range of best management practices and details the operations, input use, and costs for a hypothetical farm. A calendar of operations and breakeven analysis are also included.

Each potential enterprise will require market research. It does no good to produce something if you can't find a buyer or can't sell it at a profitable price. It is a good idea to become familiar with overall industry trends to anticipate an increase or decrease in demand. This is particularly true for specialty items or niche markets. Find out who your competitors are, if possible, and see if they are in expansion mode. Depending on the commodity, it may be important to research both domestic and international competition and the world trade positions of each major player.

The grower needs to know the expected revenue and the probability of a higher or lower gross return. Information concerning consumption patterns over time and anticipating changes in consumption is invaluable, again, including the international situation if applicable. Another key aspect is changing demographics. Staying on top of these factors is critical for current enterprises as well as new enterprises. For example, in the United States fresh fruit annual consumption per capita has remained steady over the past fifteen years at about one hundred pounds per person and population growth is only about one percent per year. In contrast, China's per capita annual consumption is lower at about 75 pounds per person but increased rapidly from only 25 pounds per person 15 years ago. US annual per capita nut consumption has increased over the last decade from about two pounds per person to over three pounds but is much more variable than fruit consumption from year to year (Figure 2).

The other aspect of marketing to consider is whether or not expanding the current enterprise or entering into a new enterprise requires finding new customers or whether it will improve your relationship with existing customers. In the first case expansion or a new enterprise may require a significant increase in time spent marketing while in the latter case it will not.

Finally, reexamine the impact of expansion or a new enterprise on the overall business goals. Project whether or not the enterprise helps the farm stay profitable and achieve goals related to growth measured in acres, gross income, profit, or market access. Determine how the proposed crop contributes to long range environmental goals related to biodiversity on the farm, soil quality, air quality, and water quality.

Diversification

The degree of diversification or specialization will be determined in large part by the overall business strategy followed by the farm business. As discussed above, farms competing on price or selling to a niche market are more likely to specialize in a few or even just one commodity. In general, specialization is based on marketing and allows the farm to focus resources on limited enterprises and customers.

Enterprise diversification, on the other hand, creates opportunities to improve production, provide environmental benefits and enhance the economic performance of a farm. From the perspective of production, appropriate enterprise mixes can breaks insect and disease cycles, reduces weeds, supplement soil nutrients, improve soil structure and conserve soil moisture. These impacts in turn can mean higher yields and quality. Possible

environmental benefits include softening the impact of crop and livestock production on resources, curbing erosion, and increased population of beneficial insects and other organisms.

From an economic perspective, the most commonly cited benefit of enterprise diversification is the reduction of risk. The sentiment follows the old adage, "Don't put all your eggs in one basket." Diversifying as opposed to specializing can spread marketing risk by expanding existing markets and opening new ones, and offsetting price swings in one commodity. Diversification can reduce production risk related to weather. It also helps to reduce financial risk by spreading expenses and income more evenly throughout the year.

Diversification is not without challenges. The new enterprise may require market development if it cannot be sold through existing channels. This will require market research. Any new enterprise means gathering information about varietal performance, best management practices, and postharvest handling. Depending on the uniqueness of the enterprise, this information can be difficult to find. Similarly, seed or transplant material may be hard to find or in limited supply. Additional equipment may be required or modification to existing equipment. Storage capacity may need to be expanded. Finally, the learning curve for the new enterprise may be steep and increase demands on management time. At some point the farm may have too many enterprises spreading resources too thin and creating a situation where not enough time is devoted to any one enterprise.

Sources of Information

Other farmers are always an excellent sources of information and experience to find out what has and hasn't worked in the past in your area. Another source of ideas and production information given by many small farmers is seed catalogues from specialty seed companies. Chat rooms and listserves for gardeners can be useful for specific production information. Be cautious of sales representatives of propagation materials and seeds recommending what to grow. At the same time, a reputable company will provide important production guidelines.

Several University of California and government website resources provide invaluable information (Table 1). The University of California Division of Agriculture and Natural Resources website will guide you to your local Cooperative Extension office and list the expertise of the advisors in your county. The Fruit and Nut Research and Information Center website and Vegetable Research and Information Center website list University of California experts by crop and include important website links to industry. Technical production information is available from SAREP, the Small Farms Center, the Sustainable Agriculture Information Network, and SARE. Production manuals and pest management manuals are available from ANR Publications for several crops. The University of California IPM Program provides IPM guidelines for numerous crops on their website as well as degree day, weather information, and other useful tools. The Department of Agricultural and Resource Economics at UC Davis maintains a website

with cost and return information for a range of crop and livestock operations including organic production. Current market prices are available from the Market News Service but not for many but not all specialty crops.

Table 1. Internet Resources for Farmers

Minnesota Institute for Sustainable Agriculture, 2003. Building a Sustainable Business: A Guide to Developing a Business Plan for Farms and Rural Businesses.
http://www.sare.org/publications/business/business.pdf
http://www.sare.org/publications/business.htm

Sustainable Agriculture Research and Education, USDA. http://www.sare.org

Sustainable Agriculture Research and Education Program, UC
www.sarep.ucdavis.edu

Small Farms Center, University of California www.sfc.ucdavis.edu

Sustainable Agriculture Farming Systems Project, University of California-Davis.
http://safs.ucdavis.edu

Fruit and Nut Information Center, University of California.
http://fruitsandnuts.ucdavis.edu

Vegetable Research Information Center, University of California.
http://vric.ucdavis.edu

Postharvest Technology Research and Information Center
http://postharvest.ucdavis.edu

Farm and Home Advisors Office, University of California Cooperative Extension.
http://ucanr.org/ce.cfm

ANR Publications http://ucanr.org/pubs.shtml

University of California IPM Program http://www.ipm.ucdavis.edu

Cost and Return Studies, Dept. of Agricultural and Resource Economics, UCD.
http://coststudies.ucdavis.edu

Market News Service, Agricultural Marketing Service, USDA
http://www.ams.usda.gov/marketnews.htm

Table 1. Internet Resources for Farmers
(continued)

Fruit and Vegetable Market News, Agricultural Marketing Service, USDA
http://www.ams.usda.gov/fv/mncs/index.htm

National Agricultural Statistical Service, California Field Office.
www.nass.usda.gov/ca

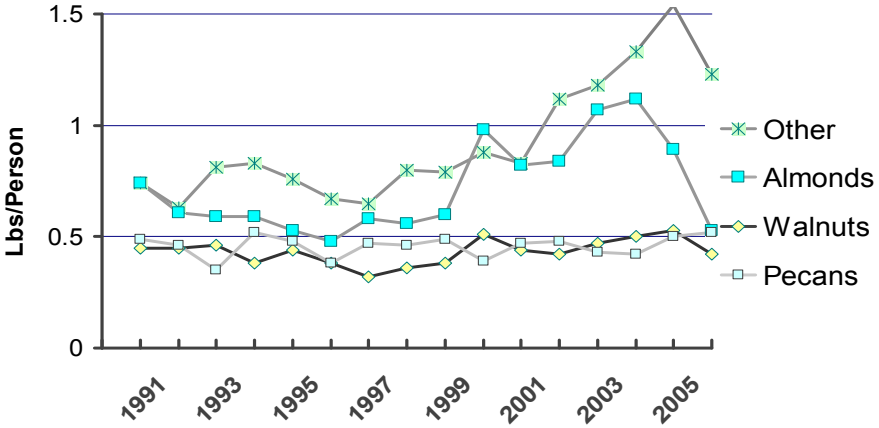
ATTRA – National Sustainable Agriculture Information Service
http://attra.ncat.org/

Figure 1. Hypothetical Crop Rotation for a 14 Month Period

Field	Acres	Crops	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May
1	5	Bell peppers	Land Prep	Plant				Harvest								
		Cover Crop								Prep Plant				Incor-porate		
		Winter Squash													Land Prep	Plant
2	5	Winter Squash	Land Prep	Plant				Harv -est								
		Cover crop							Prep Plant					Incor-porate		
		Chile Peppers													Land Prep	Plant
3	5	Cucumber		Land Prep	Plant		Harv -est									
		Cauliflower						Land Prep	Plant					Harv-est		
		Lettuce													Land Prep	Plant
4	2	Sweet Corn		Land Prep	Plant		Harv -est									
		Snow peas						Land Prep				Plant				Harv -est

Field Activity by Field Number	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May
Major production activities		All	3,4		3,4	All	2,3	1		4		1,2,3	1,2,3	All
Income producing fields					3,4	1,2	1					2		4

Figure 2. US Nut Consumption 1990 - 2005



Other includes hazelnuts, macadamias, pistachios, Brazil nuts, cashews, and mixed nuts

Source: ERS,USDA Fruit Situation and Outlook Yearbook spreadsheet files, 2006