

Adventures In Marketing: California Department of Forestry and Fire Protection's Nursery Program

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Abstract - This paper discusses initial marketing efforts for a nursery program that includes a seed processing and seedling production facility. Ideas are presented on positioning products and services, factors involved in pricing, some specific marketing activities, and forms/procedures that had to be developed in response to budget constraints. While efforts to increase revenue were relatively successful, it remains to be seen if efforts were soon enough and large enough for political viability of the nursery program under increasing budget pressures.

Reorganization; it's the way of the 90's. If it hasn't already arrived, it's coming soon to an agency near you. Simply put, it means "Do lots more, with lots less, now!" Our agency is no exception. In 1993 we were told that the Nursery Program would have two fiscal years to become self-sufficient and half of the first year was already over. So, with no funds and even less time, but lots of determination a marketing effort was started.

SEED OPERATION

Initial efforts focused on the Seed Operation. In the past, we hadn't been allowed to offer seed services or charge for them, but the private sector had wanted our services in this area and there were no large scale private processors in the state that we'd be in competition with. Since the majority of our experience and expertise was with conifers, that was the starting point. The first decisions were 1) what services to offer and 2) what to charge for them.

For conifer processing, we felt our strength was the ability to do comprehensive processing - a high quality, full-service option. This would also position us differently than the less comprehensive options available through private processors in adjoining states. We'd be giving the customers the same high quality treatment we were providing for our own seed lots and wouldn't have to think about what steps to leave out for a lower level of processing. Our comprehensive processing includes use of special collection sacks we've developed, assistance with determination of maturity and collection dates, an initial assessment of the cones at arrival, full processing, X-ray of the seedlot prior to upgrade and after the final upgrade plus testing for purity, seed/lb, moisture content and germination rate.

It was more difficult to decide on prices to charge. Price would depend on the species, the lot size, what steps were done and how long they'd take, who the steps were done by and what hourly rate applied, and provision for overhead. Even within these factors, there were more

decisions to make. For example, under lot size, we felt that there would be economies of scale between very small lots, medium sized and large operational lots. But, these lot sizes needed to be more specifically defined. Once the lot size ranges were defined, the small lots were priced on a per lot basis while the operational lots were priced on a per bushel basis. Other things to be determined were; what hourly wage rate to assign to the inmate labor and what overhead rate to use. Even things we were familiar with, such as what processing steps would be involved for a given species required additional thought. There had never been a need to keep records on how long any given step took and we rarely did all the steps in uninterrupted sequence on any one seedlot. There wasn't time to collect data, so we simply did our best to make reasonable estimates with the idea that revisions might need to be made at a later time. A Processing & Testing Price Proposal Form was developed to work up the price estimates (Appendix 1) and the results were put on a handout describing our services and prices that could be mailed to prospective customers (Appendix 2). This process of deciding on a service or product, how to offer and price it, followed by development of a handout was repeated for a variety of other services.

Additional services and products we could offer in the seed arena included:

Upgrade of Previously Processed Seed Lots

We felt that we could improve the purity and germination rate on lots that had not received a full upgrade initially, especially for true fir and redwood. We chose to offer two options: 1) maximize filled seed percentage (leave in every seed that is filled, even those that appear questionable and 2) maximize potential vigor and germination by removing some seeds that appear questionable, even though they are filled. Prices were set on a per pound basis, depending on lot size.

Seed Analysis & Testing

To avoid direct competition with officially certified seed testing laboratories, we decided to remain uncertified. But this would allow us to offer services at a lower cost. Services we offer are purity, seed per pound, X-ray analysis, cut test, germination test, and determination of an appropriate seed pretreatment to break dormancy. We decided to focus on X-ray analysis which is not commonly available and provides several useful opportunities. We could make the image only and let the customer save on cost by doing their own analysis. The X-ray analysis is well suited to a rapid determination of filled seed percentage where no other testing or analysis is planned, such as many restoration projects where direct seedling is planned. The non-destructive aspect of X-ray makes it suitable for assessing small amounts of rare seed such as threatened and endangered species. A Rush Service is offered for X-ray analysis and cut tests where customers might want an immediate response in order to make a collection or seeding decision.

Since testing prices didn't depend on species, the handout developed for these services could be used on a wide array of both conifer and nonconifer species.

Seed Storage

Storage could be provided in the State Seed Bank. This service was not available within the state and most private seed was being sent out of state for storage. We decided to offer two

storage options; 1) storage by the box for those with numerous small lots and 2) storage by the pound for those with larger quantities. A discount would be offered for those storing very large quantities. There would also need to be charges for entry into the system (receive, weigh, re-package, records), withdrawals and shipping.

Cones

In the past, we'd paid to dispose of cones or given them away. There was market for them, so we needed only to determine our process and price. We settled on charging a set price for a convenient volume of cones rather than using a bid process. We wanted to keep our handling and costs to a minimum, so we required vendors to come and take the cones away rather than shipping them. There was such an overwhelming response that we might consider a bid system in the future to maximize our revenues from this source.

Seed

We'd been able to sell seed before, but on a very limited basis. The purchaser had to certify that the seed, by specific source, was not available from a private vendor and we had to make a determination that it was excess to our State Seed Bank needs. Previous sales had been at the average commercial price. Now, we charge what we estimate our cost to be plus an overhead. Many of our site-specific seed lots are unavailable commercially. This, coupled with a frequently higher purity and germination rate make our seed a more specialized product that should sell for a higher price. Though we can now sell seed more freely, we still need to keep an adequate supply in the State Seed Bank.

Blister Rust-Resistant (BRR) Sugar Pine Seed Services

We'd been offering these services free of charge to fellow members in our tree improvement cooperatives. Now, a charge has been instituted. Candidate seedlot processing consists of processing a 2-4 cone lot and doing rush processing to get 150 filled seed (X-ray determination) in time to meet the USFS stratification process for the start of their resistance screening process plus upgrading the rest of the seed. We also process known BRR cones under our regular processing schedule. In our own BRR work, we'd found it necessary to pre-bag cones on some known resistant trees to exclude insects and maximize our BRR seed yield. We now sell these pre-bagging "kits" as well.

Tree Improvement Lots

We'd been doing some processing and testing of tree improvement lots for several companies under a cooperative agreement that allowed us to trade our services for supplies. Now, we can offer those services routinely. We also did a proposal and were awarded the processing and testing work for seed from a seed orchard where we are one of the members of the tree improvement cooperative. It works well for everyone- we can choose to gather extra information that will be valuable, at no cost, and the cooperators like the idea that we have a vested interest in having the highest yield and quality possible because we get a share of the seed.

Training

This is another service we'd been offering free that we needed to institute a charge for. However, after more than 10 years of offering cone and seed training, most of the conifer folks

had been trained. Instead, the target market for seed workshops appeared to be restorationists. Workshops and training have been given for Society for Ecological Restoration and several agencies. Two private companies have purchased customer training sessions for their staff. This is an area with potential for future development.

Processing of Hardwood, Shrub and Other Native Species

With conifer crops so periodic in nature, we knew they couldn't be relied on to produce a steady income flow. We'd processed a number of hardwood and shrub species for use in our nursery production and felt we could process a wide array of native species. While many restoration projects involve direct seeding, there would still be a market for processing services. Still, there was a much wider range of species, lot sizes, levels of debris and differences in structure involved when compared with conifers. An entirely new pricing scheme was necessary. The system we chose is based on 1) level of debris (low, moderate & excessive), 2) lot size (small, medium, large), and 3) level of processing (basic & comprehensive). Again, we had to estimate the time that would be involved based on trials with a limited number of species. We probably will have to revise these prices as we get more experience. Several seedlots we've processed were surprisingly time consuming. We have also successfully processed species we were completely unfamiliar with. However, in those cases, we like to see the seedlot first before agreeing to process.

Vegetable, Crop & Flower Seed Processing

In an effort to broaden our customer base beyond the traditional conifer market, we turned to a non-traditional market. Our equipment works equally well for seed of most species and we needed to keep busy in the off season for conifers rather than adding additional work at a time when we already have staffing limitations. The vegetable, crop and flower seed markets seemed an ideal extension of our current work. When we first proposed this, it met with resistance since it was "non-traditional" and non-mandated. But our compelling need to generate revenue was persuasive. The niche we focused on for this market was upgrade of previously processed seed and X-ray services. There is already a lot of commercial processing capacity for this sector, but they focus more on quantity and speed. We aren't set up to handle bulk processing on large volumes but there was room to offer an improvement in germination and/or vigor on volumes that we could handle. The service is offered on a price per pound basis with a volume discount for a large volume of business during the course of a year. This effort has been very successful, but is due almost entirely to the specialized equipment that Rich Felden, our head of processing, has designed and to his connections in the vegetable and flower seed industries.

Processing Consultation

A number of firms wanted to see what equipment we had, get processing recommendations, obtain advice on equipment and have a sample of their seed upgraded and X-rayed. We charge by the hour for consultation services and an advance appointment is required. Everyone that has paid for a consultation has ended up bringing us additional processing and testing business, so this option has worked well.

Seed Packets and Seed Zone Maps

There have always been frequent requests for small quantities of coast redwood seed or giant

sequoia seed. We now offer a seed packet with 100 seed plus instructions on seed treatment and seedling growing. A handout on growing coast and sierra redwoods outside their native range is also included. We've made sure the packaging is attractive, in contrast to the basic packaging used on our usual seed sales where larger quantities are involved. We are able to charge a high price for this relatively labor-intensive but popular product. The next step is to market these packets to nature stores, garden catalogs and other suitable outlets. We also sell the California Tree Seed Zone Maps, which used to be provided free.

We were surprised with the number of products and services that we came up with just in the Seed Operation. Other details we had to address beyond products, prices and handouts included a way to specify what was to be done for each project we accepted. A basic Project Form was a starting point and now we have a Seed Services Order Form (Appendix 3). We also needed a way to invoice and bill for services. For products like seed, we require advance payment while for services, we invoice upon completion of the work. We developed an invoice form, a seed order form and a system to track projects and revenues. It is important to attend to these details since bureaucratic interest is always high when revenue and receipts are concerned. We were audited this season and expect frequent audits in the future. While we feel fairly comfortable with all the prices and procedures we've instituted so far, it is still amazing the number of times a customer will request a quote on a custom service that we haven't determined a price for yet. We also realize we need a more detailed look at questions of liability and know we need to add additional verbiage on all our handouts to cover this area.

Revenue from the Seed Operation tripled from the first year to the second. Entering our third season, there is an almost non-existent cone crop, so we're just hoping to keep revenue comparable to last year. Trying to keep a 10 year supply of numerous species, seed zone and elevation combinations in the State Seed Bank is a large undertaking that is inherently non-economic in nature. So, it is not certain that the Seed Operation can (or should) be fully self-sufficient. Simply continuing to do this work in addition to all the revenue generating work, with the same staffing and the same or lower budget level, is a big challenge. If we can do all this while covering most of our costs, we'll consider ourselves successful. It remains to be seen if our agency and state government as a whole will agree.

MARKETING SEEDLINGS

Here is a brief description of some of the considerations and activities we undertook to market and increase revenues on the plant production side (bareroot & container) of our Nursery Program.

We started with an assessment of our strengths and constraints. Our legal mandate still precludes us from selling seedlings strictly for landscape or give-away and this limits many markets. In terms of competition with the private sector, there is already decent coverage for conifers and our bareroot nursery is at capacity for the staff level and land under production. This suggests that conifers are not where an increase in our market lies. There are some good private native plant nurseries, so we needed to look at different species or seed sources to avoid direct competition with them. Looking at demand and the limitations of our hot climate and saline water, we felt that we could successfully produce seedlings for desert restoration, mine reclamation, pipeline projects and other harsh site environments. These areas are not well-covered by the private sector. We might be able to produce for coastal sage scrub and dune

environments if demand increases, though there is reasonable coverage by the private sector for these areas at current levels. There is considerable demand for riparian species, but our water quality precludes us from production of these species and limits our ability to produce cuttings as well. One area with good potential for future production is production of "firesafe" species where native species with erosion control, wildlife habitat and firesafe values are needed.

Following a detailed "Strengths, Weaknesses, Opportunities & Threats" analysis, we had to address the matter of pricing. For our standard species, the Board of Forestry (BOF) still sets the prices, though we are allowed to propose prices. We proposed a price increase, but didn't want to make it too drastic. Future increases will be proposed. We also changed the time of year the BOF sets the prices, so that new prices would be in effect in time to use them for contracts initiated that year. For custom species and small lots, the BOF recognized that conditions may vary and standard prices would not be appropriate. Instead, they requested that we propose a method for determining such prices and they would review and approve the method.

Again, there wasn't detailed information on costs and staff time for production of particular crops. We started with a Plant Production Price Worksheet using factors such as species, container type and size, potting mix type, quantity of plants requested and cultural practices with different levels of use that might apply to them. This process wasn't easily workable, so we went to a more simplified method involving container cost, potting mix cost, square footage charge (to cover cultural practices), length of growing period, overhead, small lot charge (if applicable) and shipping. Again, it is amazing how many different combinations there are, so that even with our method in place, we are frequently preparing quotes for requests that we haven't handled previously. We also will need to add on a charge for plants that stay much longer than originally planned. With bureaucratic uncertainty increasing on many projects, plants were sometimes being held months and even a year or longer than originally intended. We've now developed a specific charge for this.

An analysis of our customers (mostly small, private landowners) showed that they varied by age, education, income, purpose of planting and location. They would not lend themselves to a targeted marketing approach. However, they are very loyal, with most placing orders year after year. This suggested a strategy directed towards increasing the overall number of customers, rather than doing targeted marketing to specific groups. We just needed to get the word out to likely places. Once customers heard about us and tried our services, they might be likely to remain customers. We also sought to increase the number of agencies contracting with us for plants.

A few of the marketing efforts tried were:

1) Putting a small, counter top handout rack/ display in all of our California Department of Forestry offices and in the offices of the Rural Conservation Districts, Cooperative Extension Offices and County Farm Advisors Offices. We asked for permission to have the rack displayed and asked if they would keep the rack so that we could change the materials in it. Most agreed to our request since our display was small and didn't take up too much of their

valuable counter space. In addition to our regular Price Lists & Order Forms, we've displayed notices of a Spring Sale with Discount Coupons, a Firesafe Promotional and other items. We'd like to do a nice poster as a supplement for use in these same locations, but didn't have the funds to implement.

2) Advertising. We placed a small ad in California Farmer for our windbreak species. We were reluctant to advertise too widely for fear of raising the specter of competition. Lack of funds also limited advertising.

3) Write articles for newsletters. Advantages were that this was free and got the information out without being a direct or hard sell, like an ad. Many of the projects for which we do seed work and grow plants are quite interesting and the articles also were a way to give recognition to the entities that were doing the work.

4) Attend meetings and conferences. Give talks, training or workshops, if possible. This gives people a chance to interact with us and our organization as a professional with information to share. Without directly mentioning it, they become aware of our expertise and services. Most people want to know who they will be working with on projects before entrusting their valuable materials with them, so personal contact is an important first step. Conferences also provide an opportunity to hear about upcoming projects and to increase expertise. Meetings and conferences can be expensive, but there are sometimes funds available to cover some costs. Otherwise, it can be looked at as professional development with the added value of the marketing aspect. Besides cost, time is a limiting factor for increasing efforts in this area. With staffing shortages prevalent everywhere, it is increasingly difficult to get away.

While our marketing efforts didn't increase our customer base as much as we'd like, we were still able to cover most of our nursery costs the first two seasons. In this third season, increased budget pressures within the Department will make it imperative that we generate even more revenue, so it remains to be seen whether our efforts have been soon enough and large enough. Many agencies determined that they want our services and plants; they just didn't have the funding approved to proceed with projects that were planned.

We face an uphill battle, both economically and politically, but are determined to continue trying to "Do lots more, with lots less, now!"

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Appendix 1.

PROCESSING & TESTING PRICE PROPOSAL FORM

Species: _____

Lot: Size: _____
 Small Lot 5 bu. Regular Lot 5-50 bu. Bulk Lot 50 bu.

Processing & Testing Stage	Step To Be Done	# Reps.	Est. Time	Done By	Hourly Rate	Cost This Step
Log-in						
Assessment						
After-ripen						
Pre-condition						
Dry/Kiln						
Extraction						
Dewing/Debeard						
Screen						
Preliminary Cleaning						
X-ray Assessment						
Final Upgrade						
Hand Clean						
Final X-ray						
Seedlot Weight						
Purity						
Seed/Pound or # of Seed						
Moisture %						
Germination						
X-ray Analysis						

Records						
Packaging						
Shipping						
Work-up of Price & Agreement						

Total: _____

Price Proposal Per

Lot: _____

or

Price Proposal per

Bushel: _____

LL 8/27/93

Appendix 2.



**CONE & SEED PROCESSING
Conifer Schedule**

Comprehensive Processing

The Reforestation Center is able to offer comprehensive cone and seed processing, including:

- * Use of CDFs special collection sacks. (improves aeration & decreases case-hardening)
Assistance with assessing collectability and determining maturity. A sample can be sent to the Center via mail or UPS. We can usually call you the - day your sample is
- * received with our assessment of its status. If not mature yet, we provide an estimate of when it will be ready.
- * Each lot of cones is assessed upon arrival A copy of the initial assessment is provided.
- * Any after-ripening and/or pre-conditioning that is necessary.
- * A copy of the preliminary x-ray, prior to seed upgrade.
- * The highest level of seed upgrade possible. Seed upgrade is our specialty.
- * An x-ray of the completed, upgraded seed.
Determination of purity, seed per pound, moisture content and germination rate.
- * Seed will be a minimum of 98% purity and is usually above 99%. Seed will be dried to storage moisture content (5-9%). The germination rate will be determined using a single test with the preferred stratification for that species.

We have experience processing numerous species. Please call to discuss your requirements and obtain a price quote on any species or special processing options of interest to you.

<u>Species</u>	<u>Operational Lots</u>		<u>Small Lots</u>
	Price Per Bu	Price Per Bu	Price Per Lot
	10-50 Bu	> 50 Bu	5 Bu or Less
Ponderosa Pine	\$8.75	\$8.00	\$74.00
Sugar Pine			
Douglas- fir	\$9.50	\$8.75	\$80.00
White Fir	\$10.00	\$9.25	\$85.00
Red Fir			

Incense Cedar

Coast Redwood	\$17.00	\$15.50	\$105.00
Sierra Redwood			

Other Species Call for a quote.

Seed Upgrade

Do you have seed lots with low germination and a purity of less than 98%? These lots would benefit from further upgrade. We can improve both the purity and filled seed percent of most lots. Cost for this service will vary with lot size, species, current purity and current filled seed percent. Please call to discuss your upgrade needs and receive a quote.

* These sacks are valuable to us. In order to insure their return, a charge of \$15 per sack will be assessed for any sacks not returned.

LEWIS A. MORAN REFORESTATION CENTER

P.O. Box 1590
Davis, CA 95617
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Appendix 3.



L.A. Moran Reforestation
SEED SERVICES ORDER FORM

Ordered By _____

Order Taken By _____

Date _____

Contact Person _____
Phone # _____

Species: _____

Lot # _____

Approximate Lot Size: _____
or weight

SERVICES

SEED UPGRADE

Type:

- comprehensive processing & testing (includes preliminary x-ray).
- Maximize filled seed percentage (may leave in some seed that are filled, but not necessarily viable).
- Try for maximum germination and vigor by removing questionable appearing seed.
- other _____

Instructions for upgrading fractions:

- save all fractions, including empties
- save the final upgrade product & the next best fraction
- save only the final upgrade product

Timing of completion:

- regular
- rush (extra charge)
- If needed by a specific date, date needed _____

SEED TESTING

X-Rays:

- x-ray only (no analysis, non-rush)
- x-ray only, Rush basis
- x-ray with analysis (non-rush)
- x-ray with analysis (Rush basis)

Fractions to be x-rayed

- seedlot, as sent
- all fractions from upgrade process
- final upgrade product only
- other _____

Moisture content: __

Seed Per Pound:

- seedlot as sent
- final upgrade product only
- other _____

Purity:

- seedlot as sent
- final upgrade product only
- other _____

Germination test:

- seedlot as sent
- final upgrade product only
- other _____

Number of Seed: __ standard 400

other _____

Pretreatment: __ standard

other _____

determine a suitable pretreatment

Shipping Instructions:

Method _____

Insured - Amount _____

Ship to: _____

Comments:
