Producing the LEAN Cuisine

"Take care of waste on the farm and turn it into useful channels" should be the slogan of every farmer.

George Washington Carver

We're always looking at ways to make our farms more productive and efficient, and aside from having an intimate understanding of tropical sustainable agricultural systems, it also starts with a tighter management system. The biggest limiting factor in the success of your farm is YOU, the farmer and your skills, motivation, intuition, savvy, and all that good stuff that creates a great entrepreneur.

Farming in Hawaii is difficult enough with the high cost of living and doing business, and with almost all of our farming inputs coming from outside of Hawaii. The cost of transportation is a killer, and if you're not purchasing supplies in bulk, some of your costs could be double that of California.

Our price of gas on Molokai is close to $5 a gallon for regular, and has been at least $1-2 higher than Honolulu for a long time. Our electricity is among the highest in the nation. Large surf along the south shore can close down Kaunakakai Wharf, our lifeline to the outside world, and we average over 12 barge cancellations annually. Sometimes, it has to do with the inability to enter harbors on other islands that causes Young Brothers to cancel our barge since we're part of a statewide surface transportation system.

In a situation like this, the farmer eats it and not the buyer in Honolulu. There's human error and malfunctions on the barge that can affect our access to food on a regular basis.

Human error or malfunctioning thermostats in 40 foot containers destined for Molokai can ruin your day or even your week.

We have constant moderate trade winds in our main farm area of Ho'olehua which can be a blessing or a curse depending on the crop you're growing, and these are just some of the parameters our farmers need to operate under.

It costs the same to bring supplies from California to Hawaii as it does to bring it from Taiwan, and this has to do with transportation policies and regulations such as the Jones Act to protect our domestic ships, so it's not just economics that hobbles our ability to make ends meet, and turn a profit in Hawaii. Maybe we should be looking at bringing more supplies from Taiwan?!?!

Once the Matson container ship lands in Honolulu or Maui, there are additional fees amounting to several thousand dollars per 40 foot container to transship to Molokai since Matson doesn't come to our island. We're really at a disadvantage relative to neighbor islands, so we have to know our competitive advantages and exploit them to the nth degree.

Farming is unlike any other profession since a lot is left to chance, especially our unpredictable weather and sometimes even markets, but there's still a lot a farmer can do to have a handle on the operation and to control the things that can be controlled.

Where and how do you sell your products? Right in front of your competitors where buyers can drive right up? How old is your labor force?

At the recent Hawaii Agriculture Conference held at the Hawaii Convention Center a few months ago, one of the keynote speakers was Ben Hartman, a farmer from Indiana who farms intensively on an acre of land with his wife Rachel. His presentation was about a farming system he created called the Lean System.

His book, The Lean Farm outlines his system to minimize waste, increase efficiency, and maximize value and profits with less work. He learned this system from many individuals, including the creators of the Toyota Motor Company Lean System, a trailer builder near his farm, a lean farm trainer from Denmark, among others.

That sounds like everything every farmer ever wants in a successful farm, but to get there requires a lot of effort, blood, sweat, and tears. When they first started farming, the Hartmans were much like many of us starting up behind the eight-ball, 'a day late and a dollar short' running the farm, playing catchup all the time.

When they first started to develop this system, there were no days off, no vacation or leaving the farm, and the days were long, really long. I think this is where many of us are at now, and hopefully we can move to the next phase before we're out of funds.

The Lean Farm was fashioned after a production system developed by Toyota to build cars. After World War II, it was difficult to start a business in Japan. Without raw materials, all they had was ingenuity and this they exploited it to the end.

Taiichi Ohno, the Chinese-born founder of the Toyota production system described this system as 'looking at the time line from the moment the customer gives us an order to the point where we collect the cash. And we are reducing

that time line by removing the non-value wastes."

Another way to view the lean system is by analyzing 'capacity', the amount of product that can be produced in a given span of time. To Ohno, the capacity equation is "present capacity = work + waste." He also came up with mantras like "If you're wrong, admit it" and "Look straight at reality."

So how do you minimize waste? First is by recognizing it. Distinguish value from waste. In Hawaii, we have a pidgin phrase, 'waste time'. Either you did something that wasn't worth the effort, or you could be doing something more productive. I think in Hawaii we get caught up in "Build it and they will come" or "If I grow it, I should be able to sell it." By doing this, you turn over the control of your farm to someone else.

My Lean Taro Processing System: From the back of the truck to the wash tub to the wheelbarrow, then separating the huli from the corm, saving huli for future this week, then filling 25# of corms in each 5-gallon bucket, then dumping this into a 50# onion bag then weighed, and ready for delivery or pickup.

Today, Toyota produces cars with the highest returns, about 7 times more that most automakers. This level of efficiency came about by constantly making improvements in the production line to move cars along faster. The other area was seeking feedback from customers, but many times customers won't say harsh things about your company, so you need to find ways to seek out valuable feedback. Customers know best, and Toyota has gone out of their way to find out what the customer needs and wants.

When redesigning their Sienna van, one of their engineers drove across the United States and to Canada and Mexico seeking answers. He noticed that people in America drove long distances and ate in their cars. Toyota located cup holders, 8 of them for all passengers, and created a center console to hold food. In some small towns, he found that the corners were too tight for the Sienna, so they tightened up the turning radius.

By sitting in parking lots of shopping centers and big box stores such as Home Depot, the engineer noticed what people used their vans for. He found that 4X8 plywood sheets couldn't fit in the hatchback, so they redesigned the latest models to fit these sheets for all the DIY (Do It Yourself) folks making home improvements.

These are just some of the innovations they added to the Toyota Sienna by observing how people utilize their van. How do your customers use your product and how much do they need at each serving?

Many iterations of this system have been refined, even institutions created, and websites dedicated to this concept. I'm sure some farmers have incorporated the same concepts of this system without knowing the Lean System.

I used to call it the production line or assembly line system, and many farmers operate like this. We may call it cutting corners or minimizing touches or being more efficient instead of running around like a chicken without a head, which is easy to do if you don't know what you're doing.

Your system doesn't have to be like Toyota, and some of this system may not fit into your farm, but being aware of the concept can make you more productive than you already are. Awareness is the name of the game, thinking "How can I find a better way of getting this done?"

Today, concepts such as 'Just in Time' marketing systems minimize costly inventory, and this concept has revolutionized business in Hawaii by doing away with warehouses to hold a month's supply of goods. Prior to our major hurricanes Iniki and Iwa, Hawaii had warehouses with large inventory so we had close to 20 days of food, and in case of a disaster, we could survive for a while or that's what we think.

Today, we have about 7 days of food, about the same time it takes the next Matson container ship to arrive. Gone are most of the Mom & Pop stores that held food in the neighborhood near your home, except for a few communities like Molokai, and also the warehouses due to high land costs here. Today, we have less food security and more food deserts in Hawaii.

Enter the big box stores where the inventory is small and the next installment of supplies is on a container ship somewhere between California and here. This 'new' system may be great for most places in the world, but we're not anyplace. We're in a very isolated place and we can get very complacent about how much supplies we should be holding at one time, and I mentioned this to Ben.

How do markets use your products and how can you improve on the product you provide them? Hamburger curry with Manoa Leopard lettuce tortilla wrap.

Inventory ties up precious capital that could be used to move your farm along, but what happens if you don't have a key piece of equipment integral to your production system, and have to wait for a few days or more to arrive? The dilemma will always be 'how much do I need and how much will it cost if I only

buy a small amount?' This is the story of our lives in Hawaii.

How do you go about designing your farm to be more efficient and also sell all you product? The concept of 'push-pull' is to either 'push' your product especially when you have too much of it, or 'pull' when the market is demanding your product and its moving smoothly to the point where you might not have enough. The latter is the preferred system of farming because over-supply is waste and you may have to sell it at a loss or eat it.

You want to create a pull system at all costs, and an important part of marketing is determining what the customer wants in 'real time'; right now, today, this week, this weekend, and next week. Without this kind of feedback, you really can't plan how much to plant.

The communication system between you and your market needs to be active and alive; text, email, Face Book, and even phone and face-to-face. Feedback is the name of the game. This means visiting your markets, restaurants, wholesalers, stores or end users and engaging with them. If anything is changing in your production pipeline, your customer should be the second one to know.

On the other end of the system, creating opportunities for your customers to visit the farm and see what you're growing may open doors to more sales. You can promote new varieties by having a field day for them to see and taste new products. You can hustle some media people to feature your product to get it out there. There are so many new colors of vegetables, and innovations on how to prepare them, but all of this takes time and energy, so what strategies will yield the 'best bang for your buck' and fit into your operation?

In Hawaii, crops have seasons when they will grow better than other times of the year, but buyers want it all the time. This is where science needs to merge with production and marketing. I don't believe it's a good idea to farm the same vegetable crop all year round, and I can give numerous examples of creating your own monster when you do this.

Getting taro to this point in the production system takes 12 months and attention to detail, but many things can still go wrong along the way. Variety: Piko ula ula.

There's a good reason to rotate crops so you don't raise more diseases and insects than crops. You can either take the pests head-on, or retreat. I like to hit

and run, get in and get out. Maintaining a balance of good and bad pests takes a lot of planning and also luck, and with a changing climate this becomes a constantly moving target.

Five Japanese words or concepts are used to describe this system:

1. *Seiri* or sort and simplify. Eliminate anything that is not absolutely necessary for your production system. Separate needs from wants. When in doubt, get rid of it. Everything has a cost. Liquidate.

2. *Seiton* or set in order. Everything has its place. Store tools where you use them the most, and in plain site or eye level. Always know where each tool is.

3. *Seiso* or shine: Keep everything clean and well lit. Clean up every day after the chore is completed. Illuminate workspace so you can see waste. Have a clear vision of everything. A clean farm is safer. Make it easier to clean.

4. *Seiketsu* or standardize. The same task is done the same way each time with the same tools and even totes. Fields are all the same size. Spring cleaning is everyday so it doesn't pile up. Visualize: Post photos of how each work station should look. Label your spaces/rooms. Shadow boards – contoured outlines around tools to indicate their rightful place.

5. *Shitsuke* or sustain. Self-discipline through regular audits. Take turns inspecting the system and giving it a rating for cleanliness, and reward the best workers. Give to-do lists to workers.

These concepts are also referred to as 5S, and if you google it, you find lots of websites on this topic and also marketplaces to help streamline your operation. This system made a lot of sense. 5S cleans out a farm's arteries.

He organized his tools so it always goes back to the same place. I think his concept of determining what tools you can live without is important. My father used to mention that his tools 'had legs' because every time we borrowed them, we didn't put it back to its rightful place.

Why do you have to buy the latest tool when the one you have works just as well? I have a hoe that's over 40 years old, and I still go back to it; it has 'mana' or spirit and fits in my hand like a glove. It's called making do with what you have. He talked about having tools as close to where it's going to be used.

How many tools do you need for your farm?!?!

I made a comment to Ben about our isolation, and the need to keep back-up supplies because we can't just drive

down the road to buy something because they might not have it. This was more acute when I worked on Lanai; they have almost nothing for backup. We need to *'Hawaiianize'* this system to our own unique situations on the different islands.

This works on a small farm but not on a 5-acre farm. I don't know how many times when installing drip irrigation or making repairs and I couldn't finish the job because a fitting or a tool was missing. For me, having a vehicle dedicated to making repairs and doing field work is the answer, such as a golf cart or an old truck.

Taiichi Ohno identified & types of waste, but Ben added three additional ones common on farms. They are:

1) Overproduction
2) Waiting
3) Transportation
4) Overprocessing
5) Inventory
6) Motion
7) Making defective products
8) Overburdening
9) Uneven production and sales
10) Unused talent

Most of these are self-explanatory but I will touch upon a few. If you don't know your markets or you have erratic buyers, you may not have consistent and steady sales and this is the nature of your market. Having many revenue streams will allow you to 'dump' at a profit but you're still in push mode.

Getting a good price on a ton of fertilizer can be a great deal, but not if it takes you two years to consume the stuff, and tie up your most limited resource, money. You can also tie a lot of money up into products you cannot sell, and even converting that into pork may not produce dividends.

Overprocessing is one of the biggest wastes because you've taken the product beyond just harvesting and washing. Now you're cleaning, packing, and bagging, and you have to dump it. If you have to take it somewhere, like giving it away, now you have labor and transportation costs added to your loss.

Knowing how much of each product buyers will need helps to minimize their waste so they always have a fresh product. The natural tendency will be to try and sell them as much as you can. This extra service also increases your value to the buyer.

Minimizing and increasing the efficiency of motion goes hand-in-hand with ergonomics, the study of people's efficiency in there working environment. The handle length of a workers tools and the height of the working table need to match the height of that person. Using your brains is important in this

situation because your brain is going to last much longer than your back.

Waiting can encompass a lot of different activities such as waiting for the rain to stop, waiting for labor to arrive, and waiting for the store to open, but you may be able to use your wait time to shift into other activities, such as updating your markets. Being able to address the 'what ifs' and quickly shift gears can minimize waste.

The take home message from Ben Hartman was to keep tweaking the system until you get it right, always looking at being more efficient and doing each chore a little faster. He talked about having adequate lighting when processing vegetables and how just a small change in an important step like post-harvest processing can save precious time and increase efficiency.

He discussed having adequate water pressure to wash produce faster. Some of these adjustments are so small but can cut hours off your weekly chore. Ben spoke about 'standardizing' your production system such as planting or harvesting with placards so all the workers know how to do the job and you didn't have to train and watch every worker to make sure they're doing the job right.

This concept was a throw-back from ancient times in Japan when most of the farmers couldn't read but could understand pictures. It reminds me of the phrase from my childhood, "Do I have to draw a picture for you?" when you didn't do the job right.

Protecting your investment on Molokai means installing a deer fence, and they can still find a way over or under.

Ben spent a lot of time in his book explaining the differences between his market segments, how each was unique, and how he needed to collect feedback from each of them to customize his products and the amount of product he delivered to each.

A farmers market is different from a CSA is different from a restaurant is different from a retail market and is different from a wholesale market. Ben also focused on what time of day and days of the week to deliver that would benefit each customer the most. It's not about you, it's about them most of the time.

When I used to farm on Oahu in Kunia in the mid 70's while still in college, we always had to plan around the traffic, trying our best to travel in the opposite direction to avoid the snarl, and I'm sure Oahu farmers are still dealing with this challenge.

It was not until we came up with the idea of seeking out a large market closest to our farm that could absorb our 2 tons of snow peas each month, which happened to be Times Super Market about 3 miles away! Then those days of fighting traffic to deliver produce went out the window.

For other farmers, the answer may be marshalling produce from many farms, taking turns hauling it in, or paying someone to haul it in. If you're not on your farm, you can't be planting or harvesting, that's for sure.

I remember how a farmer on Molokai determined that it was cheaper to ship watermelons from Molokai to Honolulu than it was to drive it from Kahuku to Honolulu, but the advantage of being on Oahu is that you could deliver on demand. This is the 'pull' in marketing. There's a Yin and Yang to everything, and due diligence goes a long way in finding out what's really going on.

Knowing your competitive advantages and exploiting them are very important in this competitive world, but this is also constantly changing, especially with consolidations in the market place. The recent acquisition of Whole Foods by Amazon is one example of how this can shake up markets, especially if you're selling organic papayas to them.

I made the mistake of showing the Lean Farm book to my wife who is now telling me, "I've been telling you this for a long time!" This information for everyone running a farm 'business' and wanting to do it more efficiently so you have time to enjoy life and maybe even go on the speaking circuit.

We lack leadership all around us and we seem to be losing our basic values of humility and respect, which are some of the hallmarks of this great nation. Because of this diversion from what is real and just, we have to lead and not depend on our leaders to blaze the trail. If you're following someone, they might be lost.

'*Nana I Ke Kumu'* is the Hawaiian phrase for 'look to the source of real information'. We need to embrace our basic Hawaiian values of malama pono, aloha aina, ohana, onipa'a, and laulima, among others. This is what makes us different from any other place in the world.

Because this newsletter is about Lean Farming, I need to keep this newsletter 'lean'. Not to give the whole book away, and make everyone hungry to learn more about this concept, I'm ending it right here…

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Well, that's it for this quarter! Refining our farm operation will always be a work in progress. You can never be satisfied

where you're at because you could be operating more efficiently with no headaches. Cutting waste and running a Lean Machine should be the goal of all Hawaii farms. This is about sustainability!!!

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