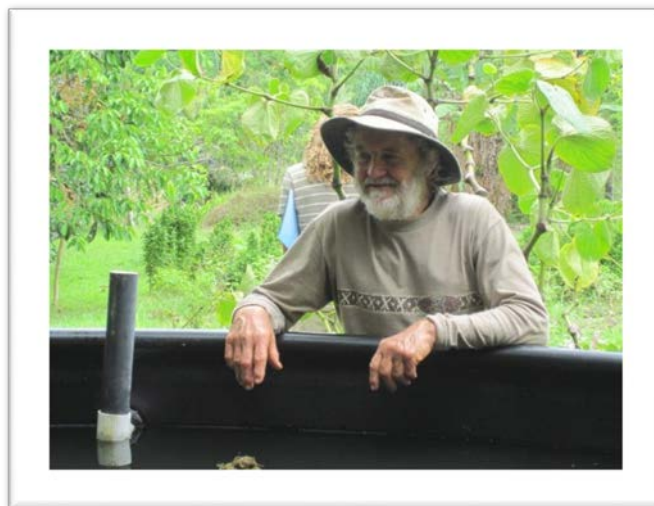


**Paul Reppun and Charlie Reppun, Waianu Farm**



The following questions were posed to Paul and Charlie Reppun, experts in Sustainable Farming, following a workshop they hosted in the summer of 2012. Questions are specific to Paul and Charlie's operation, and responses offer insight into their success. Additional insights from Paul and Charlie Reppun, and all of our 2012 Master Farmers, can be found on Oahu RC&D's website.

**Q: How do you manage weeds and insects?**

**A:** A common mistake is worrying too much about weeds. Another common mistake is letting the weeds get ahead. Let's look at one crop: sweet corn. The field has been tilled, perhaps with some limu applied first and all the organic matter tilled in. Two or three tillings weekly or biweekly intervals will kill germinating weeds, especially if a sprinkler is applied between tillings to get weeds to germinate. When the corn is planted, we water right down the row with the hose so in between the row stays dry. Fewer weeds will germinate this way. Once the corn is growing vigorously and shading out the weeds, stop worrying. Our tools are mowers, weed eaters, hoes, tilling and mulch. Probably crop rotation is the way we mostly deal with insects and diseases.



*Various fruits, including soursop and lychee, are grown on Paul and Charlie's farm.*

**Q. What was the name of the grass you used to help control erosion? What other ways do you conserve soil and water resources?**

- A. The grass is called Vetiver (*Chrysopogon zizanioides*). We haven't used it much but it is supposed to be very deep rooted and non-invasive. If it has time to become established it can stabilize hillsides and river banks. Preventing erosion is easier than fixing. The one place that is most likely to happen is the loi. When we work the mud with a tractor or weed or pull taro we always stop the water in and out and don't restore flow through until the water has cleared or subsided. Loi also collects soil from flood events. Sometimes we purposely direct the flow of the auwai, carrying muddy flood waters into a fallow loi or one just recently planted to capture a layer of silt. Other than fields actively being cultivated in row crops, everything else is vegetated. We cut a lot of grass. We have been experimenting with using goats and sheep to reduce mowing and weed eating. We seldom irrigate dry land crops. Having a high level of organic matter in the soil and using mulch are the best ways to conserve water.

**Q. Where do you get seeds for your vegetables? Your fruit trees? Your taro?**

- A. It is always fun to look at seed catalogs but mostly we buy seed from local store seed racks or garden stores. Our sweet corn comes from the U.H. Seed Lab. Other seeds are mostly for home use gardening, the surplus of which is sometimes sold. There are many nurseries around supplying all kinds of fruit trees. Orphan trees are given to us by friends. Managing a supply of taro huli is important to staying on a planting schedule and having a steady harvest. Many new farmers don't give this enough thought. Sharing of huli in exchange for help pulling taro is common.



*Seeds for fruits trees are supplied by either friends or purchased from nurseries around the island.*

**Q. Do you use a specific crop rotation to help manage fertility and/or disease? What other ways do you manage fertility and disease?**

- A. We don't have rigid formulas for fertilizing and crop rotation. We always have on hand fish/meat/bone meal that we get from Island Commodities in Campbell Industrial Park. Limu is becoming more available from the Nature Conservancy's Supersuckers in Kaneohe Bay, and it complements the fish/meat/bone meal by supplying potassium. When mulch is available and we have time to haul and spread it, we use it around trees and between row crops and sometimes into fallow loi. We rarely grow green manure crop such as Crotalaria, sorghum, or clover. Weeds are the commonest green manure and chicken tractors sometimes are working the fallow fields. "Fallow" on many farms means keeping the field tilled to get rid of weeds, insects and disease. We just switch crops or let the weeds do the work of sequestering carbon and building the soil's fertility.

**Q. At the workshop, we saw a huge variety of plants being grown. Are they for sale or for your own personal use? If for sale, can you tell us to whom and how do you sell your products?**

**A.** Everything we grow is for personal use and also for sale. We go to only one open market per week called Peoples Open Market that lasts for only about an hour. We also deliver produce. About a quarter of our taro is sold directly to consumers, usually for them to make poi and the rest is processed into poi at our own farm kitchen and sold directly to consumers. People often call up wanting a little bit of this or that and it can be a nuisance. The Open Market we go to is called “Banhyan” and is on Saturday morning from 6:15 am to 7:00 am next to Kuamakapili Church and Tamashiro Market on King Street. We often sell produce to Whole Foods in Kahala and Kokua Market in Kapahulu. We use Key Project on Waihee Road in Kahaluu as a drop off point on some days. On the weeks we make poi we sell some from 6:30 to 7:30 pm at the Waiahole Poi Factory building on Kamehameha Hwy.

**Q. How do you manage the harvesting, processing and sale of such a wide variety of products from your farm?**

**A.** Harvesting, processing and marketing are taking up much of our time. We have a certified kitchen on the farm and while we do add value by processing, there is potential for much more. A number of family members and friends divide some income from these activities. We see the next generation expanding and intensifying farming and processing creating more jobs and income from the same farm area. The proliferation of open markets happening now should be very encouraging to people getting into small scale agriculture. Marketing is getting to be more fun.



*Wetland taro is grown on Waianu Farm. After it is harvested, it is either sold directly to customers or processed into poi.*

**Q. As a family operation, do you encounter challenges with dividing labor, income, etc? How do you handle these?**

**A.** Two of us farm and luckily we get along. We don't always get along but are comfortable with arguments. Many new ventures have failed because partnerships have fallen apart. Partners can have different needs, commitments of time, rates of work, values and on and on. We can each work at our own pace at our own convenience without having to constantly coordinate work times. We communicate a lot. We don't have secret methods because when it is time to harvest that work is shared as one.

**Q. What impacts do changes in production (due to season, disease, etc.) have on marketing your product? Cash flow? Labor needs? How do you plan for and manage these variables?**

**A.** The nature of farm work is very tied to the seasons. It is one of the things that makes farming unlike other jobs. Farming is interesting, rhythmical and unpredictable. No day ever seems to unfold as expected. When we talk about the weather it is because it is like an important member of the family. Now with global warming getting into the act even the predictability of the seasons is suspect. Some trees are now fruiting at times of the year they never did before. Hawaii, once very isolated islands is now invaded by many new pests every year. Not long ago we lost most of our bananas to bunchy top. We had to replant about three acres with fruit trees and lately some new varieties of banana. Cash flow of course has been affected but that in itself is not unusual. Crop diversity is an important buffer. Key message is don't put all your eggs in one basket, but it is also important to have a financial buffer as well. Some products produced on our farms are in almost continuous supply regardless of season. For example, taro and sweet potato don't depend on season. Other crops are more seasonal such as corn and most fruits.

**Q. Can a farm be commercial and sustainable at the same time?**

**A.** Sustainability is something we think about and talk about and try to define and work towards but can't really know if it has been achieved until it has been tested in the very long term. Eventually it will, it has to work. Farmers are really a long way from pure sustainability. Mostly everything depends on fossil fuel. We use fish/bone meal as a fertilizer which at the moment depends on long-liners dieseling out to sea and back. Will the fishery survive? Could the boats do the same thing under sail? Will someone buy up all the supply so that it is no longer available to us? We use alien limu. Will it eventually be eradicated? Tree trimmer mulch depends on chippers run on fossil fuel and is hauled back by trucks. We drive our produce to market. Our solar panels have a high environmental manufacturing cost. It is a long way from sustainability. There are solutions to all these problems; ways that we can think of to survive if this or that particular rug is pulled out from under us. Our commercial viability may suffer but if the fossil fuel rug is pulled out from under big agriculture businesses we will be the ones that survive.



*Everywhere you look sustainability can be found on Paul and Charlie's Farm.*

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**Generously supported by the Western Sustainable Agriculture Research and Education Program**