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Community Gardens of Ouou: report on the purchase and installation  
of water irrigation pumps.

The two Ciwara pumps bought with the \$300 given by the Santa Barbara PCA allowed us the opportunity to increase the variety and monetary gains of the gardens in the village of Ouou. Addressing the problem of irrigation within the village gardens, with the help of the Ciwara water pumps, freed traditional labor-time spent pulling water from the well, and watering crops by hand, for more profitable and nutritional concerns. We now could assume a certain facility with watering. So along with the traditional crop of manioc, we planted bananas, papayas, onions, potatoes, lettuce, tomatoes, peppers, carrots, and beets. The pumps were installed in November 1997, and soon after the villagers involved pooled their money to buy necessities; seeds, watering cans, hoses, and fertilizer, both artificial and natural. The gardens were then divided into individual areas, wherein the crop beds were dug. Under the assumption that all the watering would be accomplished through a series of canals and bed flooding techniques. A pump caretaker was decided upon to make sure both were functioning and being used properly. Then the work began. Throughout the experience our learning curve continued to rise until we arrived at an equilibrium, understanding the capabilities of the pumps and adapting our approach to the best possible exploitation of our increased capacities. The villagers were enthusiastic during the cultivation, resulting in a successful endeavor and a desire to improve upon our mistakes the second time. Within the month almost all of the crops will be harvested and either taken to market for sale or eaten; giving a reality to the benefits of the pumps and, I think, reinforcing desires to continue. Already ideas have been decided on which should improve efficiency and output.

Through our experiences with the pumps we found better ways to utilize available resource, which weren't necessarily those we had decided upon in the beginning. Organizationally, the lay-out of the garden wasn't as efficient as it should be. It was originally decided, to parcel out space to individuals, and then work within an individuals space to find the best placement of plants. Thereby circumventing any problems of cooperation during cultivation. If somebody's

plants died it was evident who was responsible. Such a division of labor is fair, but hinders the efficiency of the pumps. By planting like items together, dividing up the garden by crop and not by individual, reduces the amount of canals necessary for irrigation. More cooperation is required on an individual basis, but the practicality was seen by all when it became obvious that not all areas of the garden could be reached by a simple dirt canal, leaving some individuals and beds at a disadvantage. Pre-planting organization of the gardens should increase in importance. As we started planting, learning more about the crops and the capabilities of the pump, we found some of the plants ill suited to our initial bed flooded irrigation techniques. Onions, lettuce, carrots, and in fact all low to the ground or root bearing fruit were overwhelmed by bed flooding. Plants more suitable were the bananas, papayas, potatoes, and peppers. We were forced to find different solutions depending upon the type of plant watered. For the plants that couldn't thrive by flooding, we relegated the pump to little more than a manually powered faucet, filling up our watering cans from it rather than from water pulled from the well. We think, next time, if we get a larger flexible hose and attach it directly to the pump we will be able to water plants like onions, that simply can't withstand the erosion factor of bed irrigation. As we continued with our initial idea of bed flooded irrigation it also became apparent that we had disregarded the effect of the slope of the garden, unaware that with canals dug in the dirt, water will take the path of least resistance, regardless of the force of the water flowing through the canals, which usually meant pooling at some level and then overflowing the canal. We re-did the canals to follow the contours of the gardens and had much more success in channeling the water to its intended destination. When we did have an incline, we relied on PVC pipe to guide the water where needed.

It was by all accounts a success, with much to improve on the second time around. I had to resign myself to the reality that these two pumps couldn't in fact, directly serve more than the seven people (and their families) that were gathered together for the work, but the harvest should affect a change on the diet and health of many more. It was encouraging to note that two weeks ago a third Ciwara pump was bought, this time without outside help, and they should begin working with it very soon. As we explained to the new owners how the pump works and our successes and problems, it soon became apparent that our garden, with all its faults, stalls, adaptations and frustrations made a difference to the gardeners involved and created interest outside its original scope; a testing ground with worth in its problems and solutions.