



**COMMUNITY FIRST**  
creating local solutions to global problems



It has been an excellent and innovative year for Community First despite the lingering COVID-19 situation. But as Cambodia and other places in the world are reopening their doors, the organization is now ready to expand with two pressing objectives: (1) training rural families facing malnutrition and (2) expanding the production and training capacity of the Farm School.

The Community First Farm School is where families come to train in aquaponics before starting their own food systems at home. Such systems provide fish, a source of dearly needed protein and vegetables, while also creating economic opportunities for families by selling their produce.

To provide more training opportunities to more families, our main training greenhouses at the Farm School need to expand their demonstration and training systems, as they are only at about 70% capacity. The plan is to add additional growbeds and new techniques to demonstrate and showcase the full potential of aquaponics to our students.

As the Farm School couldn't gather large groups of training during the height of the pandemic, the emphasis was on perfecting the pedagogy of training and creating even more effective systems for families. These new systems use an airlift pump system instead of conventional water pumps, which presents two significant advantages:

(1) It reduces the power requirements of this new approach to such an extent that it can run on a single solar panel without batteries. It will ensure that even the most impoverished families can start their aquaponic farms, thus making this solution more available to those who need it the most. As a result, even families without access to electricity will be eligible for training.

(2) In the long run, this enhanced approach also significantly reduces maintenance costs. By using an air pump with no moving parts instead of a conventional water pump, the engine of this new aquaponic system does not need as much upkeep. Again, this makes aquaponics more broadly available through cost savings, especially for families experiencing extreme socio economic distress.

These two main features are why we plan to create a medium-scale system to introduce families and train them using this technique at the Farm School. Community First has already built a successful prototype. Therefore, this project involves scaling up a proven and fully functional design and only requires building materials.



In addition to constructing this innovative airlift aquaponics system, the existing training infrastructure at the Farm School needs additional growbeds to enhance its filtration capacity. Thanks to the fish tanks funded by the San Marino Rotary Club, the Farm School expanded its fish stock significantly. However, to grow crops more effectively, additional grow beds are needed. These additional growbeds will also provide more training areas for students and enable the Farm School to grow more produce to sustain itself.

## Current Airlift Prototype & Additional Growbeds





# Financials

<b>Airlift system</b>	
Stand & structure	\$300
Plant system	\$250
Solar power system	\$150
Fish tanks & filter	\$125
Pipes & hydraulics	\$175
<b>Total</b>	<b>\$1,000</b>
<b>Additional Growbeds</b>	
Gravel & growing media	\$800
Growbeds	\$450
Bricks & concrete	\$425
Pipes & hydraulics	\$175
Other	\$150
<b>Total</b>	<b>\$2,000</b>
<b>GRAND TOTAL</b>	<b>\$3,000</b>

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