*Locally grown, sustainably produced food is the foundation to healthier eating, healthier lifestyles and healthier more vibrant communities.*

*Coloradoans spend $12 billion annually on food, 97 percent of which is imported from outside the state.*

## Executive Summary

Aquaponics is the ultimate green technology - local food production within urban, suburban, rural or village settings. Aquaponics bio-integrates aquaculture (growing fish) and hydroponics (growing plants in a soil-less media). Warm, nutrient-rich water recirculated from fish tanks acts as renewable fertilizer for plant growth and the plants act as a biological water filter, thus using less than 10% of the water of soil-based field farming. Local and sustainable food production is vitally important to lessen demands on land, water and natural resources, while reducing carbon emissions and pollution. Due to the increasing population, scarce resources and continuous demand for nutritious food, some have considered aquaponics and vertical farming methods the technology boom of the future, providing green jobs and stimulating the local economy.

## Flourish Farms' Mission

Our mission is to lay the foundation for local, sustainable food production with a reproducible, financially viable business model. We will produce 1,000lbs of fish alongside 20,000lbs of petro-chemical free, lettuce, herbs and leafy green vegetable varieties, grown year round in a 3,000sq ft greenhouse facility, without extensive waste or natural resource consumption. The greenhouse will be located in the Elyrea/Swansea neighborhood in Denver, Co within a 5 mile radius of hundreds of high-end restaurants, farmers markets, health food stores. Once this facility is fulfilling productivity and profitability expectations, the model will be reproduced in other locations throughout the state, US and based on current interest from other countries, throughout the world. This is just the beginning of a massive transition in beneficial local food self-reliance.

## Business and Sustainability Goals and Objectives

- Produce high quality, local food products with minimal environmental impact, operating costs and waste
- Create local green jobs, fair wages and a quality work environment, stimulating the local economy
- Build lasting industry, community and customer relationships, growing local food and minds through educational outreach
- Offset the detrimental impact on natural fish supplies, and allow existing farmland to be more appropriately utilized
- Repurpose buildings, reuse materials and reproduce aquaponics systems in various new marketplaces

| Current Situation | The Opportunity |
|---|---|
| The majority of lettuce and herbs consumed in Colorado is transported 1,300 – 2,000 miles from California and Mexico. | Trends indicate chefs and locavores are demanding locally sourced meats, seafood, produce, and sustainability produced food products[i] |
| In 2016, 95M pounds of tilapia was imported from other countries, mostly in Asia, traveling roughly 6,500 from pond to plate. | Aquaculture has grown faster than any other form of food production. In 2012 global volume of farmed fish exceeded global beef volume |
| Farming, processing, packaging and transporting food creates 83% of carbon emissions while consuming massive natural resources. | Growing food close to consumers means more nutritious, fresh food availability and stimulates the local economy. |
| Consumers are concerned about food quality and safety, fertilizers, GMOs, pesticides, and contamination. | Anti obesity and nutrition programs are increasing demand for fresh vegetables and fish. Consumers are buying more organic products. |
| The US population may reach 560 million by 2050, while conversely, 3 million acres of arable farmlands are lost every year.[ii] | Aquaponics allows food to be grown in existing buildings near consumers without soil, which also means no soil-borne diseases. |
| 41% of all fresh water is used for field crop irrigation. Fertilizers must be applied to provide nutrients to plants, often creating polluting run-off. | Aquaponics uses just 10% of water used in soil crops, it is continuously monitored for quality, and used as natures-perfect fertilizer. |
| Environmental changes and severe weather have decimated crops and are predicted to be more dramatic in the future. | Growing year round in a greenhouse helps to protect against weather extremes while also offering better pest management and food safety. |
| ***Because of these and other factors, food production can be considered one of the most unsustainable human activities.*** | ***You never change things by fighting the existing reality. To change things build a model that makes the existing model obsolete.*** |

## Product, Price, Promotion, Placement, Packaging

***Produce – Salad Greens, Traditional and Asian Cooking Greens, and Culinary Herbs***

- **Product** – 20,000lbs of high quality, chemical-free greens and herbs annually
- **Price** – Greens $1 - $3 per head, Herbs are $2.99 for 2/3 oz, up to $20 per pound.
- **Promotion** – Local, more sustainable production methods, and same day harvest distribution for the freshest, most nutritious produce.
- **Placement** – High end restaurants, health and specialty stores, farmer's markets, CSAs
- **Packaging** – Tied bunch, live harvest in bag or clam shell, bulk cases

***Fresh Locally Raised Fish – Tilapia and Trout***

- **Product** – 1,000lbs of fish primarily tilapia, catfish, hybrid striped bass and ornamental koi.
- **Price** – 3.99 to $9.99 per pound. Live fish for stocking is $1 - $5 each depending on size and species. Koi $10 - $100.
- **Promotion** – Sustainably raise, high water quality, very little local aquaculture production
- **Placement** – High end restaurants, health and specialty stores, farmer's markets, CSAs, direct to customers for stocking their own home aquaponics system, pond enthusiasts
- **Packaging** – Live catch, whole fish, on ice. Local fish processor, restaurant or fish market facility will gut, scale and fillet.

## Proof of Concept – Local Focus, Global Impact

Colorado Aquaponics has built and maintains a community scale aquaponic farm in partnership with the GrowHaus, a non-profit farm and market located in a food desert. Through building this proof of concept farm we have had the chance to build relationships with a large contention of restaurant owners, chefs, government officials, schools, and various other organizations from around the world excited about the potential that aquaponics brings to growing local food. We also have affiliations with Grow Local Colorado, Transition Colorado, Recirculating Farms Coalition, and Food&Water Watch.

## Colorado Aquaponics' Team

Colorado Aquaponics was created November 7, 2009 and filed as an LLC on September 21, 2010. We established Flourish Farms as a brand for our farm system and food products, trademarked doing business Feb 15, 2012.

JD Sawyer – Owner, previous Director of Operations at Johnson and Wales University, responsible for multi-million dollar project management building renovations, master planning, budget control, campus-wide facilities management, contract coordination, managed a staff of 60 employees. JD has extensively researched and trained at various aquaponics facilities throughout the US, as well as building, maintaining, consulting and providing training on our various home and community based systems.

Tawnya Sawyer – CA Director of Education and Business Development, owns TSolutions Inc specializing in business and research analysis, consulting, technical writing, system design and development, and facilitation for clients worldwide. Provides training, documentation, web development, marketing, office management and a variety of other mission critical business functions.

Greenhouse Manager – Responsible for the daily operations of the aquaponic farm including seeding, transplanting, harvesting, pest scouting and spraying, fish health, water quality testing, nutrient adjustments, food safety, greenhouse cleaning and maintenance, customer interactions, packaging and delivery

Advisory team - We have established a well-rounded group of advisors specializing in aquaculture, food production, marketing, regulatory compliance, greenhouse growing, marketing, accounting, finance, community relations, local government agencies and sustainable energy.

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[i] National Restaurant Association, Chefs survey, www.restaurant.org/foodtrends.