



The Fabulous Fish Farm

Barbara Börner, Endevo | „Stories about us – how to tell your business narrative“, an initiative of Siemens Stiftung

A fish farm in a container transforming South Africa's aquaculture industry? Sounds crazy. But a container fish farm in a township is already doing just this. With vegetables growing on the side fed only by water with the fish waste. And it can be run on solar energy. Sounds cool? Yes, indeed it is. This is Alan Fleming's vision and what he's been working on for the last five years – step by step.

Experiences

Alan's first employee, Lungile Mafilika, has plenty to say about their joint learning curve. Cape Town faces regular power cuts, and once, during an unannounced outage, Lungile Mafilika and his colleague Patrick Kawuti realized that red tilapia tolerated a lack of oxygen while grey tilapia didn't. The red tilapia also had the side benefit of being better looking and faster growing.

Their colleague Nceba Nkohla describes how much patience it takes to be a fish farmer, as the fish need to be fed four times a day, seven days a week for about six months until they can be sold. For that reason, Nceba prefers being an employee with a safe wage to being an entrepreneur. Every day, Nceba checks the pumps, the filters and the water quality, following a simple principle – if you can see to the bottom, the water is good; if not, the tank has to be emptied and filled with fresh water from the bore hole. The procedures are easy to learn, but need to be carried out consistently.

The team once gave three new people a chance to work on the farm.

Within a week they had killed hundreds of fish through fiddling with the oxygen in the water and not feeding the fish properly. In contrast to these careless adults, the kids from the neighboring school were curious and came at lunchtime to watch the fish. Two or three of them talked to their teacher, and Lungile ended up giving lessons to three classes. The children were so enthusiastic that the teachers even set an exam to test their knowledge about the fish farm, and interns from the school regularly worked there for two-week stints.





Who is Alan Fleming?

Growing up in South Africa before 1994 meant living in a first-world country if you were white, or a third-world country if you were black. A lot has happened since the end of apartheid, yet poverty – bound up with poor education, housing and job opportunities, and high crime rates – is still a huge challenge in South Africa, especially in the townships. Alan Fleming, the founder of the Fish Farm, has been active in poverty mitigation for a long time. As a director of a business incubator in the township of Philippi in Cape Town, he empowers local economic development: for example, through turning a row of shipping containers into brightly colored and safe office space and shops that are rented to local businesses at an affordable rate. His experience of community needs and challenges – as well as strengths – is extensive.

In a previous life, Alan worked in farming, having an academic background as an agronomist. Fish farms fascinated him for a long time as a sustainable means of reducing overfishing of the seas. Eight years ago, Alan bought a batch of fingerlings and grew them in porter pools in the grounds of the business incubator.

SIDE STORY

“A heavy obsession”

Lance had started fish farming in a garage and was immediately convinced by Alan’s containers – he and Alan were two minds alike, with the same idea of modular containerized fish farms. This form of aquafarming has become a “heavy obsession” (Lance’s words), and in the past two years, he has invested a lot of time and money in addressing the technical challenges. After starting with one container, he experimented with five, and later with a system of tunnels aiming to achieve scalability through modularity.

Together, Lance and Alan added aquaponics to the prototypes, a technology using the nutrient-rich water of the fish tanks to grow vegetables and salad. The organic waste from the fish (i.e. the fish poop) supplies the plants with all they need – earth or additional fertilizer are unnecessary. The electricity for the water pumps comes from solar panels, so Alan’s fish farms can now be fully sustainable.

The journey begins

Then, five years ago, Alan had this vision of a fish farm in a container. To most people, the idea would have seemed bizarre, but he convinced the National Development Organization and Pick’n Pay Foundation to fund the first two prototypes. Most fish farms are big operations – cumbersome, expensive and taking up a lot of space. Alan’s idea of a small operation adapted to the local context made sense right away.

In a fairytale, the story could end here, with Alan being the right person in the right place with the right idea at the right time. But in reality, this was only the first step on the way.

Challenges

In the following years Alan had to master several challenges. These included technical problems such as determining the most efficient shape for the tanks and finding the best food for the fish; the hardest task, however, was to reduce the complexity of running a fish farm to a point where unskilled workers can run the daily operations.

Finding the right partners for a venture like this is like kissing frogs to find the prince: a long process of trial and error before the best candidate emerges. Three years passed before Alan found Lance Quidding, his technical counterpart, whose aim is simply to become South Africa's best fish farmer. This allows Alan to concentrate on his own role and look for the other parts of the puzzle – the partners who can turn his vision into a reality on the business model and impact side. Here, the focus of the project shifted in the light of experience. Fish farming for income security makes sense; ecological fish farming against overfishing, too. But food security didn't work out – Cape Townians in the townships don't eat fish.

Alan intends his fish farms to be community-owned. He knows that these business models face challenges, such as a lack of competent management or exposure to power politics. One way of addressing these issues is to cooperate with a social organization that works continuously in the community and runs the fish farm as part of its regular operations. As Alan says, you need staff who speak the local language and understand the "jive talk": people who know how to move and how communities think. By bringing in money and importing staff, Alan could have set up fish farms all over South Africa, but this would have been a quick and sure recipe for failure.

Alan's original intention was that the fish should improve food security, providing a source of healthy nutrition for poor communities. But he had to learn that, even though Cape Town is situated directly by the sea, people in townships don't eat fish. Now the focus is on securing income by selling to restaurants and wholesalers. The high-quality tilapia, coming from a local ecological source, is much sought-after. Alan wants to keep the responsibility for sales as part of his business, so that the local fish farms only have to concentrate on growing enough fish.

The way ahead

Through perseverance, Alan Fleming found suitable partners to get going. This calls for patience, talking to many potential collaborators in a process of trial and error, but finding the right partners at the right time is also partly a matter of luck. Alan intends to grow tilapia in the summer and trout in the winter. This allows for two harvests per year without having to maintain a constant water temperature. Tilapia like warmer water with less oxygen, whereas trout love oxygen and don't mind cold water.

The first roll-out will be based in Pelican Park, a new quarter in Cape Town where people previously living in shacks are given houses by the government, while others buy or build their own. The Ruben Richards Foundation realized the importance of community-driven development in the quarter, where a community spirit, involving responsibility, respect, ownership and a sense of belonging, has to be built from scratch within an explosive mix of inhabitants. The Foundation has included the fish farm in its development plan, as a project offering professional training and jobs that create regular income and a revenue stream for the community. A British backer is funding the fish farm in Pelican Park.





Alan had to accept one change in his original plan – the first commercially sized fish farm in a township will be not be in containers, but in a fenced area on the ground, in basins with tunnels. He is also testing the organizational structure he has developed, with himself at the center, additionally taking responsibility for sales of the fish, while Lance takes care of the technology and installation and the team at Richard Rubens Foundation oversees everyday operations. Depending on the results of the Pelican Park project, Alan will scale the business up or down. So the end of the story is simultaneously a new beginning with new challenges.





The complex situation in South Africa

Being in South Africa as a German reminds us often of our own history and the long path to reconciliation following World War II and then again after reunification. Twenty-two years after the end of the apartheid regime, some people feel that the development of society and the country as a whole should have made more progress. However, healing the traumas and injustices of the past will take generations.

Many programs set up by the government and non-governmental organizations strive for reconciliation: for example, by providing free homes in Pelican Park for people who have lived for generations in township shacks. This is done with the best of intentions, but how is someone with an income of \$2 a day expected to maintain a house? In the salty sea air of Cape Town, this involves regular and thorough redecoration. How do you afford the paint for that? By not buying urgently needed shoes for your child? Other countries with longer experience in poverty mitigation – India, for example – have developed different programs, such as a pro-poor loan scheme for housing. Building your own house and paying for it yourself, at affordable rates, fosters a sense of ownership that reduces local crime rates.

Alan Fleming is not looking to sell fish farms to people who have a hard time getting by. He regards the project as a step toward reconciliation, seeking to empower individuals and communities to generate an income independently of the government. His aim is to develop an ownership structure that ensures professional management and profits for the community.

From the outside, it's tempting to cite the negative experience of other countries, but who are we to judge? Even a local expert on inclusive business models, who has seen a lot of community enterprises fail, admits that successful examples do exist. Let's hope that Alan can take over and become the person who changed the South African aquaculture industry with community-owned business models.

The project “Stories about us – how to tell your business narrative”

People ask for data, but believe in stories. Stories are things that people know, love, and remember, and when thinking about a business they know, facts and figures are secondary. We consider this a good thing: narratives can be a real asset for any social enterprise. And we are convinced that social entrepreneurs can use storytelling to reach out to their network of investors, customers, and other stakeholders and to gain new insights into the development of their business.

The Fabulous Fish Farm story was produced as a part of this project.

Stories about us – how to tell your business narrative.
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The author of The Fabulous Fish Farm story

Barbara Börner is a senior professional with extensive experience in impact driven commercial companies and not-for-profit organizations. As associated expert of Endeava, a research and consulting institute, she focuses on

poverty mitigation through enabling inclusive businesses in the Global South. Barbara strives for change through advising non-profit organizations and enterprises on strategic and business development. She develops new supportive instruments by blending venture philanthropic approaches with effective methods of development cooperation. As managing director of Lust auf besser leben gGmbH (Enjoy Better Life) she focuses on empowering sustainable communities. The organization creates solutions to integrate sustainability into everyday life and support the development of a sound local economy.

For more than 15 years Barbara managed international programs in the sustainability and development sector. She led as deputy director Canopus Foundation's program development and worked in the solar industry for Solar-Fabrik AG and S.A.G. Solarstrom AG. Barbara teaches Social Entrepreneurship at an international master's program of Freiburg University.

Siemens Stiftung

As a non-profit corporate foundation, we promote sustainable social development, which is crucially dependent on access to basic services, high-quality education, and an understanding of culture. To this effect, our project work supports people in taking the initiative to responsibly address current challenges. Together with partners, we develop and implement solutions and programs to support this effort, with technological and social innovation playing a central role. Our actions are impact-oriented and conducted in a transparent manner.

Working area: Basic services

Secure access to basic services is indispensable for people to lead independent and dignified lives. Our goal is to reduce existential deficits in basic services and strengthen necessary social structures. With our international *empowering people. Network*, we bring innovators and social entrepreneurs together and foster the combination of technical and entrepreneurial concepts. This allows us to promote the spread of suitable solutions, maintain a platform for knowledge transfer, and enable networking of development collaboration organizations. Locally-operating projects are run together with partners and implement innovative as well as proven solutions. Additionally, we impart the necessary knowledge to ensure that self-supporting structures can contribute to a permanent improvement in basic services.

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Technologies for basic needs

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