

Company Profile

Shaldag Limited is a greenfield aquaculture production company seeking to take advantage of the supply deficit in fish production in Nigeria. Nigeria currently expends over \$1B USD in foreign exchange annually on fish imports. Shaldag aims to substitute a portion of this import with quality local production. The company has constructed its first fish farm in Lagos, Nigeria, with the capacity to produce 2,500 Metric Tons (MT) of fish per annum. The farm will have a capacity of 10,000 MT per annum over the next 3-5 years and will be comprised of a hatchery, nursery and an on-growing section, with future plans to backward integrate into feed production. The farm has adopted the use of re-circulating aquaculture system (RAS) technology for its fish production that will result in using one-tenth of the water requirement of a traditional farm with the same capacity. During the construction of the farm, Shaldag leveraged the existing land topography to ensure that water flow is achieved via gravity instead of mechanical pumps. Shaldag has employed people from the local community for its operations, sponsored local community's youth programs and has also invested in an access road (an investment of approximately \$285,000 CAD) that has significantly improved the economic infrastructure of the local community.

The Challenge

The RAS technology implemented by Shaldag helped the company reduce the amount of water needed to run fish farm operations. However, the technology requires that water in the facility is constantly treated for waste so it can be re-circulated for use. This process requires consistent availability of power. Shaldag farm is located in a local agrarian community that is currently off the national grid. Hence, it has installed two 135kVA generators (one as a back-up) and one 50kva generator to guarantee uptime. The constant burning of fossil fuel through the use of diesel generators produces a significant amount of greenhouse gases. Shaldag is concerned that extended burning of fossil fuel in the local agrarian community might have a long-term impact on the biodiversity of the community.

In addition to the environmental concerns, diesel is extremely expensive and the company has witnessed a significant price increase in diesel, primarily due to the devaluation of the local currency. Shaldag expects this increase in price to continue as the local currency devalues further, thus increasing Shaldag's operating costs and placing significant pressure on operating margins.

The Sustainability Innovation Grant (SIG)

In October 2016, Shaldag was awarded a \$114,903 CAD Sustainability Innovation Grant (SIG) from Global Affairs Canada through a project managed by Mennonite Economic Development Associates (MEDA). The company planned to invest \$229,806 CAD in matching funds to implement SIG activities. The main purpose of the SIG was to replace diesel generator fuel with solar panels that would help eliminate environmental pollution and biodiversity concerns associated with greenhouse gases, with significant cost savings for the company.

The company believed that, in addition to environmental sustainability and cost saving, the SIG initiative would benefit the wider community. The project will demonstrate and validate the use of clean energy to boost agricultural production. Shaldag planned to transfer some of the knowledge from this initiative to the local community by arranging training sessions for youth and community leaders in the community.

SIG Impact

The SIG initiative (i.e. installation of solar panels) has not been launched yet due to delays in procuring solar panels. Shaldag believes that upon successful implementation of this project, it would be the first aquaculture company in Nigeria, using solar for its power needs and would spur interest in clean energy sources by existing and potential investors in the sector.





Sustainability

Once environmental benefits and cost savings from implementing the solar system have been validated, company management is committed to replicating the project in subsequent expansion plans of the business. In addition, Shaldag intends to disseminate data collected from its controlled farm environment program to local universities and research institutes in a bid to share best practices for local aquaculture, improve learnings in universities, and encourage the local production of other fish species. Shaldag's philosophy is that by sharing this knowledge with the local communities, it can actively curb overfishing of local rivers. Once implemented, Shaldag's sustainability initiative will contribute to Sustainable Development Goal # 7: Affordable and Clean Energy.

7 AFFORDABLE AND
CLEAN ENERGY



Lessons Learned

Shaldag was quite ambitious in launching the SIG initiative and did not take into account its cash flow situation and the time that it would take to import solar panels from abroad to Nigeria. The company learned that adequate time should be allocating to importing goods (e.g. solar panels) from abroad as the business must satisfy import and export criteria of two different governments.