

GOLDEN STAR 



**Golden Star Oil
Palm Plantation**

Golden Star Oil Palm Plantation

The Golden Star Oil Palm Plantation (GSOPP) was established in April 2006 as a non-profit subsidiary of Golden Star.

GSOPP in partnership with the Traditional Authorities, and affected farmers, with the support of the agro-forestry industry, promotes the development of oil palm plantations amongst our catchment communities, using the smallholder concept.

Through GSOPP, we continue to advance the businesses objectives of reducing poverty through employment generation, and promoting wealth creation through sustainable agri-business.

Funded by Golden Star through US\$1 per ounce of gold produced, to date we have directed over \$6.6 million to this important initiative.

From Little Things, Big Things Grow

Golden Star as part of its Alternative Livelihood Programs identified oil palm cultivation as a leading sustainable economic venture within its areas of operation. At the time, the Government of Ghana had a policy to encourage mining companies to establish alternative livelihood programs to ensure restoration of natural resources and enhance socio-economic conditions during and post-mining.

A study by the Oil Palm Research Institute confirmed the suitability of the area for oil palm production - our operations are situated in what is known as the oil palm belt of West Africa – and as a result, a Memorandum of Understanding was executed between GSOPP, the Traditional leaders and Benso Oil Palm Plantation Limited (BOPP) in 2006, in which the parties agreed to collaborate in establishing a smallholder oil palm plantation to benefit community members.

Under the MOU, BOPP provided technical and advisory services to GSOPP to ensure the successful implementation of the scheme and BOPP purchases the fresh fruit bunches until such time that GSOPP is in a position to establish its own plant for downstream processing.

The GSOPP Model

GSOPP has developed a unique approach to land acquisition. Through extensive community engagement and consultations, GSOPP solicits lands from local chiefs, and/or landlords who offer their lands and in return benefit directly from the oil palm cultivation. This is a form of partnership arrangement which promotes more productive use of the land, resulting in long-term employment and income generation in the catchment.



Currently, approximately 6,700 hectares of land have been pledged by the chiefs for oil palm development using the smallholder concept and for which Memorandums of Understanding have been reached. As at the end of 2018, 1,133 hectares of land was under active plantation.

GSOPP, with the Golden Star contribution, develops the plantations on the lands offered by the chiefs using a local labour pool from the host communities. This creates immediate employment and stable incomes for households on the plantation.

After 4 years of development under the direct management of GSOPP, the plantation reaches income level, and 4 hectare plots are allocated to selected farmers to maintain as their own. GSOPP continues to provide support, management and agricultural extension expertise to farmers, and the farmers receive an interest free loan to develop their plantation. The selection of beneficiary farmers is based on impact, and resident status within the host community. To date, 317 smallholder farmers have been fully inducted into the GSOPP scheme.

Tenancy agreements are then established with the selected farmers incorporating loan re-payment, obligations for maintenance, harvesting and sale of farm proceeds. The interest-free loan repayments are directed back into GSOPP for the continued operation, and expansion of the program.

With this concept of partnership, the major issues confronting land tenure associated with large scale agricultural developments are to a greater extent minimized.

In 2018, GSOPP commenced a revolving fund (microcredit scheme) for farmers and farm workers. This scheme will act as a model for savings, ahead of re-planting in the next decade.



Women make up almost a third of the GSOPP workforce as both farmers and contract labourers. Mrs. Elizabeth Quicoe, shown here, is a contract worker at the Bogoso plantation.

The Impact

Employment

To date GSOPP involves 317 small-holder farmers, and employs some 450 contract workers each year. GSOPP has 1000 hectares of scheme smallholder oil palm plantations established in six host communities, and 133 hectares of scheme out-grower oil palm plantation on individual land holdings. GSOPP operates in a number of Districts in Ghana.

GSOPP is an important employer in host communities, and hundreds of applications are received when new participant farmer positions become available.

Earnings

Production of fresh fruit bunches commenced from the initial 2006 plantings at a modest 529 tonnes in 2010, increasing to over 10,000 tonnes in 2018. Since 2010, a total of 63,761 tonnes of fresh fruit bunches have been produced and sold. With much of the plantations having reached fruiting maturity, fruit production in 2015 had increased by 46% on 2014, and 2016 production was a 33% increase on 2015, providing a good income to the smallholder farmers.

GSOPP farmers earn 4.7 times the National mean consumption level and more than 17 times the current Ghanaian poverty line.*

Agricultural Yields

At GSOPP we are achieving a small-holder plantation yield of 18 tonnes of fresh fruit bunches per hectare, compared to a National average of just 6 tonnes per hectare. This is three times the National average for small-holders and these significant achievements are attributed to the application of best agronomic and management practices by GSOPP. A 2011 Master Plan Study of oil palm in Ghana showed plantation estates were achieving 12 tonnes per hectare, also exceeded by GSOPP.

GSOPP yields are three times the National average for small-holders.

Standards

As a signatory to the United Nations Global Compact since 2005, Golden Star acts to integrate the Compact principles into our business activities, including upholding the Universal Declaration of Human Rights within our sphere of influence. Tenancy agreements with GSOPP farmers are mutually agreed, and company policy prohibits the use of child or forced labour.



Recognition

In 2008 Golden Star was awarded a prestigious **Nedbank Capital Green Mining Award** in recognition of the creation of and continuing efforts on GSOPP. The first non-South African company to receive a Nedbank Capital Green Mining award in any category.

GSOPP continued from strength to strength and as part of three separate National Farmers' Day celebrations, the Ghanaian Ministry of Food and Agriculture awarded the Golden Star Farmers' Association (Bogoso) the **Best Farm-based Organization Award** for the District. At one of these ceremonies, a GSOPP participant farmer, Mr. Tuffour Quaicoo, was awarded the **Best Oil Palm Farmer**.

A 2016 review by the European Centre for Development Policy Management funded by the UK Department for International Development, found that Golden Star has a "**pragmatic way of working in the communities**" and that GSOPP is a "**sophisticated initiative**."

In 2018 Golden Star was awarded **Best Corporate Social Investment** for GSOPP at the Ghana Mining Industry Awards and won the prestigious **PDAC Award for Environmental and Social Responsibility** in the same year.

* Ghana Standards of Living Survey Round 6—Poverty Profile in Ghana (2005-2013).

The Future and Sustainability

When conceptualized, the establishment of GSOPP and maintenance of the project to maturity was identified as the first stage of implementation.

Key aspects of the sustainability have included:

- The partnership approach to land tenure avoids displacement, and maintains protection of Forest Reserve and other gazetted or protected land classifications.
- Regular capacity development and technical training for farmers.
- Routine communications and engagement on progress against annual action plans.
- Agricultural extension support provided by Wilmar BOPP and Solidaridad West Africa.
- Conduct of a poverty impact assessment and baseline study with the technical expertise of Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ).
- Further support of GIZ in agricultural capacity development, and support in the establishment of farmer business schools (covering aspects such as savings and pension planning and other financial management skills development).
- GSOPP is undertaking the process of gaining certification for good plantation management by the Round Table on Sustainable Palm Oil (RSPO).
- In 2017/18 some 100 hectares of new plantation was established on formerly mined land. A direct demonstration of mining and its coexistence with other land uses, using the concept of multiple and sequential land use.

Extension System

The GSOPP initiative incorporates an extension system to further enhance livelihoods and sustainability aspects.

Baseline studies and field census data were collected to inform on needs. Extension project elements were developed and address:

- Extension support and training in oil palm agronomy.
- Simple farm records keeping and accounting.
- Establishment of bank accounts and banking support.
- Training and organization of Farmers' Associations.
- Field advisory visits and meetings.
- Farm demonstrations, plots and trial areas.
- Scheduling of harvesting operations, and systems for transparency during weighing.
- Socioeconomic surveys and reviews.

Oversight and Integration

To ensure GSOPP delivers the social enterprise intervention and sustainable legacy for which it was founded, Golden Star provides the highest level of oversight. A five member Board of Directors, made up of senior executives of Golden Star, ensure maximum oversight, strategic integration, and sustainability guide all GSOPP planning and decision making.

Further support to GSOPP is provided by Golden Star corporate responsibility, business and legal functions.



Oil Palm Mill Concept and Business Plan

Having established a sustainable plantation business, following the 10th anniversary of GSOPP we are now focused on future organic growth and the evolution of GSOPP to incorporate down-stream processing through the establishment of a milling facility.

As these plans evolve we expect to see ongoing benefits flowing from this important social enterprise endeavor as we remain focused on our objectives for poverty reduction through employment generation, and promotion of wealth creation through sustainable agri-business.

Local Processing to Add Value

GSSOPP sells all fresh fruit bunches to the Wilmar BOPP organization, over 80km from the core GSOPP plantations. As a result, transport represents almost 20% of the farm-gate price for the fresh fruit bunches.

By developing a 10 tonne per hour oil palm mill GSOPP will be able to process its fresh fruit bunches into crude palm oil which will be sold to Wilmar BOPP. The expansion into local downstream processing will enhance the local value chain, increase revenues to famers and communities, and reduce costs associated with transportation.

Options Assessments

Options assessments were conducted to determine processing methodology and mill sizing. In view of the size of the GSOPP plantations and independent smallholder farmers in the area, a 10 tonne per hour mill (medium scale) was identified as the optimum solution.

Initial designs and costing of the mill have been developed by Solidaridad and are estimated at US\$3.7M. A preliminary business proposal has been prepared by GSOPP in a bid to attract appropriate financial support from partners that share our objective that GSOPP remain not for profit, as a sustainable and genuine legacy for our host communities.

The mill will operate 12 hours per day, 22 days per month. An oil extraction rate of 20% has been applied (applicable to the GSOPP hybrid grown), and translates to 528 tonne crude palm oil (CPO) per month. At a rate of 85% utilization, and processing of 26,928 tonne fresh fruit bunches, 5,386 tonne of crude palm oil would be produced per annum.

The process flow for the proposed oil palm mill is:

- Bunch reception
- Fruit sterilization using high temperature wet heat.
- Threshing to remove fruit from bunches
- Bunch storage to produce manure by-product
- Fruit digestion and pressing
- Clarification and drying of oil and oil storage
- Kernal recovery to produce by-product palm kernel oil
- Kernal shell and palm fibre recovery to produce by-product fuel for fruit sterilization and clarification.

The Economics

The oil palm mill offers the potential to significantly increase revenues to participant farmers and host communities, and is, of itself, a feasible proposition, with strong positive financials.

Free Cash Flow

Mill project evaluation demonstrates positive operating and net cash flows.

Net Present Value (NPV)

The NPV of post tax cash flows at a 10% discount rate is US\$2.8 million.

Project Internal Rate of Return (IRR)

The Project internal rate of return after tax is 26%.

Payback

The payback period after tax is 3.7 years.

Evaluation Summary

The post tax NPV, IRR and payback demonstrate the project's positive feasibility.

Under an interest free loan scenario, the project financials are even more positive, with significant and direct benefits to flow to farmers and host communities.

Please review the GSOPP Mill Feasibility Study brochure for more information.

Upside and Growth

The GSOPP mill evaluation has been conducted on a conservative base case model excluding potential upside.

There remains significant upside potential for GSOPP in the terms of the following:

- Assumed CPO prices are lower than the long-term average achieved price.
- There remains the potential to attract outside purchased fruits (OPF) to the mill business for additional profitability. Fruits grown within a 50km radius could be viably transported to the GSOPP mill.
- Organic growth of the GSOPP plantations is not included beyond 2018 despite land commitments by host communities.
- Oil palm plantation is the agreed next land use in a number of current and active mining areas. Further plantation organic growth will be achieved as these sites are reclaimed.

With the addition of downstream processing, revenue to farmers and communities will increase even further, enhancing the sustainability of this legacy.



What GSOPP Means to Our Host Communities

Daniel Kwaw Wiredu, GSOPP Farmers Association Chairman

This livelihood support initiative by Golden Star Mining Company has been very beneficial to us. We receive a reliable income every month and that has transformed our lives and our standard of living. We are able to finance our children education to the tertiary level. Most farmers who were living in mud houses are now changing to concrete block houses. We now have a better way of living and have brought joy to our various homes.

Formerly, everyone looked up to Golden Star for direct employment but we didn't have the skills to. With the GSOPP project, each of us has 4 hectares each of a well-managed Palm plantation and we are self-sufficient. Some of the youth in this community who used to undertake unsafe illegal mining for their livelihood have also been employed as field workers by the project.

We are much grateful to Golden Star Mining Company for bringing this sustainable livelihood project into our lives.



Mr. Tuffour Quaiocoe, award-winning small-holder farmer

I am a beneficiary of a 4 hectare palm plantation under the GSOPP project. For the past four years, I receive a monthly uninterrupted income and that is what I depend on with my family. All my three children are in school and I have also been able to empower my wife in petty trading. I used to live in a rented house which cost me a lot of money because we live in a mining community, but currently I have been able to build a house for my family.

I was farming before I became GSOPP farmer but was not getting anything meaningful. Management of GSOPP has taught us the best agronomic way of farming to increase productivity. In 2014, I was adjudged the Districts' Best Oil Palm Farmer during the nationwide farmer award celebration. In 2015 I had an average yield of 23 tons per hectare from the farm bringing my total yields to 69 tons of palm fruits from the 4 hectare farm.

The tremendous yield and the income I am getting have significantly raised my social status. I commend Golden Star for bringing light into my life.



Beatrice Amenu, contract worker

I am a resident from Bogoso community and have been a GSOPP field worker for the past four years. I receive wage every month and as a single parent, I am able to cater for the house and make some savings. I take care of my child myself and pay his school fees.

Through my little savings, I have built one bedroom house and also a small kiosk where I do petty trading after work. My livelihood has been transformed and now I don't depend on anyone.

On behalf of all the field workers, I say well done to Golden Star Mining Company.







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