

T&C POULTRY FARMS

TREON SAMUELS
662-8016 OR 642-2369
blessedone89@yahoo.com

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Prepared by: Franklin-Lynch Environmental and Engineering Services



Project Overview

T&C Poultry Farm's location is at Plot 15 Section A, Block 14, Yarrowkabra, Linden Highway. This soil type in this area is mainly sandy. The local authority with jurisdiction over this project is the Hauraruni/Yarrowkabra Neighbourhood Democratic Council (NDC). The land has been leased for agricultural activities and has never been used before for any other purpose(s).

The area is accessed through the Marudi access road, followed by connecting bridges. There are no natural water sources near the project location. Other similar land uses (i.e., agriculture/farming) surround the project area.

In this initial stage of the project, land-clearing, cutting, and excavation will take place to prepare the land for the chicken pens and a housing facility. To date, about 50% of the land has been cleared (i.e., ~2.5 acres). This poultry farm is expected to begin operations in November 2023 providing all relevant approvals are received, and the necessary infrastructure to support this operation are developed and functioning well. This farm will be operating at first with one chicken pen (50 x 25 x 12 feet) which can accommodate about 625 chickens. The room for expansion is vast and will entail the construction, over the course of about a year, of 22 more chicken pens (100 x 25 x 12 feet) to take up the rearing quantity by a vast amount with an expected maximum operating capacity of 28,000 birds. The initial investment is about three (3) million GYD with an expected annual turn-over of about three (3) million GYD until the expansion occurs. There will also be a house for employees on the land with a storage area below. Three persons will be staying onsite during the construction and operational phases.

Flocks are turned every six weeks; thus, this requires daily management of the birds, and proper cleaning of pens before a new flock is acquired and brought to the land. The chicken pen will be a deep-litter pen with an automatic watering system and manual feeders. Solid waste and effluent will be managed as far as possible in accordance with best practices, to prevent any contamination or spread of diseases.

Project Development

T&C Poultry Farm is currently in the construction phase of the project which commenced with land clearing and excavation to prepare for the construction of the first deep-litter chicken pen along with the employees' living quarters (35 x 27 feet). The lower flat of the living quarters will be used as a storage bond, which will contain feed, medicine, and pesticides for use when the chicken rearing operations commence, tentatively in November 2023. The proximity from the house to the first chicken pen is about 60ft. Three (3) persons will be involved in both the construction and operational phases of the project. When construction of the living quarters is completed, it will be occupied by employees responsible for daily operational oversight and security.

Further, along with construction of the house - a sewage system (50ft from house) will be developed, along with a rain-water collection system for each chicken pen (given that there are no water sources close by); and a landfill to allow for burying of waste in case waste

disposal services are unavailable. A composting site will be identified and delineated for composting of organic waste, which can be used to produce a soil ameliorant for any cash crop grown on-site for employees' use.

The proposed layout for the initial stages of the operations will include the construction of one (1) deep-litter chicken pen (50 x 25 feet). The height of the pen will be approximately 12 feet and will have a disinfectant foot bath at the entrance. This size of pen can facilitate 625 chickens which will be sourced from Lall Beharry Poultry Farm.

During the construction phase of this project, materials such as cement, blocks, wood and chicken mesh wire will be used to construct the house and the chicken pens. A sum of three million dollars (GY \$3,000,000) have been invested into this operation. Considering that the chickens will take approximately 6 weeks to mature, an annual turnover of approximately GY \$3,000,000 is anticipated. Given the size of the initial investment, all materials will be bought in almost exact quantities to prevent any waste or over-spending of the budget. Future investments will be made to allow for the construction of new pens to fill the land space. Approximately 22 pens will be built at a dimension of 100 x 25 feet. Two of the employees, who are experienced poultry farmers, will be the designated leaders on the ground, managing day-to-day operations including feeding the chickens, disinfecting the pens, and removal of any waste/dead carcasses, etc..

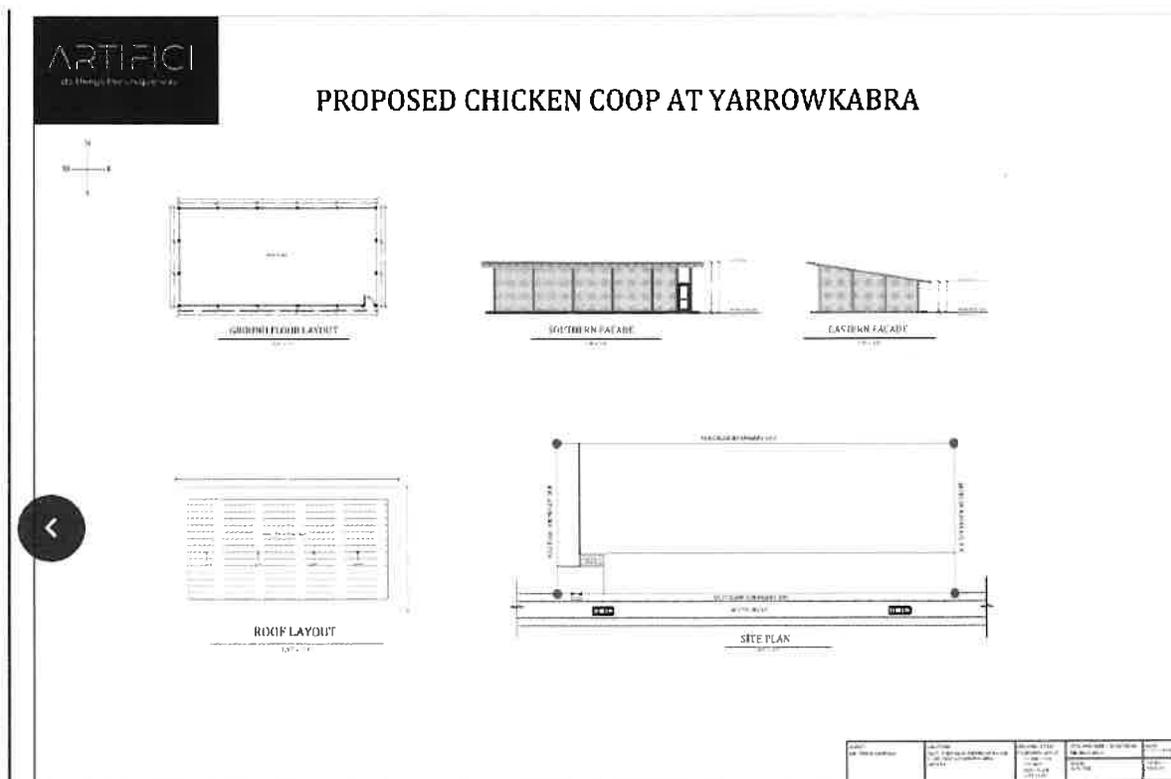


Figure 1. Site plan along with proposed design and dimensions for the first chicken pen.

- See attached document for better view.

After every 6 weeks, once the chickens are sold and moved from the pens, disinfecting/sanitising of the pens will take place to prevent any contamination/spread of disease to the new batch of chickens arriving at the farm. Any medication will be distributed based on advice from a vet or member of the Guyana Livestock Development Authority (GLDA). Pesticides will be used throughout the facility to ensure the control of pests and minimise disease infestations. Additionally, wood shavings for the floor of the chicken pens will be sourced from lumber yards - located approximately two miles from the farm. Within the deep-litter chicken pens, there will be an automatic watering system for rearing while manual feeders will be used alongside this to prevent any food from spoiling.

Moreover, during the construction part of this project - electricity will be provided by a generator (6500 watts). After the construction is completed, solar panels (2000 watts) will be installed and used as the main source of electricity. Rain-water collection tanks will be put into place to be used as the water supply for the harvesting of chickens given that there are no streams close-by. If any water sources are detected within reasonable distance to the farm within the next year - pump systems will be connected to supply water to the land.

Waste production on site during construction will be limited to bags and very minute leftovers. The bags will be collected, securely stored and transported to the nearest dumpsite, while leftovers will be used first in the compost site if possible. Moreover, during the rearing of chickens - any carcasses will be buried at designated site on the land, spoiled food and wood shavings will be composted. Wood shavings will be composted upon every 6-weeks and any biodegradable item that is used by employees onsite will be placed in the compost site. However, any single use plastics will be stored securely and taken monthly to a designated disposal site for the area if no contracted disposal service are available.

Effluent will be produced through the wash down and disinfection of the chicken pens every 6 weeks when the birds are being sold and new chicks are entering the facility. This is necessary to prevent any disease spread. The resulting effluent will be released to a drain that will then lead to a holding area where the water is allowed to settle before discharge.

This project will not be decommissioned for at least twenty years to come given that poultry production in Guyana's growing population is so necessary to survival.

Potential Impacts

As documented in EPA's guidelines titled "Environmental Guidelines - Poultry Rearing Operations (2013)", it is noted that poultry farming poses great risks to human health through transmission of diseases and to the environment through solid waste, odour, and water pollution. Disease transmission to humans is a serious impact that can occur through the direct consumption of infected animals and through interactions with contaminated water-supplies from poultry operation causing major diarrhoeal diseases. Further, solid waste management is an issue throughout the country especially in more remote areas such as this proposed project location. Solid waste refers to all waste produced from construction of the house and chicken pens, the employees who live on-site, waste from spoiled feed, waste from chicken pens directly and even carcasses. Thus, a well-thought-out plan to manage solid waste during construction and operation phases is necessary.

Additionally, wastewater washed down from chicken pens to the environment poses a direct threat to humans by contaminating the groundwater supply, as well as the soil, which in turn impacts other flora and fauna in the area. This is because pesticides, disinfectants and medicine may be within the effluents being discharged in this area which has predominantly sandy soil texture. Also, effluent discharge from household use can influence disease spread once not collected properly.

Usually, odour and noise nuisance can pose impacts to the people living near-by these poultry operations but given that this operation is occurring in agricultural lands, away from human livelihoods - this will not be such a great impact but will still be managed appropriately. All of the possible impacts will be of concern throughout the operation of this poultry farm; however, with good management and mitigation measures in place, these will all be avoided or minimised.

Proposed Mitigation Measures

Environmental, ecological and social impacts can be kept to a minimum once there are proper mitigation measures and management on-site at any stage of the project's lifespan.

First, disease transmission to chickens then subsequently to humans will be mitigated in the best way possible. Some measures in place will be:

- 1) wire mesh around the chicken pens to prevent other birds from entering.
- 2) disinfecting footbath at entrance of pens
- 3) limited access to pens
- 4) sanitization of pens between each flock of chickens
- 5) identifying and isolating any sick chickens and finally
- 6) no slaughtering of birds will occur onsite.

Other measures involve employees showing any symptoms of vomiting or diarrhoea or rashes disengaging from rearing, and good ventilation of the chicken pens. Dead carcasses will be buried at a designated spot onsite or removed entirely from the project location.

Second, solid waste management will be necessary due to waste generation from construction, waste from day-to-day management of facility and livelihood of workers, chicken feed waste, chicken pen litter and carcasses. Household type waste will be collected by a contracted waste disposal service on a regular basis; however, a landfill will be onsite to allow for the burying of waste. Additionally, a composting section will be designated to compost any food cuttings from the household and chicken feed that is to be disposed of, and chicken pen litter removed prior to the addition of a new flock. To aid in this process and minimise unnecessary disposal of waste, manually collected feed waste will be separated into two categories - solid condemned feed and edible condemned feed. The solid condemned feed will be bagged off and set aside for disposal via composting or burying, while the edible condemned feed will be bagged off and given away free of cost to pig farmers for daily collection.

Third, waste-water discharge from pen wash-down will be drained via a system of internal concrete drains into a collection area (reservoir) outside of the rearing areas for manual separation of floaters and disinfected before release into the environment. Wastewater

treatment will involve use of chlorine and/or hydrogen peroxide to disinfect and remove harmful pathogens and the use of sedimentation to allow settling of sediments to the bottom of the tanks. In addition, the automatic water system will be well calibrated to reduce any water overflows into the pens. Effluent discharge from household use will be held in a sewage system constructed on the land. Odour emissions will be controlled by adding alum to pens which control the ammonia levels and minimise the pungent scent. Air emissions will also be controlled as feed grinding will take place within the storage area on the land. Indeed, the use of agricultural land is of importance, so neighbours are not close by to be affected by the operation.

Lastly, pesticides and hazardous materials used to control pest infestation will be kept in the storage bond in designated impermeable labelled containers and will comply with all relevant requirements of the Pesticides and Toxic Chemicals Control Board (PTCCB). The feed, pesticides, and other essentials to the rearing of chickens will be sourced from Lall Beharry who is authorised by PTCCB. However, once this project expands, necessary approvals and authorisations will be attained to store the large quantities of pesticides. With conscious effort and application of these measures, harmful effects to the environment will be minimised.

BACKGROUND

Project Name: T & C Poultry Farms

Type of Operation: Poultry Rearing

Location of Project: Plot 15, Section A, Block 14, Yarrowkabra, Linden Highway

Date Application Received: September 25, 2023

DESCRIPTION OF PROJECT SITE

The project is located in an Agriculturally zoned area on approximately five (5) acres of land, and the project site is currently being cleared of shrubs and debris. A creek resides North-West of the project, East, West and North of the project is forested and the South of the site is the access road along with the forest.

The developer intends to construct a farm house, storage bond, and a total of twenty-two (22) pens, in the long run.



Figure 1: Google Image showing the surrounding land uses.



ENVIRONMENTAL IMPACTS SCREENING

The EPA's screening concludes that there are no foreseeable significant environmental impacts likely to be generated from this project upon consideration of the location, scale, and type of the operation. The impacts arising during the operational phase are considered to be minor, localized, and mitigable thus no further environment studies such as an Environmental Impact Assessment (EIA) or Environmental management Plant (EMP) will be required.

1. The proposed site for the facility is located on Lease lands designated for Agricultural Purposes and has been deemed appropriate by the Hauraruni/Yarrowkabra NDC.
2. The project is not in close proximity to any sensitive ecosystem. Project activities will have low to minor effects on the existing biodiversity and ecosystem in the project area.
3. Impacts from noise pollution and vibrations will be minor and will be minimized by ensuring all noisemaking machinery and equipment are equipped with relevant silencers/ mufflers, place on an imperious surface and appropriately enclosed.
4. Wastes from the facility will be reused and disposed of via methods approved by the Agency including; septic tank built to GNBS Code for treatment of sewage, reuse of litter as fertilizer, reuse of dead birds as swine food and designated waste pit for solid waste.
5. Effluent streams generated from the facility will be stored and treated via a treatment pond before being released into the environment.
6. Impacts from noise pollution and vibrations will be minor and will be minimized by:
 - Ensuring all machinery and equipment are working efficiently and have the required silencers/ mufflers where necessary.
 - Placing noise producing equipment will be established on an imperious surface thus acting as a buffer for the vibrations and they will also be enclosed to reduce noise emissions into the environment.
7. Odour from the facility will be minimized through proper waste practices, including:
 - Best animal husbandry practices will be implemented to ensure litter in the pens are kept dry to reduce odour emissions into the environment.
 - Used litter (manure) is shoveled up after every growth cycle and distributed to cash crop farmer for composting.
 - Dead birds will be collected distributed to swine farmers for use as food.

CONCLUSION

In conclusion, since all foreseeable significant impacts from the project that is outside the scope of the intervention by the developer, and as such these impacts from this project **will not significantly affect the environment** and is therefore exempt from the requirement for an Environmental Impact Assessment. However, to further reduce the impacts that would occur from the project's operation, it is recommended that an Environmental Permit with a focus on Waste Management be issued.