



## Technical and Financial Project Proposal Template

<p>Name of the Organization: The Grenada Project</p>	<p>Type of Organization: Registered Non-Profit: US and Grenada</p>
<p>Brief Description of the Organization: The Grenada Project [TGP] was formed in 1996 as a 501 [c] 3 non-profit organization. We are currently working in partnership with Grenada’s government, The Ministry of Agriculture, Fisheries Division, the Grenada Association of Poultry Producers, Grenada Solid Waste Management, Grenlec, the nation’s electric utility, Grenada Breweries, and the Marketing and National Importing Board. We concentrate on supporting sustainable development and agriculture with innovative solutions in waste recovery and recycling. We have a self sustaining recycling plant that makes Protein From Waste [PFW] for inexpensive animal feed that will support Grenada’s farmers in the process. PFW was designed to demonstrate how businesses can tap into landfills as a source of recyclable materials. We have tested the plant and the product and are ready to go into daily production when the necessary funds are available. We have spent \$300,000 US of our own funds to date. Director and contact person, James Aronson, an engineer, has conceived and designed the project. In 2010, he managed the construction of the by plant in Grenada’s only landfill in Perseverance [inside Grenada’s only urban center and capital, St George], using a team of workers who live in the dump. They have been trained by TGP in the operation of the plant and at this point have worked on the project during the past 4 years. During the shakedown process, the facility was visited by several US consultants who are members of the project team of experts assembled to bring the plant into it’s full production state. Other team members are experts in animal feed formulation and animal nutrition. More data on TGP can be found in the <b>Organization’s Experience</b> section [below].</p>	
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<p>Telephone: 207 460 7592 &amp; 473 534 2653</p>	<p>Email and Website: <a href="mailto:thegrenadaproject@yahoo.com">thegrenadaproject@yahoo.com</a> thegrenadaproject.org</p>
<p>Project title: Protein From Waste and Local Crops</p>	
<p>Project Objective and Expected Outcomes: To recycle certain of the island’s waste streams to manufacture a protein product that will lower the cost of feeding poultry and significantly improve the livelihoods of Grenada’s farmers. Outcomes anticipated in the first phase include the avoidance of putting noxious organic wastes in the local landfill, the solution of odor problems, providing a method for the disposing of used motor oil on an island that has no such facilities, and to help farmers retake the 95% of Grenada’s \$30 million poultry market that they have lost to cheap imports. Finally, in a second phase, to disseminate this highly replicable technology to the surrounding countries in the region who all have the same waste problems and prohibitively expensive imported feed costs.</p>	



Target Population: Phase One, PFW/Grenada: 100,000, Phase Two, PFW/Technology Transfer/Urban centers of Latin America and the Caribbean: 10,000,000+

Amount Requested in USD:  
\$50,000

Project Duration in Months: 12



- 2. Project Summary:** An abstract of the proposal both in English and Spanish (300 words or less in each language) that should include geographic location, a brief description of the rationale, goal(s), objectives, specific project activities, target beneficiaries, and expected outputs.

The project and plant are located in the Grenada's landfill in Perseverance, St George. Our rationale is based on creating value from very limited resources. We utilize a novel and tested waste recovery process to convert, wastes {fish and other offals, brewer's spent grain, market waste, restaurant and hotel food waste and crop waste} by processing them in a steam heated 5000 liter cooker. We make that steam in a specially engineered 'waste to energy' boiler that cleanly burns used motor oil as a fuel. This is driven by a desire to overcome the scarcity of resources and the threat that spilled used oil poses to the environment. As a result of this we can make a valuable product using only free waste inputs and energy. The final goal, is to make a Protein Supplement and sell it [at cost] to make feeding animals much cheaper. This will revitalize Grenada's agricultural sector through employment opportunities while reducing the country's carbon footprint and pollution. With a final funding round we can put the plant into production. Once operations have stabilized our future is in aiding others in the development of their renewable waste resources. We have a hope that the transfer of the technology which is quite replicable and not even patent protected, in other parts of the Caribbean and urban centers of Latin America will someday touch the lives of millions. In Grenada, our beneficiaries will include those employed at the plant and hopefully in the long term over a thousand poor farmers. The expected output from recycling operations is 1000's of tons of waste removed [including 1000's of gallons of harmful waste oil] and all converted into 100's of tons of inexpensive but valuable feed products with an operation that is entirely self sustaining.

**3. Organization's Experience** (300 words or less)

Formed in 1996, The Grenada Project (TGP) in its first 10 years, has participated in mostly small scale aid to the island. In 2006, after Hurricane Ivan, we raised funds to put a roof [destroyed by the storm] on the hospital that serves the Eastern half of the island. As a follow up to that we wrote a \$181,000 US grant through Rotary International to help revitalize the whole health system, again on the Eastern side of Grenada. In 2007 we created The Goat Dairy [TGD]. In the past, Grenada and all it's island neighbors, had dairies. Today with the influx of imported and subsidized powdered milk, these dairies no longer exist. The cheese from TGD is sold on island and is served in most of the island's hotels and restaurants. It is sold in the supermarkets and TGD is now responsible for the sustainable livelihoods of at least 10 Grenadian families.

The Protein From Waste and Local Crops project, was conceived in the late 90's. It is the culmination of years of design and technology exploration. In it's first embodiment it will give Grenada, a country with little or no resource and a non existent scale of economy, a chance to have a level playing field when competing against multi national food importers. At the same time it will be solving many of the island's major solid waste problems. Like many developing nations, Grenada has no facilities for proper oil disposal. When the people spill their crankcase oil on the ground and in the sea they create Grenada's biggest pollution problem. In addition, the various wastes that PFW processes are the most noxious and odor causing agents disposed of in the landfill. In 2008 we purchased our equipment for the PFW plant. We assembled it once in North Carolina and then disassembled everything after careful labeling and shipped it to Grenada. The plant is fully constructed now. It has been run and tested. Consultants have flown in from the US and helped to debug the systems. A very high protein product was produced and tested in a lab in the US. We are ready to go into production.



## Project Narrative

**Rationale:** Any sustainable community objectives must include the proviso that waste and inefficiencies must be kept to an absolute minimum wherever it may exist. This mandate is particularly poignant in the case of Protein From Waste. Sustainability simply can not be achieved in the face of massive inefficiency. Unfortunately poverty, an evil facet of the urbanization crisis, creates inefficiency. Limitations like economy of scale inhibit progress. In a world of rapid urbanization that is currently experienced in the Latin American and Caribbean countries, the imperative of limiting the harm generated by waste is perhaps one of the more critical societal aspects needing attention.

PFW is all about the recovery of real and tangible assets from the waste that is generated and disposed of in the landfills of these urban centers. In fact, PFW can take advantage of the concentration of population that urbanization creates. Urban centers by definition make an economy of scale of their own. The concentrated populations mean massive concentrated wastes and because PFW literally exists on garbage, urbanization only makes the process more effective. For this reason the success of our first PFW plant is of critical importance for the sustainable development of the entire region.

Byproducts or complementarities of the process are intrinsic to the efficiency of the process. We create a valuable product from the waste. Agriculture is a huge consumer of feed commodities. For instance, 75% of the cost of raising a chicken is feed! PFW can employ “Reduce, Reuse and Recycle {and in our case Render}” techniques to not only achieve its own “self- sustainability” but at the same time we can reduce the cost of feed significantly. This cheaper feed [sold at cost] will insure the total sale of the output to the existing farming infrastructure of any particular country. This output/feed translates into increased profit for each and every farmer who buys it.

Because many are not familiar with the practice of employing used oil as a fuel, we would like to add this note: The combustion of used lubricating oils for a fuel in the United States is covered in The Code of Regulations, Protection of the Environment PARTS 260-299, promulgated by the Environmental Protection Agency. In the Northern US there are thousands of facilities [primarily "oil change shops"] that heat by burning used oil. Some are actually larger than the PFW plant and many are located in high density suburban communities. In Pennsylvania, US, we recorded the operation of a huge car wash/oil change/mega service facility that had [9] separate boilers that burn more used oil than PFW. They advertise "Being a good neighbor to the community and the environment" in a brochure [attached] that explains their choice of used oil. The facility is situated across the street from a large apartment building and surrounded by a suburban one and two family housing development. No more oil on the ground or in the sea is one of our long term goals

In summation, the existing gaps that PFW can fill in the quest for more sustainable communities is providing a clean disposal for oil and the massive organic wastes that an urban center can generate while providing a locally made product that is in demand and currently provided primarily by imports.



**Baseline:** As previously stated, the PFW plant is constructed, tested and found to be effective in creating its intended product. The only thing remaining is the refinement after the final equipments have been installed. This proposed round of funding is required to achieve that goal. We have expended over \$300,000 US of our own funds thus far and need assistance to achieve the final goal of daily production.

Qualitative and quantitative indicators for the existing need of the project that have been previously discussed are the removal of 1000's of tons of harmful waste from the environment [a figure that will be documented in our cooker's logbook] and the creation of opportunity for hundreds of farmers [poultry farmer population is tracked annually by the Ministry of Agriculture]. Additionally, Grenada can expect reduced air, water and land pollution, reduction in its carbon footprint, reduced fuel and food imports, reduced unemployment [>30% in Grenada] and finally, improved food security.

Quantitative and qualitative measure of success of this final round of funding can readily be determined by physical inspection of the final embodiment of the plant, witnessing its operation and testing its final products for positive nutritional factors. At that point we would be ready to open the doors to the farmers and start selling the product [at our cost + a maintenance allowance] creating cash flow and sustainability.

**Project Goals and Purpose:** At this point, because much of the 'heavy lifting' has been done, many of the project goals have already been met. The remaining goals are the acquisition of the remaining equipments and their installation. Specifically, for the portion of the final funding that is being requested in this proposal [50,000 USD], or to be more precise "the project" as concerns funding from ECPA/sustainable communities the goals are as follows:

- Months 1-3: **Procurement:** of the equipment and material in the United States to complete the outfitting of the plant in Perseverance, Grenada.
- Months 3-5: **Fabrication:** to be performed in Florida, US [primarily welding] of custom machinery for the plant.
- Months 6&7: **Transit:** including loading of a seagoing container with aforementioned equipment and shipment to Grenada.
- Months 8-11: **Assembly:** Unloading equipment, assembly and placement in the plant.
- Month 12: **Testing:** Initial testing of equipment.

With regard to the evaluation of the program purpose and how it relates to the priority areas identified in section IV of the RFP **we have elected to concentrate on priority area #3 Waste Management & Recycling** although because every gallon of waste oil we burn in our boiler saves a gallon of refined diesel fuel we could also find relevance in priority area #1 Community-based Clean Energy and Energy Efficiency, but to avoid confusion let us just address priority area #3 Waste Management & Recycling.

**cost optimization:** To date any educated witness to the facility would vouch for the value that is inherent in the installation as a whole. [Please see the 3 pdf attachments pages 1-6]. That so much was achieved for so little capital expenditure is self evident. How? Because the director of the project was on hand each and every day of the assembly. This hands on approach will be the standard operating procedure for the completion of the plant as well. As a micro NGO, we are meticulous in our efforts maximize what little we have, chasing after rebates, refunds and credits and not letting



any unnecessary losses get by unattended.

**relevance in the context of local needs:** While, the project's relevance to local needs has been addressed several times in the text already, the original project concept evolved from a request of a former Prime Minister who expressed the wish that we pursue this course to produce a local animal feed. We are a self-sustaining recycling plant that costs the people nothing, solves many of their pollution problems, and creates 100's if not 1,000's of new employment opportunities.

**expected impact:** 1. Utilization of the [unfortunately renewable] waste oil as a fuel to do process work. 2. Recycling of much of Grenada's organic waste products that are currently 'landfilled.' 3. Creation of employment for 6 on site. Creation of profitable livelihoods for 100's of farmers. 4. Improving Grenada's food security. 5. Reducing Grenada's imports [95% of poultry, the most popular meat is imported]. 6. Reducing fuel imports. 7. Reduced feed imports 8. reduced carbon footprint. 9. Reduced land, sea and air pollution.

**increased citizen control regarding indicators of success and progress related to quality of life:** It is anticipated that the sustainable community of poultry farmers as represented by the Grenada Association of Poultry Producers, [one half of them women] will be invited to form a cooperative to operate the plant. If successful and sustainability can be demonstrated the operation will be community run and owned! Regardless, the net economic effect on the island's economy of so many farmers experiencing the expected gains of lower costs should be significant.

**innovation and technical approach:** The innovative aspect of the Project is that this is the first such plant in the world to combine modern heavy waste oil combustion [with an eye to disposal] while at the same time performing beneficial work and actually saving 75% the cost to process the waste into protein.

**policies promoting project self-sufficiency or sustainability:** See above, with regard to the potential community cooperative ownership of the facility and the economic opportunity created from the processed waste. It is ingrained in the self-sustaining project concept that a useful and cheaper product [derived from free waste inputs] of equal quality to existing products promotes self-sufficiency and sustainability. In addition, it is not a burden on the people's government.

**Project Outputs and Indicators:** There are several outputs and indicators that are measurable in terms of quality and quantity. Let us start with the most obvious. The relevance of output can sometimes be informed by the inputs if they are known. For instance; if we know the input of the waste products we know an important indicator. In our case it is important that we log the use of fuel by the boiler because every gallon of used oil burned is a statement about the useful disposal we are performing. Additionally, it also tells us how many gallons of new refined diesel fuel we saved. Therefore calculations of the country's reduced carbon footprint will be derived from the boiler's logbook.

We get our used oil from Grenada's electric generation station [Grenlec]. In the past when Grenlec needed to dispose of waste oil [they generate 2000 gallons a month] they paid to ship it to Trinidad to have it burned in a cement kiln facility. That meant trucking in Grenada and Trinidad, cranes for the containers, ships to cross the sea and a



unsophisticated dirty incineration in the end. The calculations of the carbon footprint for this extravagant odyssey are complex and someday will need to be done to substantiate the good PFW is performing, but that does not even include the benefit of avoiding the use of imported diesel fuel on a gallon for gallon basis. Suffice it to say PFW is doing a service to the planet when it creates unheard of “renewable energy” out of the never ending stream of waste oil.

A note here would be useful: The fact is that plants like PFW [but use conventional fuels] exist in every country that possess a reasonable economy of scale. But in impoverished small nations like Grenada they could not be cost effective unless the fuel [75% of the cost to process] were free. By disposing of the waste oil we have created our own free fuel. A discussion of used oil use as a fuel in the United States can be found in the Project Narrative section [above].

Likewise, the cooker’s logbook will reveal the amount of inputted waste consumed by the process and on the output side, the amount of protein derived from that waste. Protein is by far the most expensive ingredient of animal feed.

Other important indicators are provided through government agencies. Increases in the population of the community we serve, namely the poultry farmers themselves, are tracked by Grenada’s Ministry of Agriculture and the aforementioned Grenada Association of Poultry Producers [GAPP]. These two institutions are also responsible for tracking the nation’s poultry output vs. the amount of imported poultry. This is a \$30 million market and represents Grenada’s most popular meat. These statistics will allow us and our supporters to get a firm handle on the improvements created by the project.

Qualitative questions are more complex. For instance, the effect of the clean incineration of used oil instead of the environmental degradation ragtag disposal creates. What percentage of the used oil would have been dumped on land and in the sea? What exactly is the effect of converting 75,000 pounds of rotting organic wastes per year into a useful product? Or what is the effect of not importing 13,000 gallons of diesel fuel on Grenada’s balance of payments? It would be nice to know the exact answer but it seems just a device of convenience rather than a meaningful scientific measurement, there's just too many variables to allow it to be very valid or accurate. Qualitatively, the only thing we can know for sure is that if the quantitative goals are reached the quality of the lives of the many stakeholders will improve significantly.

**Project Activities and Methodology:** We are going to describe the project activities from present to total completion understanding that the grant in question herein only covers the activities in the first year which are described above in “**Project Goals and Purpose**” and designated here with an asterisk\*:

Activity\*: procurement of the equipment and material in the United States to complete the outfitting of the plant in Perseverance, Grenada.

Methodology: We will stage this operation in the state of Florida. The items will be ordered and they will be logged in and assembled at a leased staging area.

Activity\*: fabrication in Florida, US [primarily welding] of custom machinery for the plant.

Methodology: Mr. Robert Davenport, a member of the project team lives in Florida and is an expert welder and fabricator. This equipment is his specialty.



Together project director James Aronson and he will assemble the custom equipment required.

Activity\*: loading of seagoing container with aforementioned equipment and transit to Grenada

Methodology: The container will go out of Miami, we will escort to the port.

Activity\*: Unloading equipment, assembly and placement in plant.

Methodology: The container will be unloaded by crane in the plant's parking lot. Staff will be brought on and each piece of equipment will be moved to its respective location and bolted down to the floor. All unassembled equipment will be reassembled and motors will be wired in.

Activity\*: Initial testing of equipment.

Methodology: All electric motors and circuitry are to be tested. Conveyors and such will be tested with representative loads. The existing equipment will be activated and test feedstocks introduced to insure proper operation.

Activity: Test runs, trouble shooting and repairs

Methodology: The whole line will be run with various representative feedstocks, "bugs" will surface, be evaluated, and corrected. Repairs will be rendered where necessary and preventative measures evaluated and compiled in a operators manual for the crew. Team members Davenport and Townsend will come from US to trouble shoot [see "team composition"]. A receiving concrete pad will be cast to be a clean platform for deliveries. A new metal fuel tank will be installed. A bathroom and septic system will be installed.

Activity: First production runs and further testing

Methodology: The various feedstocks to be used in production will be brought in to run through the whole line. Products will be produced and sent out for analysis. More "bugs" will surface, more repairs, corrections and adjustments. 2 trucks will be purchased, [1 heavy + 1 light], a catwalk and office will be built. Screening for insects, birds and rodents will be installed.

Activity: Standardization and coordination with the local feedmill

Methodology: There are certain economic benefits attendant to working with the island's existing feedmill. It is preferable to send the Protein Supplement to them to be mixed into the compound feed required for poultry rather than tooling up to duplicate their operation. They have already been to the plant on several occasions and are eager to work with us. There is no sense in entering into these negotiations until we are ready for production. We have options if we can not strike an acceptable relationship.

Activity: Production and sales commence

Methodology: We finally start taking in revenue. Calculations will have to be made to evaluate exactly what is the lowest price we can ask farmers to pay and still remain sustainable with enough left in the coffers to cover future maintenance, parts, spares and replacements.



Activity: Finding new sources of feedstock

Methodology: The plant has the capacity to handle more input than current feedstocks will permit. Cultivating and harvesting certain high protein legumous plants is an option we are currently experimenting with. Harvesting sea weed at certain locations may be worthwhile. The bakeries are always discarding old bread and some fisherman who clean their fish at sea might be encouraged to bring the offal back for the plant. In addition, as raising poultry grows in popularity based on the benefits the PFW plant will provide, offals from poultry processing will also increase. In this way we can insure our own growth.

**Logical Framework:** Complete a Logical Framework for the project using the format below:

<b>Narrative Summary</b>	<b>Performance Indicators</b>	<b>Means of Verification</b>	<b>Assumptions/Risks</b>
<b>Goal</b> <i>Recycling of waste oil</i>	<i>Actual amount of waste oil burned</i>	<i>Boiler log book</i>	<i>None</i>
<i>Recycling of all other waste as feedstock</i>	<i>Actual amount of non oil waste products converted</i>	<i>Cooker log book</i>	<i>None</i>
<i>Protein Supplement produced [product]</i>	<i>Actual amount of product produced</i>	<i>Sales records</i>	<i>None</i>
<i>Jobs created</i>	<i>Increase in # of poultry farmers</i>	<i>GAPP &amp; Ministry of Agriculture</i>	<i>None</i>
<i>Jobs for women</i>	<i>.5 X Jobs created</i>	<i>GAPP &amp; Ministry of Agriculture</i>	<i>None</i>
<i>Imports displaced/ Market share inc.</i>	<i>Actual comparison w/previous year</i>	<i>Ministry of Finance &amp; GAPP</i>	<i>None</i>
<i>Total Benefits to Farmers</i>	<i>\$/PFW feed - \$/std feed X output</i>	<i>Output/sales records \$/market tracking</i>	<i>None</i>
<b>Purpose</b> <i>Preserving the environment</i>	<i>Waste converted</i>	<i>Plant log books</i>	<i>No hurricanes</i>
<i>Economic Development</i>	<i>Increase in poultry farmers/market share</i>	<i>GAPP, Ministries of Agriculture &amp; Finance</i>	<i>No dumping by importers</i>



<p><b>Outputs</b></p> <p><i>Conversion of 750,000 lbs of waste</i></p> <p><i>incineration of 13,000 gallons of waste oil</i></p> <p><i>100's of Employment increases</i></p> <p><i>Economic Development improvements</i></p>	<p><i>Log book notations</i></p> <p><i>Log book notations</i></p> <p><i>Stats from Gapp and Ministry of AG and Finance</i></p> <p><i>\$/PFW feed - \$/std feed X output and Employment inc.</i></p>	<p><i>Plant logs</i></p> <p><i>Plant logs</i></p> <p><i>GAPP &amp; Ministries</i></p> <p><i>Output/sales records \$/market tracking &amp; Ministries</i></p>	<p><i>No Natural disasters</i></p> <p><i>No worker discord</i></p> <p><i>No belligerence from competitors</i></p>
<p><b>Activities</b></p> <p><i>Procurement</i></p> <p><i>Fabrication</i></p> <p><i>Transit</i></p> <p><i>Assembly</i></p> <p><i>testing</i></p>	<p><i>\$52,500</i></p> <p><i>\$18,000</i></p> <p><i>\$9,000</i></p> <p><i>\$16,500</i></p> <p><i>\$4,000</i></p>	<p><i>receipts</i></p> <p><i>receipts/photos</i></p> <p><i>receipts/photos</i></p> <p><i>photos</i></p> <p><i>photos</i></p>	<p><i>availability</i></p> <p><i>scheduling</i></p> <p><i>No hurricanes or other delays</i></p> <p><i>none</i></p> <p><i>none</i></p>



**Time frame / work plan:** Develop a work plan using the template below. Indicate when activities, milestones and outputs will be accomplished, as well as responsible person and indicator. The proposed work plan should be consistent with the technical approach and methodology, showing understanding of the Terms of Reference and ability to translate them into a feasible working plan. A list of the final documents, including reports, presentations, outreach material to be delivered as final output, should be included here in the column “Output”.

Work Plan																			
Activity	Output	Months												Responsible	Indicator	Budget			
		1	2	3	4	5	6	7	8	9	10	11	12			OAS Funds	Co-Financing	Total (US\$)	
<b>1.1.</b>																			
Procurement		X	X	X											J Aronson	receipts	9,000	19,000	28,000
Fabrication				X	X	X									R Davenport	receipts	28,800	9,800	38,600
Transit							X	X							J Aronson	receipts	7,100	6,000	13,100
Assembly									X	X	X	X			J Aronson	photos	4,000	11,200	15,200
Testing													X		J Aronson	photos	1,100	4,000	5,100
<b>Total:</b>																	50,000	50,000	100,000

### Monitoring and Evaluation:

**Procurement M&E** all receipts will be collected during procurement activities and we will have on file photos of each piece of equipment as they are delivered to the staging area.

**Fabrication M&E** requires that receipts be saved and photos be taken of the work as it progresses including the final products and a written report.

**Transit and loading M&E** will be a matter of photos to show progress with the final bill of lading in Grenada

**Assembly, unloading and placement M&E** is photo dependent with schematic to show equipment placement

**Testing M&E** photos and if possible video with a written report

### Gender Sensitivity and Community Inclusiveness:

There are two communities that we will be serving: First there is the poultry farmers who will eventually enjoy the benefit of more profits because of lower feed prices. They are fully one half women. The second group is the islands population in general who will experience, reduced pollution and a less putrid landfill. Both groups are evenly split with regard to gender.



## **Team Composition and Task Assignment:**

**Robert Davenport** is a rendering specialist. He was Maintenance Superintendent of one of the 3 biggest plants in the world and the biggest falling film plant for Perdue Farms. He is a trouble shooter and problem solver for the rendering industry.

**Byron Townsend** is the Service Manager for Webster Engineering, the manufacturer of our used oil burner which is critical to our operation. As the Combustion Specialist for PFW his task will be to advise the group for burner tuning and repair. He will answer questions that have to do with firing of the Webster burner and its related support apparatus.

**Jeff Mattocks**, President of The Fertrell Company, comes with 16 years experience in natural, organic and outdoor access poultry diet formulations and management techniques. He develops poultry feed formulas with many local, renewable and sustainable feed resources. His duties will include evaluating feed ingredients, analysis; investigate negative side effects and feeding limitations.

**Dr. Santosh Lall** is a Group Leader of the Marine Bioactive program at the National Research Council of Canada, Halifax and an adjunct professor at Dalhousie University. He has undertaken and directed research on animal nutrition since 1974, with more than 150 publications in the field of nutrition and feed development.

**James Aronson**, Team Leader, is an engineer whose work has included high speed vehicles, low speed aerodynamics [gliders], synthetic solid fuels from peat/wood, and land development. He founded TGP and designed PFW with the goal of doing something to help the planet and its inhabitants.



# Protein From Waste and Local Crops The Grenada Project Budget For the Twelve Month Period November 1, 2012 to October 31, 2013 (Expressed in United States Currency)

<b>Income</b>	<b>Note</b>	
Grant Funding	(1)	\$50,000
TGP Funding	(2)	50,000

**Total Income** **\$100,000**

<b>Expenditure,</b>		<b>Activity</b>	<b>Amount</b>
Salaries and Wages [B & Zebi]	(3)	Assembly & Testing	\$ 4,800 OAS
Salaries and Wages [Davenport]	(4)	Fabrication	8,000 OAS
Salary [Aronson]	(5)	All Activities	36,000 TGP
Hopper, conveyor, bags & packaging	(6)	Fabrication	4,700 OAS
Vibratory screen & Grinder	(6)	Fabrication	3,900 OAS
Electric auger/elevator w/spares	(6)	Fabrication	5,950 OAS
Permanent fuel tank w/pump	(6)	Fabrication	3,650 OAS
Condenser sump modifications and repairs	(6)	Fabrication	2,600 OAS
Fisheries Bins	(7)	Procurement	5,050 OAS
Karcher steam cleaner	(7)	Procurement	3,950 OAS
Salt & Water treatment	(8)	Procurement	1,050 TGP
Oxy Acetylene tanks	(8)	Procurement	1,000 TGP
Anti-oxidant	(8)	Procurement	950 TGP
Feed Handling equipment/spares	(8)	Procurement	3,000 TGP
Tools, hoists, spares, etc	(8)	Procurement	2,600 TGP
Catwalk, stairs & top container mods	(8)	Procurement	3,400 TGP
Travel	(9)	Fab & Assembly	2,000 TGP
Utilities	(10)	Testing	300 OAS
Shipping /transport/port charges	(11)	Transit	5,800 OAS
Trucking US	(11)	Transit	350 OAS
Trucking & Crane Grenada	(11)	Transit	950 OAS

**Total Expenditure** **\$100,000**



## Notes to the Projected Budget

1. OAS Sustainable Community financial resources
2. The Grenada Project [TGP] Matching Financial Resources
3. 2 Crew Lydon Williams and Kevin Charles worker/mechanics for Assembly and Testing activities 800 hours each at \$3/hour to be paid by OAS Sustainable Community financial resources
4. Team Member Robert Davenport for Fabrication [welding] activity 200 hours at \$40/hr to be paid by OAS Sustainable Community financial resources
5. In Kind Resource: Project Director James Aronson one year/2000 hours at \$18/hr supplied by TGP Matching Financial Resources, all activities
6. Materials other than labor for the Fabrication activity of the listed equipment that will be fabricated by Robert Davenport and James Aronson in Fabrication activity
7. Equipment that will be purchased with OAS Sustainable Community financial resources in the Procurement activity
8. Equipment that will be purchased with TGP Matching Financial Resources in the Procurement activity
9. Travel: one round trip Maine/Florida, one round trip Maine/Grenada to be purchased with TGP Matching Financial Resources
10. Utilities for Assembly and Testing phases to be paid by OAS Sustainable Community financial resources
11. Transportation and cranes for the Transit activity to be paid by OAS Sustainable Community financial resources



**Annex 1: Document proving the legal existence of your Organization**

Ref. No. ....  
In replying the above  
Number and date of this  
letter should be quoted.



MINISTRY OF AGRICULTURE,  
FORESTRY AND FISHERIES  
MINISTERIAL COMPLEX  
BOTANICAL GARDENS  
ST. GEORGE'S  
GRENADA, W.I.

28<sup>th</sup> August, 2012

Mr. Luisa Fernanda Neira S.  
Department of Sustainable Development  
Organization of American States  
1889 F. St., N.W., Suite 794-C  
Washington, D.C. 20006  
Tel: 202-458-6097  
[Lneira@oas.org](mailto:Lneira@oas.org) [rhuber@oas.org](mailto:rhuber@oas.org)

Dear Mr Neira

### **Assistance For Protein From Waste Plant in Grenada**

This serves to confirm that the Government of Grenada and in particular the Ministry of Agriculture, Forestry and Fisheries is in full support of the establishment of the Protein From Waste Plant currently under development in Perseverance, St Georges by The Grenada Project.

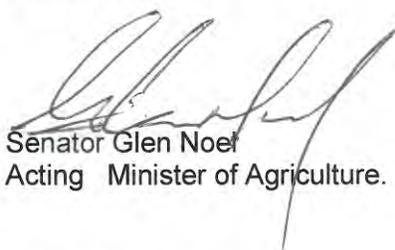
For many years now several documents on the agricultural sector identify that Grenada holds great potential for the development of the livestock sector, namely in small ruminants, pigs and poultry. However, this potential has not been fully materialised due to several constraints, foremost among them is the high cost of feed. Notwithstanding, at the same time the island has a large quantity of waste products both from the slaughtering of animals, fish markets and other sources.

In that regard, the Government of Grenada welcomes the initiative by the Grenada Project to develop this Protein From Waste Plant which seeks to utilise these waste products to help generate protein that will be used to complement animal feed on the island.

Moreover, in 2011 the Government of Grenada in an effort to transform the national economy in response the global economic crisis and increasing demand by its population, has identified five strategic sectors. One of these sectors is the agri-business sector. In light of the high priority that is now given to the agri-business sector, the Ministry of Agriculture now has a serious responsibility to help accelerate development in the sub-sectors with the greatest potential for growth and economic returns. The livestock sector is certainly one of those sub-sectors.

As a result, the Ministry will greatly appreciate your organisation support in helping to make the Protein From Waste Plant by the Grenada Project a reality.

Sincerely



Senator Glen Noel  
Acting Minister of Agriculture.

**c.c. Richard M. Huber**  
Department of Sustainable Development  
Organization of American States  
1889 F. St., N.W., Suite 792  
Washington, D.C. 20006  
[rhuber@oas.org](mailto:rhuber@oas.org)

**Jim Aronson**  
The Grenada Project  
[thegrenadaproject@yahoo.com](mailto:thegrenadaproject@yahoo.com)



**Executive Director – Desmond A. Ali, Ph.D.**

*Secretariat*

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11 September 2012

Ms. Luisa Fernanda Neira S. & Richard M. Huber  
Department of Sustainable Development  
Organisation of American States  
1889 F St NW  
Suites 794-C & 792  
Washington DC 20006  
United States of America

Dear Ms. Neira & Mr. Huber

Re Protein from Waste, The Grenada Project  
Sustainable Communities Program  
Category : Waste Management & Recycling

1. The Caribbean Region like many other regional communities around the globe is both protein and calorie deficient for foods and feeds. The compensation for these deficiencies is made up by imports of caloric and proteinaceous inputs. For the animal feeds industries, imports consist of corn, wheat, soya bean meal, fish meal, animal fats and other similar inputs.
2. Since animal feeds can constitute >65% of the farm gate cost of raising livestock, this usually means that the prices of final products like meats, eggs and dairy products to the consuming public can be exorbitant.
3. This has hindered the development of livestock sub-sectors in many of the SIDS economies of the Caribbean region.
4. The livestock sub-sectors especially poultry and pork can have significant and crucial socio-economic impacts on these SIDS economies. These impacts are on rural development, women, support industries like printing, packaging, construction, refrigeration, transport & ICT, education, nutrition and the most vulnerable in these societies including the young and the elderly.

5. The Caribbean Poultry Association has been attempting to stimulate the development of the poultry sub-sectors in many of these SIDS in the region. We recognize the vital role of feedstocks in the viability of these efforts and support every effort to search for and develop indigenous sources of these feed inputs
6. The Protein from Waste project in Grenada (The Grenada Project) is a valiant effort to develop such an indigenous feed source.
7. This project if successful will achieve several objectives in addition to the provision of an animal feedstock material. These objectives will include the use of agricultural waste materials, food wastes especially from foodservice, rendering the wastes from the fishing and livestock industries and very importantly the use of waste petroleum products as fuel for the processes.
8. In essence, the project if successful will have a significant environmental impact and reduce the carbon footprint of the countries when implemented.
9. In summary, we feel that if successful, this project can make a significant contribution not only to feeds and livestock development with the associated socio-economic and nutritional benefits but also assist the countries with disposal of waste material which now pollute the environment and reduce the carbon footprint. It could become a highly sustainable project making a vital contribution to livestock feeding, waste management and recycling
10. The Caribbean Poultry Association is in full support of these objectives.

Prepared by *Desmond A. Ali*

Desmond A. Ali  
Executive Director.

cc. Mr Jim Aronson  
The Grenada Project.

# Being a good neighbor to the community and the environment.



I have a strong philosophy that in order to be a good businessman, I must also be a good neighbor. From the design, décor and landscaping of this facility to the sharing of success with local schools and community service organizations, I hope this philosophy is evident.

Being a good neighbor also means being a good steward of natural resources. This total car-care facility includes a "quick lube," which collects used motor oil, transmission fluid and other fluids. These used oils pose a potential danger to the local environment if they are not recycled properly.

Having used oils transported from where they are generated to other facilities where they are recycled is an expensive proposition. And, in addition to the expense, there is no relief from the "cradle to grave" liability with contracted hauling and disposal.

In this facility's early design stage, I found that an EPA-approved method of recycling used oil (by burning it on-site for energy recovery) made great economic sense. Nearly everyone who tours this facility is surprised to discover that the used oil collected in the quick lube operation is pumped over to the car wash operation where it is "recycled" by burning it in three used-oil, hot water boilers! As to cost savings, they are substantial:

- Hot water from the used-oil boilers is used in the car wash, resulting in a better "value-added, end product" for Cloister customers.
- Hot water from the used-oil boilers is also pumped back to the quick lube where it is used to heat the operation.
- Hauling and disposal costs (and the associated liability) are eliminated.

Mike Mountz

*A working schematic, incorporating used-oil, hot water boilers into a car wash operation, is shown on the reverse side.*



Used motor oil collected at the "quick lube" is...



...pumped to the car wash where it is recycled by burning it in Clean Burn used-oil, hot water boilers.



Hot water generated by the used-oil, hot water boilers produces a better "value-added, end product" for Cloister car wash customers.



# Grenada Association of Poultry Producers ltd(GAPP)



"Promoting & Protecting the Local Industry"

Located in: Ministry of Agriculture Grenville  
Tel# 438 4801/534 1086 Email: gappas21@hotmail.com

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August 8, 2012

Mr. Jim Aronson, Founder  
The Grenada Project  
PO Box 25  
Franklin, ME 04634

RE: Letter of Support for, The Grenada Project

Dear Grant Reviewer:

As a proud supporter of food security, sustainable agriculture, workforce and economic development (job creation), and energy efficiency, I am writing to ask for your consideration of a grant for The Grenada Project.

These grant funds would allow the plant, that has been successfully tested, to go into the production of Protein Supplement; which would significantly reduce the farmers cost to feed poultry [feed represents 75% of the cost of a market ready bird] and better able to compete with the imports that are flooding the island.

Issues impacting Grenada's poultry farmers include: the lack of a policy framework, available development finance and most importantly, the cost of feed.

When the plant goes into production, the cost of feed will come down, allowing local farmers to reclaim a significant share of the market that was lost; with the island being used as a dumping ground for cheap frozen chicken, this has caused devastating unemployment in the rural communities.

The Grenada Project's Protein from Waste and Local Crops project will make an immediate impact to the poor and unemployed by creating up to 2,500 jobs within three years.

Sincerely,

Garvyn Pierre,  
GAPP President



October 8<sup>th</sup>, 2012

**TO WHOM IT MAY CONCERN**

The Grenada Office of the Inter-American Institute for Cooperation on Agriculture (IICA), through its *technical cooperation* to Grenada's agriculture sector, has had a long and positive relationship with the Grenada Association of Poultry Producers (GAPP). In fact, through its *Rural Development Programme*, IICA (together with the Grenada Ministry of Agriculture) was instrumental in the formation of the GAPP.

As Coordinator of the IICA Office in Grenada, I was pleased to learn of an initiative (The Grenada Project: Protein from Waste and Local Crops – PFW) which was designed to empower the GAPP and its members. I first became aware of the PFW Project through informal discussions with an executive member of GAPP (Mr. Joshua Lewis).

On August 22<sup>nd</sup>, I visited the project site and was given a guided tour of same by Mr. Lewis. What impressed me most about the project concept was its perceived potential positive impact on Grenada's rural economy: significantly increased levels of rural employment; and increased competitiveness of locally produced poultry meat. Moreover, the project is expected to utilize indigenous raw materials which generally go to waste; and it is expected to have a positive impact on the environment, through its planned utilization of waste motor oil which is currently subjected to arbitrary disposal which could be considered a threat to living species in Grenada's rivers and streams.

I consider The PFW Project to be a laudable undertaking by "The Grenada Project" which, to my understanding, is being spearheaded by Mr. Jim Aronson, in collaboration with the Grenada Association of Poultry Producers. Accordingly, as an indication of its continued commitment to promoting and supporting genuine efforts to increase the prosperity of Grenada's rural population, the IICA Office in Grenada expresses support for Mr. Aronson's efforts (on behalf of "The Grenada Project") to access the necessary funds for successful project implementation.

A handwritten signature in black ink, appearing to read 'Cosmos Joseph'. Below the signature is the printed name 'Cosmos Joseph'.

Coordinator, IICA Office in Grenada



**CLOZIER YOUTH FARMERS CO-OPERATIVE SOCIETY LTD.**

Clozier, St.John's, Grenada W.I

Phone:1473-418-5790/536-8105

Email:youthfarmersco-op@hotmail.com

The Protein from Waste Project

**Re: Letter of support for the protein from waste (PFW) and local produce project**

The clozier Youth Farmers project is a community based organization that focuses on community based development for creating sustainable employment for the community. One of our main focuses are the young, because 50% of the under 25s are unemployed in Grenada and they make up 60% of the population. We are very concerned about the long term food security of our nation and its ability not only to produce food, but affordable food.

The PFW project when it comes on stream will assist farmers in reducing the cost of food and livestock production. This will lower food bills for consumers and assists farmers in making a profit. The project will also encourage young farmers to stay in their rural communities and produce food rather than drifting to the cities in the hope of finding employment.

The PFW project will make a significant contribution to sustainable development of the island with the planned backward and forward linkages with fishermen poultry, cocoa, nutmeg and other general farmers. The waste from the poultry farmers can be used to make compound fertilizer for generic farming and the waste from the general farmers and fisher folk can be used to make protein. Without the protein from waste project this opportunity to create forward and backward linkages for the farming communities will be lost. The protein from waste project is integral in providing an opportunity for small farmers like our collective to be sustainable and strive.

Rural farming communities with the PFW project will finally have an opportunity to develop a sustainable livelihood for their community. We fully support the PFW project and eagerly await its resumption into full commercial production.

Yours sincerely,

Imhotep Mawuto  
President

Dear Mr. Huber and Ms. Neira

19 October 2012

In reviewing the your comment letter, comment #1 states:

**"How will you cover the costs of those activities indicated in the section titled "Project Activities and Methodology" in your proposal that are not covered under this grant?"**

*The costs not covered in this grant in terms of funds and time are: \$100,000 and an additional 12 months.*

*We intend to raise these funds during the 12 months of this OAS grant through an additional grant and are already working towards that goal.*

*We currently have applications in to:*

- 1. The Inter-American Foundation,*
- 2. Compete Caribbean Enterprise Innovation Challenge Fund (EICF) by International Development Bank (IDB)*
- 3. Global Environment Facility (GEF) by UNDP*

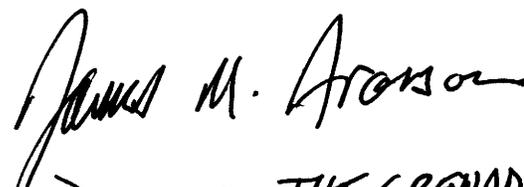
*& we are in discussions with:*

*Caribbean Local Economic Development Program (CARILED) by the Canadian International Development Agency (CIDA)*

*Because we have no commitments from any of these organizations at this time, I, as Project Director of TGP and PFW, would like to state my pledge to the OAS, that whatever portion of the additional \$100,000 that has not been raised by the end of the OAS grant year that I will personally commit my own resources to make up the difference.*

*In the past few years I have funded the PFW project for over \$300,000 so there is nothing irregular about this commitment. In addition, I am confident based on the merits of the project and the fact that we have already proved that we can make our intended and valuable product that we will get the funding that we seek from other sources. I possess the financial ability to meet this commitment and will provide proof of that ability. Please advise me prior to the October 23, 2012 deadline if this is desired, Thank you.*

[www.thegrenadaproject.org](http://www.thegrenadaproject.org)

  
DIRECTOR, THE GRENADA PROJECT



commitment. In addition, I am confident based on the merits of this initiative and the fact that we have already produced our valuable intended product that we will get the final funding that we seek from other sources. I possess the financial ability to meet this commitment to cover any deficiencies and can quickly provide proof of that ability. Please advise me if this is desired. A signed copy of this statement has been forwarded to Mr. Huber, if you should require it..

**How long will they take and what resources will be necessary?** As discussed above, the final round of funding required will be approximately \$100,000 and the time period to full sustainability another year [after the year of the proposed funding with OAS]. See table below:

Activity	12 Months Following OAS Project Year											
	1	2	3	4	5	6	7	8	9	10	11	12
Standardization & Coordination w/ Feedmills	X	X	X	X								
Full Production & Sales Commence & Continue	X	X	X	X	X	X	X	X	X	X	X	X
Finding new Sources of Feedstock	X	X	X	X	X	X	X	X	X	X	X	X
Develop Farmer Pricing after Stabilization					X	X	X					
Buy Local Community Consciousness Efforts								X	X	X	X	X

We have developed the Time Frame/Work Plan for this 12 month period to illustrate how that year's time will be allocated. As you can see this is a year of full production in which the maintenance fund is created. The first 6 months of payroll will be funded out of the \$100,000 while the second six months of payroll will come [after farmer pricing is established] from sales revenue. By the end of that second year the plant should be fully sustainable with reserves for all contingencies. No further financing will be required.

Comment #2

**The activities in the proposal submitted include the fabrication, assembly and testing of the equipment. Could the timeframe be adjusted in order to have the plant operating and producing before the end the project?** The revised Work Plan has been compressed to accommodate the start of First Production prior to the end of the project's 12 months as requested. It is in fact what we would be doing regardless. This revised work plan [and the one above for the second year] is consistent with all our earlier timelines. The original Sustainable Communities work plan was designed to make all the program's activities relate to the incoming equipment and to fill the 12 month period with only those activities.

Accordingly please reconsider the **“Project Activities and Methodology”** categories: “Test runs, trouble shooting and repairs” and “First production runs and further testing” as now being part of the 12 month grant period. [or as having an asterisk\*]. This means testing should be complete instead of just started and First Production will commence by the end of month 10.

This new extended agenda will require an extra \$2,880 for payroll from TGP and will be achieved within the same budget by lowering the value of J. Aronson’s in kind 2,000 hours from the original \$36,000 to \$33,120. Time wise, this is reflected in the revised Work Plan [top of pg 1] and financially in the revised Budget [pg 14], items 4&6 being the only changes there.

We have reproduced “First production runs and further testing” methodology here for a quick reference, it reads: “The various feedstocks to be used in production will be brought in to run through the whole line. Products will be produced and sent out for analysis . More “bugs” will surface, more repairs, corrections and adjustments. 2 trucks will be purchased, [1 heavy + 1 light], a catwalk and office will be built. Screening for insects, birds and rodents will be installed.” Please note: The trucks, catwalk, office and screening will be part of the final **[post OAS]** round of funding.

Comment #3

***Has a plan been developed to market the protein supplement? Please provide more information on the expected selling price and potential buyers in the initial phase.*** Yes, it is our intent to sell the Protein Supplement to the local feedmill. These supplements will range from 60% protein for straight fishmeal to 25% for straight processed brewer’s spent grain. Currently, on the open market [where the feedmill purchases it’s raw materials] fishmeal is available at \$900/ton [FOB the US]. Soy bean meal with 48% protein is valued at \$650/ton [FOB the US]. Our product is local therefore we suffer no overseas transportation penalties and it is made from ingredients that have no cost other than local transportation. Alternative buyers are discussed in following Comment #4.

Comment #4

***The proposal mentions that you are planning to work with the local feedmill. Have any actions been taken in this regard?*** During testing we were visited by Horace Hamilton, the sales manager for Caribbean Agro Industries/ADM that owns the local feedmill. He has been quite supportive and enthusiastic about the project. After viewing our used oil burning boiler in action he came back with his colleague Mr. Cecil Hypolite who is the local feedmill’s manager and director. We had a meeting at the plant to discuss the logistics of delivery of Protein Supplement to the mill. We talked about various available containers and drums and the possible need to control spoilage with antioxidants. These men enthusiastically expressed the opinion that the on-island production of Protein Supplement from waste will be good for the farmers, the mill and the environment. We had previously met several times at their feedmill years ago and they have consistently voiced their eagerness to see PFW in production.

***Would the feedmill be the main buyer of the protein supplement?*** During First Production we will probably just want to keep liquidating Protein Supplement as we produce it and create some cash flow at the same time. For that purpose a relationship with the local mill is the most efficient since just a few miles separate them from the PFW plant. When the project is producing a consistent product on a consistent scale we will want to develop a different relationship whereby they produce a very cheap low protein mix [by cutting way back on the expensive high protein products] to which they add our Protein Supplement and sell this at a very low price to the farmers. It may be at this juncture we need to bring some competitive alternatives to the table, at least to shed doubt on any presumed monopoly that they have.

***Are there alternatives in case there is not a strong interest from their part?*** This is a commodity business where price rules with equal quality. Therefore there will be “strong Interest” on their part even if choose not to display it. Our product is local and overseas shipping is expensive. This gives us an advantage. Despite our small economy of scale, our product is made from all free inputs including the fuel we use. And, we will have alternatives. We need alternatives because it puts us in a favorable bargaining position.

There exists several competing mills within 100 miles. One to the North in St. Vincent and several to the South in Trinidad. While they do have some shipping concerns, albeit small ones, they are all eager to expand their enterprises. To find new business outside their isolated island markets is very desirable, even if it means taking a little less profit on their outside sales. These sales represents a potential for additional profit in a limited business environment.

This can support our hope of convincing the local mill to deal fairly with PFW [that is really the only thing we are asking for] in order to avoid the possibility of outside competitors getting a foothold on their turf. It is essential that we get fair market value for our product in order to drive the very best bargain for the farmers. If we can not have a serious positive impact on the farmer’s bottom line then we can not create sustainable livelihoods for hundreds more farmers to join their ranks.

Comment #5

***Please provide additional information on the cooperative of poultry farmers who would be invited to form and operate the plant.*** At the present time there does not exist a cooperative of poultry farmers. They are currently represented by the community based Grenada Association of Poultry Producers [GAPP]. This organization is by far the biggest and most organized group of poultry farmers on the island. Through the membership of GAPP [see their attached letter of support] we will undertake to form a new cooperative, designed around this project, for the poultry community. The whole poultry community [GAPP membership not required] will be invited to join the new co-op and participate. In the past we have had cooperative experience with organic cocoa farmers and goat dairy farmers. Generally when a community with common interests has a common possession such as capital goods, equipment

or a facility cooperatives are formed for the purpose of participation in the benefits and shared responsibilities. This is highly endorsed by the Grenadian government. Formative agents are assisted by government agencies with materials directly related to the formation of these cooperatives. It is not a difficult, nor is it expensive.

***Have actions been taken in this regard?*** Only to the extent that the farmers have discussed the structure with the project leaders on many occasions. When the funds are in place for the plant to go into production the cooperative will be formed by an executive steering committee of volunteers from the poultry producer community.

***Are you certain about the willingness and capacity of poultry producers to operate the plant?*** Willingness is something that humans like to be seen expressing. It remains to be seen if the future depth of such willingness is equal to the expressed willingness that we have witnessed. Will that depth transcend the words and result in action? We feel confident that for the purposes of cooperative formation, it will.

Capacity, on the other hand, is a much more important question. After all, “capacity building” has to start with at least a rudiment of existing capacity. Fortunately, we will have some leverage working in our favor. Currently poultry producers are severely constrained by the high cost of feed. We have been hearing this lament for decades. 80% of the cost of a fully grown bird is feed. It makes all the difference in a farmer’s life if they can save precious funds on that feed. To a poultry farmer, the net effect of PFW will be like getting a giant raise. The leverage factor comes into play because the poultry producers will be keenly aware that if their community’s cooperative fails to demonstrate competent project management, they can lose much of these life sustaining benefits. In that event, the plant itself will necessarily live on as a profit oriented recycling entity with a replacement management and this will dilute a significant portion of the benefits that the project was designed to deliver to them [the farmers].

Furthermore, it is our intent to work and struggle, if need be, to make this happen for the maximum benefit of the community. An observer might have cause to speculate that the concept of community ownership is perhaps too lofty a goal. This understandably begs the capacity question that you ask, but it also encompasses a personal dream that that we are committed to. TGP will not shy away from this commitment. It is essential we must first try our utmost best before we submit with resignation, otherwise we will never know what could have been. We understand the essential need for The Grenada Project to provide extensive mentorship to the cooperative leaders and we will diligently emphasize the importance of maintaining this new found, life changing, income opportunity with the cultivation it deserves.

Comment #6

***Who owns the plant now and are will it be owned by the cooperative in the future?*** The PFW plant is solely owned by The Grenada Project, a non-profit NGO established as a 501(c) 3 in the US and a registered non profit in Grenada. The cooperative will have to go through a two phase

trial period during which it will first need to demonstrate it's ability to properly manage operations. The second phase will be to establish a year of continued successful management of plant operations. At such time as these prerequisites are met TGP would entertain the responsible transfer of the plant to the cooperative. Please bear in mind that this all must be done in such a manner to comply with the fiduciary requirements of Non-Profit Organizations under US Treasury regulations.

Comment #7

***Please provide more information on how TGP will obtain the amount of organic waste required to produce the animal feed?*** To date TGP has secured supply relationships with their three most strategic sources, they are:

For fish waste, The Ministry of Agriculture, Fisheries Division,

For Brewer's Spent Grains, Grenada Breweries,

For used lubrication oil to be used as fuel, Grenlec, the island's electric utility.

These arrangements will be due for renewal, but they each represent beneficial ongoing relationships that have been recently exercised .

***Have relationships been established and commitments been made with restaurants and other sectors to obtain it?*** With smaller [less strategic] sources, such as restaurants, hotels, markets, small agro processors and abattoirs, we have refrained from written obligations until such time as funding for production is obtained. At such time we will pursue these relationships before production commences. It should be said that of the many potential feedstock suppliers who have discussed the concept with us, they are all eager to participate. These entities view participation in PFW as good public relations that does not come with a cost and may actually save on disposal. We viewed pursuing early contractual relations with these lesser suppliers as overkill in an uncertain environment. After all, PFW was stalled for two years just getting permission to use the government land the plant is situated on.

Alternative feedstock experiments: While not a waste product, it is worth noting that for the last 4 years the project has been cultivating test plots of leguminous tree crops such as Gliricidia. The foliage of certain trees is high in protein and when properly combined with other feedstocks [in the supplement] they can constitute a new source of livelihood through agro-forestry.

***What is the cost associated to this part of the production process?*** Because we get all the feedstocks for free, the associated costs amount to truck, driver, helper and durable reusable steam cleanable containers. [The containers and the steam cleaner are already in the project budget]. We feel that presenting the supplier with a fresh steam cleaned container with each cycle will encourage conscientious sorting and friendly participation. While fuel is expensive the truck will run a well planned daily route and keep costs to a minimum, especially in relation to the value of final protein product. Currently in Grenada the cost of hiring a private truck, driver and helper to perform such a route for one day would be less than \$200. We anticipate

that the cost with our own truck will be considerably less.

Comment #8

***Is there a formal relationship/commitment with Grenlec to obtain the used oil?*** Yes, a supply agreement was signed between Grenlec's managing director and TGP at the project's inception prior to purchasing the equipment. Subsequent to that TGP has solved an oil/water separation problem that saved Grenlec significant funds in exporting their waste to Trinidad. They were paying to export water. Hence we are on a firm footing and have recently taken delivery of a thousand gallons of their used oil this past April.

***How much oil and how will Grenlec deliver it to the plant in the initial phase?*** In the initial phase we anticipate using about 250 gallons of used oil per week. Our agreement with Grenlec stipulates that TGP will be responsible for picking up the oil [not Grenlec] at the Grenlec generation plant a few miles from PFW. They will be pump the oil into our 275 gallon portable tanks on Sundays when our [future] feedstock truck can be easily converted to an oil truck by putting the empty tanks in the truck bed..

***Is there a cost associated to this activity?*** As per the last paragraph answer to the previous comment [#7] where we estimate a full day of truck with driver and helper at considerably less than \$200. In this case it would be less than half a day and no helper would be needed. So we could deduce that such a trip would cost perhaps \$75 to get 550 gallons of fuel. That would translate out to a fuel cost of 14 cents/gallon or 2.5% the cost of diesel fuel. This is the biggest factor that insures the success of PFW.

***Given that having enough used motor oil will be key to operate the plant, is TGP certain that it will count with a reliable supply of used oil from Grenlec in the long term?*** Because it is key as your evaluators have recognized, TGP will not be relying on Grenlec as a sole source of oil. A recent survey that was performed for PFW by Ministry of Agriculture personnel indicates that Grenada generates approximately 95,000 gallons [>1800 gallons/week] of used oil per year. This is concentrated at the many automobile dealerships where many of the island's cars and trucks are serviced. During the past few years as the plant has been constructed, PFW has been approached by several dealerships [without solicitation] to please take their oil. We have [10] 275 gallon portable tanks and we could station one at each dealership if need be. When and if PFW determines that Grenlec is not keeping up with demand we will immediately engage with some of these sources. At the moment it is PFW that can not keep up with Grenlec.

Comment #9

***How will the local community be involved in the project? Given the focus of the OAS "Sustainable Communities in Central America and the Caribbean" project in community driven sustainable development, involvement of local people not only as beneficiaries but also as main actors in the process is key.*** There exists a community of poultry farmers [50% women & men] in Grenada and they are of primary interest to this project. TGP started to work with the poultry community 6 years ago

when we supported an on island hatchery that is now totally self sustaining. We brought from the US a “mobile processing unit” to provide on farm processing and provided an interest free loan to get it started. We spoke to farmers from all over Grenada and in talking with them we found that no matter what parish they were from, they all agreed on one thing: That the single biggest factor affecting their lives is the high cost of feed. It is 80% of the cost of raising a bird. So solving the expensive feed problem was the community’s overwhelming choice, nothing else came close.

The community that the project is centered around is that of these poultry producers. They are predominantly represented by their own community based organization: the Grenada Association of Poultry Producers (GAPP). Since the PFW first survey of the farmers at the project’s inception, the Grenada Project (TGP) has been working with them hand in hand. We consult with the GAPP executive committee on a regular basis. Your evaluators already have a Letter of Support from them as well as a Letter of Support from the Caribbean Poultry Association which represents the poultry community throughout the Caribbean.

The local communities have been involved in designing the project, a symposium to discuss and identify the problems hindering their ability to create food security for their community in a sustainable manner was held on March 2012 and it continues to be a tool that will be used to generate community based solutions for community problems.

The action plan that came out of the symposium is a direct result of the various communities determining the solutions to their own problems. The project will be a legalized cooperative entity that encourages its members to pool resources together and bring about solution based resources for the community. The collective approach will help the cooperative to be competitive and resilient towards the challenges of globalization and the goal of food security and sustainable development.

The structure of the cooperative will allow continuous involvement in the decision making process by members representing their communities interests whilst managing the project. There will be yearly symposiums, monthly management meetings and three monthly open meetings to assure that members have a continuous involvement in the development of the project. The democratic processes will be used to elect members to run the cooperative, ensuring accountability and transparency in the management of the project.

The strategic business development plan will need to be ratified by community members before it is adoption as a working document. The project's profit will be used, not only to sustain the project - but to develop the human social capacity. The method to be used will be individual training, mentoring, workshops for group development and open forums, for achieving the long term community social, cultural and economic objectives and aspirations.

The poultry farmers constantly visit the plant offering helpful opinions about logistics, available sources of feedstock, distribution and other associated factors that can make their lives as

farmers better. One example of how they steer the process is our “maximum rule.” That is a preset maximum amount of Protein Supplement available to an individual operation in times of scarcity. When demand is overwhelming the plant, large operations may not be able to get all the Protein Supplement they want but small vulnerable farms can always be supplied. This will mean that a maximum amount of bags per farm will be instituted. This will provide protection and security for the small stakeholders and is representative of the kind of thoughtful ideas and input that the community has already brought to the table.

In addition there are about a dozen more regional community based organizations throughout the island that are agriculturally based that support the project and we have attached a recent Letter of Support from one of them that is just miles from the plant as an example. They state in their letter: “The Protein From Waste project is integral in providing an opportunity for small farmers like our collective to be sustainable and thrive.” As you know we intend to form a Farmer’s Cooperative for the management of the plant. All of these Community Based Organizations will participate in the formation of that Cooperative which will insure that they will forever be “*main actors in the process.*”

Comment #10

***Who will operate the plant? And how will you cover the start up costs of operation if the grants funds will not be used for that purpose?*** During the grant period Assembly, Testing and the First Production phase operations will be performed by employees Lydon Williams and Kevin Charles under the guidance of Jim Aronson. The costs for their labor is shown as items 3 [\$4,800 from OAS] & 4 [\$2,880 from TGP] in the budget. Jim Aronson’s hours are in kind project inputs [item 6 in the budget. So, the start up costs of operation during the year of the grant are part of the grant budget.

Since it’s inception the plant was designed, built and tested under the guidance of TGP’s director, James Aronson. Mr. Aronson will be the PFW Project Leader for the duration and beyond, [beyond meaning as an advisor to the poultry producer community’s cooperative]. The current employees are in fact residents of the landfill and it surrounding communities. When not working at the plant they are independent salvage contractors, recycling what they can garner from the surrounding landfill. These men have built the PFW plant and have been working there right through the recent successful testing phase.

Because they have been carefully trained by Mr. Aronson and our team members Robert Davenport and Byron Townsend [see paragraph below\*] they will be the mainstay employees for all future operations. Because of budget constraints they have been working for minimum wage. This will have to continue until production and cash flow commence.

\*Robert Davenport is a rendering specialist. He was Maintenance Superintendent of one of the 3 biggest plants in the world for Perdue Farms. He is a trouble shooter and problem solver for the rendering industry. Byron Townsend is the Service Manager for Webster Engineering, the

manufacturer of our used oil burner which is critical to our operation. As the Combustion Specialist for PFW his task will be to advise the group for burner tuning and repair.

Comment #11

***Please provide the technical specifications of the equipment to be purchased and installed under the project.***

**FABRICATION phase:**

**Hopper, Conveyor, Bags, Packaging & Hammermill/Grinder:** Fabricate a hopper using ¼” steel plate. Dimensions 4'x4'x2'. Add, discharge screw conveyor 6" diameter and 8' long W/1/2hp 230v 50hz 1425rpm motor drive unit W/safety guards for all moving parts. Into hammermill type grinder W/5hp 230v 50z 2750rpm. W/safety lock outs. [keeps the unit from opening while running and keeps the unit from starting when open]. From grinder a discharge conveyor of 6" dia W/1/2hp motor. To discharge chute with a catch bag connection. Bags will sit on a floor scale. Once the target weight of the bag is reached, the conveyor will shut off.

An industrial counter balanced [ to prevent worker fatigue] bag sewer will seal bags. Anti-oxidents will be added to the meal as it discharges from the cooker and before the material is ground. Thus producing a thoroughly treated product, resistant to spoilage and protecting the protein values for the end user.

**Electric Auger/Elevator:** A feed conveyor for the cooker inlet. Conveyor will be 25' long W/ 7.5hp motor drive unit 230v 50hz 3ph. Fabricated in galvanized steel to prevent corrosion. At the bottom of the conveyor there will be a receiving hopper for the product to go into [4'x4'x4'-¼” thick]. W/on/off pendant switches top and bottom for safety. All moving parts will be guarded.

**Permanent Fuel Tank w/Pump:** Pre-fabricated fuel tank to be assembled in Grenada. Assembly will be pre cut ¼” carbon steel W/2"x2" angle steel for corner reinforcement, welded on site for shipping purposes. Tank will be 10'x5x5' capacity 1750 gallon. W/1.5" 2hp230v 50hz gear pump for heavy oil to pump from the ground up to the tank. Standard gravity return to the boiler room. All piping will be steel for durability and safety reasons.

**Condenser Sump Modifications and Repairs:** A 4.5'x6'x6' steel liner for the steam condenser sump tank to protect the concrete sump walls. ¼” Steel plates will be pre cut and welded on site for shipping purposes. A condenser system will be submersed into the tank. It will be made of 3" pipe material with 3" ells welded in a serpentine manor. The unit will cover one side of the condenser tank. Water from an adjoining stream will cool the sump tank, condensing steam from the cooking process. The serpentine unit will measure 5.5'x5.5' and will have ¼” heat radiation fins welded to the unit for better heat transfer. This unit will be pre assembled and shipped whole.

**PROCUREMENT phase:**

**Fisheries Bins:** Rotoplastics, Trinidad

[8] Rotocool 67 gallon insulated containers: 41" x 21" x 29"  
[20] Rhino Bins 30 gallon: 21" x 43"

**Karcher Steam Cleaner:** Aussie Pumps Stella Series  
[1] #100/TS SS 1500 psi, 11 gpm, 240v [3HP] 120KG

**Water Softener Salt:**  
[40] 40lb bags Morton

**Boiler Water Treatment:**  
ECOLAB Boilercare 1604 55 Gallon Drum

**Oxy Acetylene Tanks:** Northern Tool  
Full #4 Oxyacetylene Cylinder Set, Model# PKG-4

**Anti-Oxidant:** Additive  
Agent that preserves protein and inhibits spoilage [6] months supply [i.e. BHA/BHT]

**Feed Handling equipment/spares:** Various suppliers  
Motors, wire, switches, bearings, seals, belts, bushings, shovels, hoses, nozzles, pumps, back up assemblies, controls

**Tools, hoists, spares, etc:** Various Suppliers  
Drill, bits, gaskets, electric hoist, plumbing & pipe, meters, thermometers, pressure gauges, pipe insulation, test kits, compressor & oil, shop vac, solvents, blades,

**Catwalk, Stairs & Top Container Modifications.:**  
Various structural steel stock for fabrication in Grenada for access to upper storage container and fuel tank access

Comment #12

***Please provide more information about the surrounding community where the plant is located and indicate whether they have been or will be involved in the project.*** The plant is located on Government land in the middle of Grenada's only landfill in Perseverance, St. George. Like any landfill in the Caribbean or Central America, Perseverance is a tough place to live. One of the focal points of the Sustainable Communities Program recognizes Waste Management and Recycling and where better to start than the landfills with their immense poverty issues and pollution. This is the home of the poorest of the poor.

From the very inception of PFW we recognized that we ere going to have to deal with poverty issues at our proposed plant site. The first action we committed on the ground in Grenada was to build a new home for a squatter who was living on the precise plant location. This we did at the back of the parcel of land that the Government designated for us. It's a clean modest little

house that was built by our employee “Zebi,” PFW’s Jim Aronson and Zebi’s friends. The men were paid out of PFW’s budget and the beginning of a relationship was started.

Both Zebi [Kevin Charles] and his best friend [Lydon Williams or “B”] have been working at the plant since 2008. “B” lives across the road from the plant and supports his little family of 4 in a never ending struggle eking out an existence from the dump. That is when he is not working at the plant. B and Zebi will be the main mechanics for PFW. B’s brother “Jones” will work the “clean room” at the plant where we will package the finished product. Other locals either from the landfill or the adjacent village of “Brizan” will be given opportunities when the plant goes into production. Because none of the men have a driver’s license our truck driver may not be from the immediate area.

PFW prides itself on it’s respectful relationship with the local community. When the plant is active dump workers all come to a tap that is set up outside the plant to get water. Because PFW is recognized as a hope for the future we have had little problem with crime in fact we are protected. It is a very closed community, dangerous for outsiders unless they have business with a resident or the plant.

Comment #13

***If your proposal is selected for funding, your performance at the end of the 12 month period will be measured against the outputs described in the proposal. Currently the outputs in the proposal include long term goals such as the conversion of 750,000 lbs of waste, incineration of 13,000 gallons of waste oil, etc. Please update this section of the proposal to reflect the outputs that will be achieved during the 12 months of this specific grant.***

Obviously, it seems that we did not properly fill out this portion of the “Logical Framework.” What we gave was our estimation of what the PFW plant’s outputs would be in the first year of standard production. Using the revised Time Frame/Work Plan [comment #1] we show that “First Production” which is only active for the last 10 weeks of the project year, is defined as “The various feedstocks to be used in production will be brought in to run through the whole line. Products will be produced and sent out for analysis . More “bugs” will surface, more repairs, corrections and adjustments.”

That means, in the last ten project weeks, we can anticipate producing some product and then making changes, repairs, corrections and adjustments. This may mean that the production for this phase will only be a small fraction of what actual production is capable of. This segment is a learning process rife with unknowns. We will not be concerned with production output numbers but only to get the line running smoothly by ironing out the glitches. What ever product we manufacture must be sold quickly without great concern for the revenue it may produce. We just need to keep things flowing so as not to clutter up the production process operationally.

Consequently, for the ‘First Production’ [10 week] output projections, we will calculate using one third of actual final production resulting in the following outputs at the end of the “12 months of this specific grant”:

<i>Narrative Summary</i>	<i>Performance Indicators</i>	<i>Means of Verification</i>	<i>Assumptions/Risks</i>
<i>Outputs</i>			
<i>Conversion of 26,000 lbs of waste</i>	<i>Log book notations</i>	<i>Plant logs</i>	<i>No Natural disasters No worker discord No belligerence from competitors</i>
<i>incineration of 850 gallons of waste oil</i>	<i>Log book notations</i>	<i>Plant logs</i>	
<i>10 Employment increases</i>	<i>Plant payroll Stats</i>	<i>PFW books</i>	
<i>Economic Development improvements</i>	<i>\$/PFW feed - \$/std feed X output</i>	<i>Output/sales records</i>	

Comment #14

***We are requesting all shortlisted institutions to send letters of support from the local government and from recipient community-based groups endorsing the project. We acknowledge that your proposal is very strong in this respect given the numerous letters of support we have received so far. However, it would be helpful if you could send a letter of support from a community-based organization in Grenada that will be involved in the project.*** As stated in our response to Comment #9 [above], the community that the project is centered around is that of the poultry producers. They will be organized into a Cooperative which will be formed in the future when funding for production has been achieved. But in lieu of that the current farmers are predominantly represented by their own community based organization: the Grenada Association of Poultry Producers (GAPP). We have supplied a Letter of Support from that organization and will attach it again to this document.

In addition, we have just received another Letter of Support in the intervening week from the Clozier Youth Farmers Co-operative Society a small but active community based organization that is just miles from the plant and inland of Gouyave in St. Johns parish. The letter is quite

supportive and between it and the one from GAPP I think we have established that our support from the agricultural community and more specifically the poultry producer's community, is widespread and active. There are about a dozen small and local community based organizations in Grenada with concerns in poultry and livestock production and we will operate with inclusiveness regarding them all. Remember the PFW Cooperative to be formed is for every member of the poultry producer community and will be made up of all the poultry farmers and their families with or without additional affiliations to specific groups.

**Revised budget:**

**Protein From Waste and Local Crops  
The Grenada Project  
Budget  
For the Twelve Month Period  
November 1, 2012 to October 31, 2013  
(Expressed in United States Currency)**

<b>Income</b>	<b>Note</b>	
Grant Funding	(1)	\$50,000
TGP Funding	(2)	50,000
<b>Total Income</b>		<b>\$100,000</b>

<b>Expenditure,</b>		<b>Activity</b>	<b>Amount</b>
Salaries and Wages [Williams & Charles]	(3)	Assembly & Testing	\$ 4,800 OAS
Salaries and Wages [Williams & Charles]	(4)	First Production	2,880 TGP
Salaries and Wages [Davenport]	(5)	Fabrication	8,000 OAS
Salary [Aronson]	(6)	All Activities	33,120 TGP
Hopper, conveyor, bags & packaging	(7)	Fabrication	4,700 OAS
Vibratory screen & Grinder	(7)	Fabrication	3,900 OAS
Electric auger/elevator w/spares	(7)	Fabrication	5,950 OAS
Permanent fuel tank w/pump	(7)	Fabrication	3,650 OAS
Condenser sump modifications and repairs	(7)	Fabrication	2,600 OAS
Fisheries Bins	(8)	Procurement	5,050 OAS
Karcher steam cleaner	(8)	Procurement	3,950 OAS
Salt & Water treatment	(9)	Procurement	1,050 TGP
Oxy Acetylene tanks	(9)	Procurement	1,000 TGP
Anti-oxidant	(9)	Procurement	950 TGP
Feed Handling equipment/spares	(9)	Procurement	3,000 TGP
Tools, hoists, spares,etc	(9)	Procurement	2,600 TGP

Catwalk, stairs & top container mods	(9)	Procurement	3,400 TGP
Travel	(10)	Fab & Assembly	2,000 TGP
Utilities	(11)	Testing	300 OAS
Shipping /transport/port charges	(12)	Transit	5,800 OAS
Trucking US	(12)	Transit	350 OAS
Trucking & Crane Grenada	(12)	Transit	950 OAS
<b>Total Expenditure</b>			<b>\$100,000</b>

### Notes to the Projected Budget

1. OAS Sustainable Community financial resources
2. The Grenada Project [TGP] Matching Financial Resources
3. 2 Crew, Lydon Williams and Kevin Charles worker/mechanics for Assembly and Testing activities 800 hours each at \$3/hour to be paid by OAS Sustainable Community financial resources.
4. 2 Crew, Lydon Williams and Kevin Charles worker/mechanics for First Production runs activities 480 hours each at \$3/hour to be paid by TGP
5. Team Member Robert Davenport for Fabrication [welding] activity 200 hours at \$40/hr to be paid by OAS Sustainable Community financial resources
6. In Kind Resource: Project Director James Aronson one year/2000 hours at \$16.56/hr supplied by TGP Matching Financial Resources, all activities
7. Materials other than labor for the Fabrication activity of the listed equipment that will be fabricated by Robert Davenport and James Aronson in Fabrication activity
8. Equipment that will be purchased with OAS Sustainable Community financial resources in the Procurement activity
9. Equipment that will be purchased with TGP Matching Financial Resources in the Procurement activity
10. Travel: one round trip Maine/Florida, one round trip Maine/Grenada to be purchased with TGP Matching Financial Resources
11. Utilities for Assembly and Testing phases to be paid by OAS Sustainable Community financial resources
12. Transportation and cranes for the Transit activity to be paid by OAS Sustainable Community financial resources.