

PROJECT TITLE: Technology Upgrading of High Precision Metalworking and Fabrication

PROJECT BENEFICIARY: Davao Beta Spring, Inc.
Km.1 4 Malagamot Road, Panacan, Davao City

COORDINATING AGENCY: DOST XI

PROJECT COORDINATOR: ENGR. JUDY DONNA dA NUEVA ECIJA
City Director, CSTC-Davao

Objectives:

1. To acquire a high precision Computer Numerical Operated (CNC) lathe machine that can improve plant operation through the following:
 - Quantity – increase of rate of production by four (5) times or more
 - Quality – maintain product quality through consistency and accuracy
 - Time – achieve timely delivery of products. Equipment shall be designated for manufacturing purposes only, such that fabrication works are not interrupted. In the current set-up, manufactured products share the same equipment as the ones for fabrication.
 - Workspace - minimize machine footprint thereby, maximizing workspace for future expansion. The machine is able to replace four to five (4 to 5) conventional lathes.
 - Capability - increase the over-all plant capacity by channeling labor force to other products.
 - Cost – reduce cost of production due to its overall speed and accuracy, it also cuts down wastes through human error
 - International Market – enable Filipino designed products to be globally competitive through improvement in quality and increase in production quantity.
2. To upgrade the management and operations of the shop through international certification; and
3. To enhance the knowledge and skills of the workforce

Expected Output:

- 40% increase of the production capacity after the 1st year of intervention and 10% on the succeeding years
- 40% increase in income after the 1st year of intervention and 10% on the succeeding years
- 10% increase in productivity
- Improved product quality and reproducibility
- Improved management and operations through ISO 9001 certification
- 2 personnel development/upgrading activities

S&T Intervention:

Below are the identified S&T Interventions:

DOST Intervention	Benefits Derived
CNC Lathe Machine	<ul style="list-style-type: none">• Better control of tool motions under optimum cutting conditions.• Improved part quality and repeatability.• Reduced tooling costs, tool wear, and job setup time.• Reduced time to manufacture parts.• Reduced scrap.• Better production planning and placement of machining operations.
Trainings	<p>CNC Machine Operator Training</p> <p>This training involves how to read, edit and write programs for CNC machines, and how to navigate the control panel. It will also provide the employees a thorough understanding of each button on the machine's console.</p> <p>Occupational Safety and Health</p> <p><u>Cross-disciplinary</u> area concerned with protecting the <u>safety</u>, <u>health</u> and <u>welfare</u> of people engaged in <u>work or employment</u>.</p> <p>(http://en.wikipedia.org/wiki/Occupational_safety_and_health)</p>
Other Technical Interventions	Optimize use of resources and waste minimization.

PROJECT TITLE: Productivity Improvement and Product Development of Baked Food Products

PROJECT BENEFICIARY: Ma-an's Bakeshop, Co.
Mc Arthur Highway, Bago Aplaya, Barangay Bago Aplaya, Davao City
Tel Nos.: (082) 286-8552/298-0068/286-8241

COORDINATING AGENCY: DOST XI

PROJECT COORDINATOR: ENGR. JUDY DONNA dA NUEVA ECIJA
City Director, CSTC-Davao

Objectives:

- To acquire fuel and time efficient ovens and all its accessories;
- To acquire a depositor and its accessories for accurate and efficient processing of long shelf life products like cookies and bars;
- To expand to new products competitive in the market;
- To upgrade the production facility in compliance with the food safety standards; and
- To enhance the knowledge and skills of the workforce.

Expected Output:

- 20% increase of the production capacity after the 1st year of intervention and 10% on the succeeding years
- 20% increase in income after the 1st year of intervention and 10% on the succeeding years
- 10% increase in productivity
- 5 new products developed
- 3 new markets penetrated
- Improved product quality and food safety
- Improved production facility in compliance with the food safety standards
- 2 personnel development/upgrading activities

S&T Intervention:

Below are the identified S&T Interventions:

Gaps/Issues/Concerns	Recommended S&T and Other Interventions
The desired production capacity is not met since there are steps in the process that are done manually/conventionally.	- Acquire equipment with upgraded technology to meet the desired production capacity of the bakeshop.

Gaps/Issues/Concerns	Recommended S&T and Other Interventions
Manual molding and cutting of cookie doughs result to inconsistent size, shape, and weight.	- Acquire an equipment that produces consistent output.
Manual filling of batter to baking pans becomes a bottle neck when there is mass production of cakes.	- Acquire mechanized equipment.
The length of baking time also equates with the cost of fuel consumption.	- Acquire equipment that is cost efficient.
There is a need to develop new products to meet the changing demand of the market and to be on top of the competitive industry.	- Establish an R&D laboratory
Other food safety concerns in the processing facility and human resource.	<ul style="list-style-type: none"> - Conduct training on good manufacturing practices (GMP) both for the management and production workers. - Use appropriate equipment/ tools/ utensils e.g. plastic pallets, corrosion resistant racks, plastic crates, equipment that facilitates less human handling of the food materials/products. - Avail consultancy services of the Davao Food Safety Team.
Workforce's knowledge and skills on safety need to be improved	- Conduct seminar/training on occupational safety and health management.

PROJECT TITLE: Facilities Upgrading for Granulated Charcoal Processing of Andrada Charcoal Trade

PROJECT BENEFICIARY: Andrada Charcoal Trade Philippines
Rizal Ext., Brgy. Central, Mati City, Davao Oriental

COORDINATING AGENCY: DOST XI

PROJECT COORDINATOR: MS. SHARON B. MENDOZA
Provincial Director, PSTC-Davao Oriental

Objectives:

The general objective of the proposed project is to increase the production capacity thereby increasing the production volume and improving the quality of the products produced. To accomplish this, the proponent has set the following specific objectives:

1. To upgrade existing production facilities thru acquisition of one (1) unit vibrating sifter with conveyor belt
2. To generate employment for the community

Expected Output:

With the new proposed equipment, it is expected that the enterprise will be able to double their production capacity and improve the efficiency of the production system. This will lead to quality granules that are compliant to the standards set by the buyers.

S&T Intervention:

Below are the identified S&T Interventions:

GAP/NEEDS	PROPOSED INTERVENTION
Existing plant lay-out does not consider time and motion aspects, process flow and other productivity enhancement are not in place.	Consultancy on Plant lay-out improvement, 5S and production system/s may be introduced to the proponent through the Manufacturing Productivity Extension Program (MPEX)
The existing production is low. There are instances that purchase orders are not met because of the limited production capacity. Sieving of crushed charcoal into desired sizes (2x6,4x8 and 6x12) is the identified bottleneck in the production. The estimated output of 300 tons will take one month to produce. Purchase orders do reach 700 tons in a month.	Upgrading of facilities that will mechanize and enhance production capacity is needed. Acquisition upgrading of existing facility that will improve granulated charcoal processing. Acquisition and upgrading of existing facility that will improve granulated charcoal processing. Hence acquisition of equipment such as: <ul style="list-style-type: none">• 1 set vibrating charcoal sifter with belt conveyor

GAP/NEEDS	PROPOSED INTERVENTION
<p>Also the loading of charcoal is done manually. This requires hard labor to carry sacks of charcoal into the hammer mill/crusher equipment.</p>	<p>The acquisition of 1 set vibrating charcoal sifter with belt conveyor is expected to increase the capacity of the charcoal processing plant by at least 80% since it will speed up the sieving/ sorting of crushed charcoal according to their buyer's specifications. Only charcoal sizes not within the buyers specifications (bigger than specs) will be loaded to the existing hammer mill through the conveyor, thereby decreasing manual labor.</p>
<p>There are electric-powered equipment that can efficiently operated to reduce electric consumption. Illumination in the working area should be considered if workers</p>	<p>Provide energy audit consultancy to help decrease the company's cost of production.</p>
<p>Per DOST-GAD assessment, the enterprise operation and processes has promising GAD prospects (conditional pass, with a score of 7.03)</p>	<p>Provide Gender Sensitivity Awareness Lecture and strategies that will culture GAD in the enterprise and enable gender responsiveness.</p>

PROJECT TITLE: Facilities Upgrading for Flour-Based Processing of Shan & Hazel's Fastfood

PROJECT BENEFICIARY: Shan & Hazel's Fastfood
Rizal Ext., Brgy. Central, Mati City, Davao Oriental
Tel Nos.: (087) 388-3653/0907-658-9744

COORDINATING AGENCY: DOST XI

PROJECT COORDINATOR: Ms. Sharon B. Mendoza
Provincial Director, Davao Oriental

Objectives:

General Objective: To establish a facility that is compliant to the requirements of food safety and good manufacturing practices. At the same time, the proposed project aims to increase the production capacity thereby increasing the production volume and improving the quality of the products produced.

Specific Objectives:

- To improve plant layout
- To upgrade existing production facilities through the acquisition of stainless steel noodle cutter, loaf cutter and deck gas oven
- To generate employment for the community

Expected Output:

- Enhanced production capacity
- Improved efficiency of the production system thereby reducing production costs for higher margin of profitability
- Improved quality of various products compliant to standards of food safety and GMP
- Increased production volume
- Increased sales of the business

S&T Intervention:

Below are the identified S&T Interventions:

Gaps/Issues/Concerns	Recommended S&T and Other Interventions
The existing layout of the processing area may cause cross-contamination. The layout does not consider good processes/production flow that will in turn improve productivity. Other productivity measures are not well in place.	- Consultancy on plant layout, GMP assessment and in-house training on GMP - Consultancy assistance on Manufacturing Productivity Extension (MPEX)

Gaps/Issues/Concerns	Recommended S&T and Other Interventions
<p>Present production capacity is low especially with the establishment of their own bakeshop. Equipment used also do not comply with Good Manufacturing Practices (GMP) as to material used.</p>	<p>- Upgrading of facilities that will enhance production capacity is needed. It is also vital that equipment used in the production are made of stainless and food grade materials in compliance with standards of GMP. Hence, acquisition of equipment such as:</p> <ul style="list-style-type: none"> • Deck Oven • Noodle Cutter • Loaf Cutter <p>With the acquisition of new facilities, the enterprise is expected to double its production capacity and reduced its production cost, e.g. the deck system of the proposed oven is highly efficient, reducing baking time by 20-25%, at a much superior product quality produced.</p>
<p>Electrical connections are not properly installed. Existing setup of electrical wirings can be improved.</p>	<p>- Provide energy audit consultancy to be able to identify areas and means to decrease the company's cost of production.</p>
<p>Per DOST-GAD assessment, the enterprise operation and processes has promising GAD prospects (conditional pass, with a score of 7.03).</p>	<p>- Provide Gender Sensitivity Awareness Lecture and strategies that will culture GAD in the enterprise and enable gender responsiveness.</p>

PROJECT TITLE: Upgrading of Metal Working Facilities for Mundo Machine and Welding Shop

PROJECT BENEFICIARY: Mundo Machine and Welding Shop
Purok 7, Poblacion, Nabunturan, Compostela Valley
Province

COORDINATING AGENCY: DOST XI

PROJECT COORDINATOR: Kenneth D. Barroga
OIC -PSTD, PSTC-Compostela Valley Province

Objectives:

General

- To upgrade the capability of MMWS to manufacture farm machineries;
- To upgrade the quality and productivity to serve its customers.

Specific

- To establish the capability of MMWs to manufacture farm implements and upgrade the productivity to service the mining industry in the province;
- To acquire additional machinery and equipment such as such as milling machine, lathe machine and surface grinder;
- To cater required farm machineries;
- To efficiently serve the industries badly damaged by typhoon Pablo such as the agricultural industry and the mining industry in the province;
- To improve the energy efficiency through Energy Audit.

Expected Output:

- Acquired new equipment which contributes to production line;
- Increased volume of products;
- Increased of productivity;
- Increased of annual sales;
- Increased number of clients as well as employees;
- Enhanced workers' capability.

S&T Interventions:

- Provision of equipment such as milling machine, lathe machine and surface grinder;
- Improvement of productivity and efficiency of production processes;
- Provision of technical assistance and consultancy services by way of Manufacturing Productivity Extension (MPEX), Energy Audit and other productivity management tools.

PROJECT TITLE: Capability Upgrading of Fingerprints in Support of SMEs:
Packaging and Labeling

PROJECT BENEFICIARY: FCL METALS AND SERVICES
E. Tirol Poblacion, Nabunturan, Compostela Valley

COORDINATING AGENCY: DOST XI

PROJECT COORDINATOR: MR. KENNETH D. BARROGA
OIC-Provincial Director, PSTC-Compostella Valley

Objectives:

- To acquire lathe machines that could add value to the time efficiency of their work order enabling the company to accommodate more work order in a lesser amount of time and expenses;
- To serve the industries badly damaged by typhoon Pablo such as the construction, agriculture and mining industries in the province;
- To improve the energy efficiency through energy audit;
- To improve and increase awareness and reduce probability of accidents through training on occupational hazard;
- To improve the efficiency of operations including management through MPEX consultancy;
- To improve the efficient movement of workflow and also safe movement of personnel through effective plant layout.

Expected Output:

- Acquired new equipment which contributes to production line;
- Increased volume of products;
- Decreased of rejects and rework;
- Increased productivity;
- Increased of annual sales income;
- Increased number of clients;
- Increased number of employees;
- Successfully conducted MPEX and Energy Audit Consultancy

S&T Intervention:

Below are the identified S&T Interventions:

TYPE OF OPERATION	CURRENT PRACTICE	PROPOSED METHOD USING THE EQUIPMENT	IMPACT
Used in the machining process	Outsourced Processing time: 1-5 days depending on the availability of lathe machine or other machine shops Quality of product: out of control of the proponent	Use of Lathe Machine	Reduced cost, improved product quality Processing time: 3 hours Saved time: 4 days and 21 hours Quality of work: Controllable
Not applicable	The existing plant layout was damaged by the typhoon	Plant Layout	Efficient movement of workflow and also safe movement of personnel
Consultancy	FCL Metal upgraded its energy capacity as they increase the energy requirement and machineries. There has been no intervention in determining the energy usage	Energy Audit	Reduced cost of energy, safeguard the equipment and reduce risk of fire and related hazards
	The company is currently repairing their shop due to typhoon	MPEX	Improved efficiency of operations including management
Training and Consultancy	Minimal compliance to occupational safety of workers	Training on Occupational Safety and Hazard	Improved and increased awareness and reduced probability of accidents

PROJECT TITLE: Upgrading for Soybeans, Wheat and Corn Processing

PROJECT BENEFICIARY: JR-GINS Veg Foods Processing
Km. 70 1665 Brgy. Sinawilan, Matanao, Davao del Sur

COORDINATING AGENCY: DOST XI

PROJECT COORDINATOR: Vicente S. Dagangon
PSTD, PSTC- Davao del Sur

Objectives:

General

- To mechanize the production process that will enable the business to increase production efficiency in compliance with the food safety standards.

Specific

- To avail financial assistance of the Department of Science and Technology through its Small Enterprise Technology Upgrading Program (SETUP) for the acquisition of one (1) unit bread slicer, one (1) unit bakery mixer, two (2) units stainless working tables, one (1) unit proofing cabinet/cooling rack, one (1) unit machine grinder for soybeans, one (1) unit soya milk extractor, one (1) unit soybeans peeler machine and one (1) unit 12 plates oven chamber;
- To improve the existing production area in compliance to Food Safety Standards, and Good Manufacturing Practices (GMP) to obtain License to operate (LTO) from Food and Drug Administration (FDA).

Expected Output:

- Enhanced quality of products using equipment compliant to food safety standards;
- Increased production volume due to higher percentage recovery of raw materials;
- Improved production area compliant to food safety standards and good manufacturing processes;
- Increased in sales.

S&T Interventions:

- Provision of equipment such as bread slicer, bakery mixer, stainless steel working tables, proofing cabinet/cooling rack, grinder machine for soybeans, soya milk extractor, soybeans peeler machine, and oven chamber.
- Improvement of productivity and efficiency of production processes;
- Provision of technical assistance and consultancy services by way of Food Safety Consultancy and Training, Manufacturing Productivity Extension (MPEX), Energy Audit and other productivity management tools.

PROJECT TITLE: Upgrading of Production Process of Physics Learning and Instructional Equipment Manufacturing

PROJECT BENEFICIARY: LEADTECH Training Center Inc.,
Purok 4, Santa Maria, Nabunturan, Compostela Valley
Province

COORDINATING AGENCY: DOST XI

PROJECT COORDINATOR: Kenneth D. Barroga
OIC -PSTD, PSTC-Compostela Valley Province

Objectives:

General

- To develop and upgrade the production process of Physics Learning and Instructional Equipment;
- To improve the output quality and increase output quantity of production;
- To provide local access to quality Physics Laboratory Equipment in the Philippines;
- To upgrade packaging and labeling of the equipment as well as to serve packaging and labeling service to the manufacturing industry in Compostela Valley Province;
- To improve the energy efficiency through energy audit;
- To improve the efficiency of operations including management through MPEX Consultancy;
- To improve the efficient movement of workflow and also safe movement of personnel through effective plant layout.

Expected Output:

- Acquired new equipment which contributes to production line;
- Increased volume of products;
- Decreased rejects and rework;
- Increased of productivity;
- Increased of annual sales;
- Increased number of clients as well as employees;
- Successfully conducted MPEX and Energy Audit Consultancy;
- Production of locally manufactured Physics learning and instructional equipment;
- Contribute to the educational development of our country.
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S&T Interventions:

- Provision of equipment used for Inside Circuit Designing, Drill Press, Mini Band saw, Miter saw, Cut-off saw, Air Compressor, Bench Grinder, Router, Cross Vise 5", Equipment for Packaging and Labeling and Programming, Modeling and Face Plate Design;
- Improvement of productivity and efficiency of production processes;
- Provision of technical assistance and consultancy services by way of Manufacturing Productivity Extension (MPEX), Energy Audit and other productivity management tools.

PROJECT TITLE: Upgrading of Facilities for Blacksmith Shop

PROJECT BENEFICIARY: RBS Blacksmith Shop
Livestock, Sta. Ana, Tres de Mayo, Digos City, Davao del Sur

COORDINATING AGENCY: DOST XI

PROJECT COORDINATOR: Mr. Vicente S. Dagangon
PSTD, PSTC- Davao del Sur

Objectives:

General

- To enhance the productivity through advanced technology.

Specific

- To access technical and financial assistance from Department of Science and Technology through its Small Enterprise Technology Upgrading Program (SETUP) for the acquisition of two (2) units movable furnace, two (2) units of anvil, one (1) unit welding machine, one (1) unit power craft drill press machine and one (1) set bench grinder;
- To cope up with the purchase orders of their clients;
- To upgrade the quality of products being manufactured;
- To develop entrepreneurial skills of personnel involved in the business and integrate gender and development in production.

Expected Output:

- Reduced processing time for fabrication /manufacturing of farm and butchery tools;
- Improved quality of products;
- Additional clients are catered due to increased production capacity;
- Increased employment

S&T Interventions:

- Provision of equipment such as movable furnace, anvil, welding machine, power craft drill press and bench grinder;
- Improvement of productivity and efficiency of production processes;
- Provision of technical assistance and consultancy services by Manufacturing Productivity Extension (MPEX), Energy Audit and other productivity management tools.

PROJECT TITLE: Productivity Enhancement for the Production of Charcoal Briquettes

PROJECT BENEFICIARY: EFAB Feeds Processing
Purok 1, Brgy. Maduao, Panabo City

COORDINATING AGENCY: DOST XI

PROJECT COORDINATOR: ENGR. ROGELIO B. CORCINO
Provincial Director, PSTC-Davao del Norte

Objectives:

Generally, the proposed project aims to increase the productivity of the enterprise through upgrading of the technology used in the production process.

Specifically, the project aims to:

- To acquire mechanical dryer with three chambers, a mixer, extruder and pelletizer
- To make use of the waste material of charcoal granulating plant which is coco charcoal fine as a primary direct material for the production of charcoal briquettes
- To increase the profitability of the enterprise
- To provide employment in the vicinity.

Expected Output:

- Increased volume of production by 125% and efficiency in drying
- Improved quality of products that shall result to less breakage
- Removed drying process as the bottleneck in the production
- Increased number of clients

S&T Intervention:

Below are the identified S&T Interventions:

TYPE OF OPERATION	CURRENT PRACTICE	PROPOSED METHOD USING THE EQUIPMENT	IMPACT
Drying	The enterprise uses sun-drying so during rainy season, the operation also has to stop. Aside from that, drying is the bottleneck of the production process since it will take them one day and half before the charcoal briquettes will be fully dried and ready for selling/delivery.	Provision of Mechanical Dryer (3 chambers)	The use of a mechanical dryer will hasten the drying process since the curing time will be shortened to eight hours. The mechanical dryers with capacity of 600 kilograms per chamber will increase the productivity of the enterprise so drying will no longer be the bottleneck of the production.
Mixing	Mixing of the direct materials is done manually by the	Provision of Mixing Machine	The use a mixer will increase the productivity of the

	<p>production workers. This process is very time consuming and labor intensive since workers should always make it sure that the direct materials are mix thoroughly since efficient mixing is very essential to obtain a strong charcoal briquettes</p>		<p>enterprise. The mixer has a capacity of sixty (60) kilograms per batch and mixing process will be for twenty (20) minutes.</p>
<p>Pelletizing/Molding</p>	<p>Currently, the enterprise is using a second pass extruder machine which serves as the molder but the capacity of this equipment is only 400-600 kilograms per day and is somehow costly when it comes to energy consumption</p>	<p>Provision of Extruder and Pelletizer</p>	<p>The use of extruder and pelletizer machine will make the production process be more effective and efficient since the capacity of the equipment is 1.5 tons every eight (8) hours.</p>

PROJECT TITLE: Upgrading of Facilities for Liniment Production

PROJECT BENEFICIARY: NICE MIRACLE OIL
Blk.13, Lot 9, Villa Cacacho, Mankilam, Tagum City

COORDINATING AGENCY: DOST XI

PROJECT COORDINATOR: ENGR. ROGELIO B. CORCINO
Provincial Director, PSTC-Davao del Norte

Objectives:

Generally, the proposed project aims to mechanize the production process of Nice Miracle Oil.

Specifically, the project aims to:

- To avail financial assistance from DOST-SETUP for the acquisition of liquid filling machine, stainless tanks, grinding machine, and slicing machine;
- To get license to operate and accreditation from Food and Drug Administration (FDA) to be able to sustain the marketability of the product;
- To provide continuous source of income to the business proprietor and the workforce of the enterprise; and
- To improve the enterprises' production process and productivity so that it will become a sustainable business.

Expected Output:

- 100% increased in productivity
- Improved quality of the products
- Increased number of clients
- 100% increased in volume production
- 100% increased in sales

S&T Intervention:

Below are the identified S&T Interventions:

TYPE OF OPERATION	CURRENT PRACTICE	PROPOSED METHOD USING THE EQUIPMENT	IMPACT
Slicing	Slicing and grinding all done manually	Provision of slicing machine	With the aid of a slicing machine, the work will become easier for the production workers
Grinding		Provision of grinding machine	Grinding machine or grinder will make the raw materials more accurate as to shape and dimension
Soaking	The enterprise is utilizing a plastic tank is prone to deterioration	Provision of Stainless Tank	Stainless tanks are more durable compared to a plastic tank and it can last a lifetime
Filling	This process is also done manually which means that just like the other processes, this is also very time consuming and labor-intensive, this process is also prone to leakage	Provision of filling machine	With a filling machine available in the production area, filling the bottles with the liniment will become effective and efficient since lesser time will be consumed and work will become easier. Leakage will also be minimized if not totally eliminated.

PROJECT TITLE: Technology Upgrading of Peanut Butter Production of Totsie's Sebastian Foods Corp

PROJECT BENEFICIARY: Totsie's Sebastian Foods Corp
New Daliaon, Toril, Davao City

COORDINATING AGENCY: DOST XI

PROJECT COORDINATOR: ENGR. JUDY DONNA DA NUEVA ECIJA
Provincial Director, PSTC-Davao City

Objectives:

- To provide high quality peanut butter in the market.
- To increase production of peanut butter by 30%.
- To prevent spoilage of products through appropriate quality control procedures and packaging.
- To upgrade its current technology and optimize its production capacity.
- To enhance the quality of products that is at par with the known commercially available products in the market.
- To expand distribution of products outside of Davao City by marketing the products to the nearby Cities, towns and other Regions.
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Expected Output:

- 30% increase of the production capacity after the 1st year of intervention and 10% on the succeeding years.
- 30% increase in income after the 1st year of intervention and 10% on the succeeding years
- 10% increase in productivity
- Improved product quality and food safety
- Improved production facility in compliance with the food safety standards

S&T Intervention:

Below are the identified S&T Interventions:

DOST Intervention	Benefits Derived
(1) Peanut Roaster	Higher capacity of roasting that will boost production volume.
(1) Cooker Mixer	Minimizes human handling thus reducing possible contamination of the products. It will ensure homogeneity in the mixing procedure and speeds up the operation through elimination of manual mixing of ingredients.

DOST Intervention	Benefits Derived
(1) Colloid Mill	Reduces energy consumption and will produce a more refined output with a bigger milling capacity.
(1) Filling Machine	Will lessen human contact, reduces filling time and hastening of the filling process.
(1) Packing Materials	Less waiting time before packing and would result to higher shelf life due to hot filling.
Trainings	<p>GMP Training</p> <p><i>Good Manufacturing Practices is a quality assurance system aimed at ensuring that products are consistently manufactured, packed, repacked or held to quality appropriate for the intended use. It is thus concerned with both manufacturing and quality control.</i></p> <p>Occupational Safety and Health</p> <p><i>Cross-disciplinary area concerned with protecting the safety, health and welfare of people engaged in work or employment. (http://en.wikipedia.org/wiki/Occupational_safety_and_health)</i></p>
<p>Other Technical Interventions</p> <ul style="list-style-type: none"> • Manufacturing Productivity Extension (MPEX) • Energy Audit • Cleaner Production Assessment 	Optimize use of resources and waste minimization.

PROJECT TITLE: TECHNOLOGY UPGRADING OF RJLO AUTO REPAIR SERVICES & MACHINE SHOP

PROJECT BENEFICIARY: RJLO Auto Repair Shop and Machine Shop
Barangay 20-B, Dacudao Ave., Agdao, Davao City

COORDINATING AGENCY: DOST XI

PROJECT COORDINATOR: ENGR. JUDY DONNA DA NUEVA ECIJA
Provincial Director, PSTC-Davao City

Objectives:

- To be able to render standard machining jobs like engine reconditioning services to the private and walk-in customers and to uphold the business' operation and ensure accuracy along with service provisions

Expected Output:

Through the acquisition of additional equipment, the business will be able to provide more services to the customers. Aside from the existing services which are listed above, additional services will be added to the list such as honing, reboring (through the machines to be acquired) and thus manpower and technological interventions will be utilized.

a. Percentage Increase in revenue

It is shown in the below the increase in sales which is based on the revenue of the current year and the revenue in the first year with the intervention of the equipment in the operation.

Percentage Increase in Revenue	
Actual Sales without Machine (Overhauling)	1, 482,000.00
Actual Sales with Machine Intervention (Overhauling)	5,103,667.20
Difference	3,621,667.20
Percentage Increase in Revenue	71%

b. Increase in Volume and Percentage in Productivity

It is illustrated in below the increase in productivity with the intervention of the machines as compared to productivity without the help of the technologies.

Increase in Volume and Percentage Increase in Productivity	
Actual Services without Machine (Overhauling)	180
Actual Services with Machine Intervention (Overhauling)	336
Increase in Volume	156
Percentage in Productivity	87%

S&T Intervention:

Below are the identified S&T Interventions:

DOST Intervention	Functions of the Equipment	Benefits Derived
Reboring Machine	Rebore or oversize engine cylinder wall or oversize sleeve. Cylinder walls can become very worn or damaged from severe use.	The four (4) requested equipment are necessary to serve their customers in a short period of time. Time efficiency and increased profit due to the required machining jobs will be done in-house. Turnover time of the machining jobs is bounded to only three days. While, the cost spent for outsourcing can now become additional income to the project proponent.
Honing Machine	Smoothen engine cylinder wall after reboring. Inside surface of cylinder barrel is honed to a controlled amount of smoothness. Smooth enough to hold oil film and to minimize friction and wear.	
Valve Refacer	Reface valve face to standard/specified angle. Valve face should be reconditioned to give it a smooth, uniform appearance. The process of reconditioning a valve face is commonly called valve grinding or valve refacing.	
Valve Seat Grinder	Grind valve seat to standard/specified angle. Due to the rapid opening and closing of the valves will batter the valve seats. Eventually the seats will become distorted, permitting gases to leak past a valve head even when it is closed.	