

## PROJECT PROPOSAL

| <b>I. PROJECT PROFILE</b>   |   |
|-----------------------------|---|
| A. Title of the Project     | Establishment of Wastewater Treatment Facility for RBDO Plant in Romblon  |
| B. Proponent                | Sta. Maria Coconut Farmers and Processing Association (SCFPA)   |
| C. Project Cooperators      | LGU Sta. Maria, DOLE, RSU, PCA  |
| D. Project Duration         | 1 year for project implementation<br>1 year monitoring of outcomes  |
| E. Total Project Cost       | <div style="display: flex; justify-content: space-between;"> <div> DOST-MIMAROPA:<br/> LGU-Sta. Maria:<br/> SCFPA: </div> <div> <b>PhP 8,613,888.40</b><br/> PhP 3,063,888.40<br/> PhP 3,000,000.00<br/> PhP 2,550,000.00 </div> </div>   |
| <b>II. PROJECT PROPOSAL</b> |   |
| A. Rationale                | <p>In 2020 a coconut processing plant was established at Sta Maria, Romblon to produce cooking oil for household and industrial use. The project aimed to help the coconut farmers through making copra prices stable and reasonable throughout the year. Similarly, the project will substitute the imported cooking oil coming from Lucena and the mainland Luzon for the Tablas Island.</p> <p>The first phase of the project covered funds for the purchase of milling equipment such as expeller, filter press and boiler needed to produce crude coconut oil (CNO). On this phase counterpart funds from the LGU for the site and a building were solicited.</p> <p>The second phase of the project completed the whole coconut production process from milling to produce CNO to refining to produce refined, bleached, deodorized oil (RBDO). Included in this phase were the provision of the following equipment: neutralizing, bleaching, deodorizing tanks, and leaf filter equipment. The facility was also equipped with generator set for back-up power source in the production. It is also in this phase that all equipment will be commissioned to realize the expected 1T/day output. In this phase also, counterpart funds from DOLE were solicited for the purchase of raw materials (copra) and some chemicals.</p> <p>For this 3rd and final phase of the project, establishment of wastewater treatment facility to comply with the regulatory requirements of DENR would be done. Conduct of training, commissioning/debugging, consultancy and project monitoring</p> |

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|                        | would also be included in this phase to ensure project sustainability.  |
| B. Project Description | <p>This project is a 3-year undertaking to establish an RBDO production plant in Sta. Maria, Romblon. Procurement of equipment for milling and refining sections was already done during the first and second phase of the project. To complete the project, a wastewater treatment facility would be acquired during this 3rd phase of project implementation.</p> <p>The RBDO plant processes copra and converts it into cooking oil. The initial market is Romblon which currently imports cooking oil from Batangas or Lucena but sends out its copra to these places. The plant's production level is at least 1,000 liters of cooking oil per day at a 6-day workweek. Direct beneficiaries of the project are the at 5 workers directly employed in production and at least 1,000 farmers engaged in copra production as raw material for the plant. Indirect beneficiaries are the different service sectors like transport, retail and marketing as well as the consumers who benefit from a lower price of cooking oil.</p> |
| C. Objectives          | <p>The project seeks to establish an RBDO production facility for Romblon.</p> <p>This 2021, in its third year of implementation, it specifically seeks to:</p> <ol style="list-style-type: none"> <li>1. equip the plant with wastewater treatment facility to reduce pollutants to a level nature can handle;</li> <li>2. provide necessary trainings to the workers of the plant on the operation and maintenance of the wastewater treatment facility; and</li> <li>3. enable the plant to acquire licenses and certificates for compliance to environmental conservation protocols.</li> </ol>   |
| D. Methodology         | <p>During this phase, procurement of proposed interventions would be done by the DOST-MIMAROPA in close coordination with the PSTC-Romblon. The would be tapped to provide consultancy and technical assistance during design and layouting of wastewater treatment facility. As soon as the laboratory and wastewater treatment facility are in place, operation will be maximized to reach its optimum capacity. Target production level of 1,000 liters of cooking oil per day at a 6-day workweek will be established as a quota. This will be based on a profitable business model so that sustainability of the project will be assured.</p> <p>Distribution to wholesalers, retailers and bulk buyers would be coursed through the proponent and other big cooperatives in the province like Saint Vincent Ferrer Parish MPC and KADBAYAN MPC. They would sell wholesale to its outlets to give reasonable price adjustments for small stores. Other distribution channels like</p>  |

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|                  | <p>roving stores would also be explored. Meanwhile, markets outside the province would also be targeted. Distribution would be done weekly in bulk. The association may also opt for weekly terms on deliveries if not on cash basis. Moreover, Romblon is the second coconut producer in the region and raw material would not be a problem. It has about 5.2 million bearing coconut trees and produces about 160 tons of copra per day. Hence, as long as raw materials are available which is sure enough, the plant would continue in production.</p>  |
| E. Business Plan | <p>With the projected stability in copra and cooking oil prices, the business is sure to profit and many coconut farmers would benefit from it. Compared to products coming in from Lucena or Batangas, the locally produced oil would be cheaper but comparable in quality. Compared against palm and other vegetable oils on the other hand, coco nut oil fares better since it is far more superior in terms of its organic properties and is preferred by food processing enterprises. These advantages of the product would be highlighted in the marketing strategies of the project.</p> <p>Copra would be bought at a standardized price. The association, however, would place a premium price for copra that is sun dried. Pricing for the product would be relatively low as raw materials are locally sourced and rate of labor is low in the province. To build following and brand loyalty, the association would ensure the best quality and may also opt to even lower the prices as much as possible. Promotion on the other hand would be by word of mouth, advertisements, press releases and market presence. Moreover, the product shall be promoted during the Annual General Assembly of cooperatives where thousands of coop members converge.</p> <p>The market for the business is the whole province. The 68,000 households consume at least 1L cooking oil per month. The plant could only supply 19% of the total demand at a rate of 13,000L capacity per month. This is the rich market that the plant could enjoy. Another potential market for processing food shortenings such as lard and butter would also be explored.</p> |

## F. Schedule of Activities

Project implementation would be immediately done after release of funds. The following timetable would be followed:

| Major/Sub-Activity   | Anticipated Results  | Responsible Person(s)   | Schedule of Activities |    |        |     |     |     | Remarks                       |
|--|--|---|------------------------|----|--------|-----|-----|-----|-------------------------------|
|  |  |   | Y1                     | Y2 | Year 3 |     |     |     |                               |
|  |  |   |                        |    | Q 1    | Q 2 | Q 3 | Q 4 |                               |
| Project planning and organization                                      | Strategic plan, operation manual, organizational setup                   | Project leader, proponent and commissioned experts and other stakeholders | x                      |    |        |     |     |     | Stakeholders invited on board |
| Construction of building   | GMP-compliant production area for RBDO production                        | Project leader, proponent, commissioned expert                            | x                      | x  |        |     |     |     | Proponent notified            |
| Farmer and personnel training  | Skilled plant personnel. Potential farmer raw material suppliers trained | Commissioned experts, PCA personnel                                       | x                      | x  |        |     |     |     | PCA and DOST to be invited    |
| Establishment Buying centers   | At least 4 buying centers established                                    | Project leader, bookkeeper  | x                      | x  |        |     |     |     | Cooperative agreements forged |
| Raw material procurement   | Quality raw material procured<br>Purchase agreements made                | Bookkeeper, buying centers  |                        | x  |        |     |     |     | Materials assured             |
| Equipment delivery, installation and commissioning                     | Equipment installed and operated.  | Supplier, commissioned experts  |                        | x  |        |     |     |     |                               |
| Lab equipment delivery installation and commissioning                  | Lab equipment installed and operated.                                    | Supplier, commissioned experts  |                        |    |        | x   |     |     |                               |
| wastewater facility installation and commissioning                     | Wastewater treatment facility installed and operated.                    | Supplier, commissioned experts  |                        |    |        | x   |     |     | Stakeholders invited on board |
| Training on the use of lab equipment and wastewater treatment facility | Improved capability of plant workers                                     | Supplier, commissioned experts  |                        |    |        | x   | x   |     | Proponent notified            |
| Optimum Production, R&D  | Production schedule and targets met                                      | Commissioned expert, plant personnel                                      |                        | x  | x      | x   | x   | x   |                               |

## G. Budget Breakdown

The following line-item-budget would be followed for the project:

| ITEM  | DOST-GIA            | LGU-Sta. Maria      | Sta. Maria Coconut Farmers Association |
|---|---------------------|---------------------|--|
| Personnel Services<br>Science Aide, P16,568.40 x 12 months  | 198,820.80          |                     |  |
| MOOE  |                     |                     |  |
| Travelling Expenses – local   | 80,000.00           |                     |  |
| Training Expenses   |                     |                     |  |
| Travelling  | 283,000.00          |                     |  |
| Supplies and Materials  | 25,000.00           |                     |  |
| Other Professional Services   | 30,000.00           |                     |  |
| Printing  | 1,000.00            |                     |  |
| Representation  | 20,000.00           |                     |  |
| Rents-Motor Vehicles  | 70,000.00           |                     |  |
| Supplies and Materials  |                     |                     |  |
| Office Supplies   | 10,000.00           |                     |  |
| Fuel  | 31,800.00           |                     |  |
| Packaging   | 50,000.00           |                     |  |
| Communication Expenses  |                     |                     |  |
| Postage and Courier   | 11,700.00           |                     |  |
| Telephone Expenses – mobile   | 31,200.00           |                     |  |
| Internet Subscription   | 102,000.00          |                     |  |
| Representation Expenses   | 10,000.00           |                     |  |
| Capital Outlay  |                     |                     |  |
| 1 set Wastewater treatment facility for RBDO plant / design capacity: 2cubic meter per day / with the following influent characteristics: BOD <sub>5</sub> : 1,000 – 4,000 mg/L ; COD: 4,000 – 8,000 mg/L ; TSS 250 – 500 mg/L ; pH: 4.5 – 5.0 ; Ammonia (NH <sub>3</sub> -N): TBD ; Nitrates (NO <sub>3</sub> -N): TBD ; Phosphate (PO <sub>4</sub> -P): TBD ; Oil and Grease (O&G): TBD / with screening and pH adjustment processes / with cooling system and equalization tank/buffer tank / with oil grease removal process / with chemical precipitation process / with UASB or anaerobic process / with membrane bioreactor activated sludge (if not high organics) / performance of the treatment facility should meet the DENR effluent standards (DAO 2016-08) at all times / to include delivery, installation, commissioning, and training onsite (RBDO Plant at Sta. Maria, Romblon) | 2,109,367.60        |                     |  |
| Land and Operating Capital  |                     |                     | 2,500,000.00                           |
| Building  |                     | 3,000,000.00        |  |
| ECC Registration  |                     |                     | 50,000.00                              |
| <b>Total</b>  | <b>3,063,888.40</b> | <b>3,000,000.00</b> | <b>2,550,000.00</b>                    |

## H. Project Management

The project would be implemented by the Sta. Maria Coconut Farmers Association with close supervision of the DOST-PSTC Romblon. The PSTC would coordinate with the regional office in the purchase of equipment, training and in other aspects of project implementation. The PSTC staff to be hired would be deployed



oversee proper implementation of the project especially during the installation and operation of the proposed equipment.

# I. Expected Output (for the whole project)

| Objectives   | Outputs  |
|--|--|
| Equip the processing plant with the appropriate tools and equipment for RBDO production  | - milling and refinery section running at rated capacity   |
| Equip the processing plant with appropriate laboratory facility for FFA analysis   | - assured quality cooking oil  |
| Equip the processing plant with wastewater treatment facility  | - assured compliance with environmental conservation protocols   |
| Run the plant as a business venture with members of the association as workers and produce at least 1,000 liters of cooking oil per day  | - plant Operations Manual<br>- generated direct employment to at least 5 workers in the plant and at least 1,000 indirect workers through member-farmers who will supply the needed raw materials.<br>- produced 1,000li of RBDO per day |
| Regulate and standardize price of copra through stable market for copra;   | - standardized price of copra to at least PhP25/kilo through stable market for copra   |
| Increase income of coconut farmers and copra sellers to at least 5%  | - increased income of coconut farmers and copra sellers to at least 5%   |
| Benefit at least 1,000 member-farmers who will supply the needed raw materials by providing them with a stable market for their copra  | - at least 4 buying centers established<br>- at least 5 purchase agreements entered into   |
| Coordination with the academe as source of local experts and in the conduct of engineering research and development for other coconut products, byproducts, processes and processing equipment | - availability of local experts during equipment installation and commissioning, new equipment, processes or products to support coconut industry development  |
| Inclusive growth for the province  | - generate economic activity within the province by import substitution of an important commodity<br>- create a value chain for the coconut industry   |

# J. Monitoring and Evaluation

Project monitoring would be done by the DOST PSTC-Romblon and other project stakeholders. Monitoring would ensure the correct disbursement of funds; correct scheduling of activities, and the successful implementation of the project. Project economics would be monitored to ensure viability of business. Monitoring reports including liquidation of funds would be submitted to DOST-MIMAROPA.

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