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TECHNOLOGY NEEDS ASSESSMENT (TNA) REPORT

COMPANY:	LGU-SAN AGUSTIN
ADDRESS:	BRGY. POBLACION, SAN AGUSTIN, ROMBLON

SCOPE OF ASSESSMENT

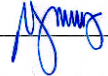
- A. Strategic Directions
 - a. Vision and Mission
 - b. Goals and Objectives
 - c. Strategic Alliances
- B. Management Aspects
- C. Technical Aspects
- D. Marketing Aspects
- E. Financial Aspects

SUMMARY OF ASSESSMENT

BACKGROUND:

The main fishing grounds in the municipality are the open sea surrounding the coastal town and Carmen Bay which spanned through the barangays of Carmen, Sugod, and Mahabang Baybay. Some of the economically important marine species that could be found within the municipality's waters include the locally known bisugo (threadfin beam), dugso (emperor fish), maya-maya (red snapper), malasugi (sail fish or blue marlin), lapu-lapu (grouper), tanigue (spanish mackerel), yellowfin, blue marlin, galong-gong (round scad), tulingan (frigate tuna), magudlong or matambaka (big-eyed scad), and pulang buntot (red-tailed scad). As of 2022, there were 2,038 registered fishermen with a total of 800 fishing boats of which 401 are motorized while only 399 are non-motorized. In Barangay Mahabang Baybay alone, there are six existing large fishing boats, locally known pangulong which cater to up to five tons of fish catch, especially during fishing season. The total fish catch of the municipality from both marginal and commercial fisherfolks in 2022 reached 967.8 metric tons with a value of PhP79.8 million. Ironically, fisherfolks in San Agustin opt to sell their catch to the Lucena market in Quezon Province. This is because most of the fish traders in Romblon dictate lower prices for the fish catch. Moreover, these fish traders do not have huge cold storage facilities that are enough to preserve the bulk volume of fish from the fisherfolks.

In terms of transportation, fish products require huge amounts of ice to facilitate effective preservation. More ice means lower temperature and if the temperature is decreased, the metabolic activity in the fish is reduced or stopped resulting in extended shelf life. Proper preservation of fish is obtained by covering the fish uniformly with layers of ice in the fish containers before it is transported to the target markets in neighboring municipalities. The longer

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Name of TNA Team Leader
Attested by <u>JERRY B. MERCADO</u> Signature _____ Date _____
ARD

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the transport period, the higher the requirement of ice to ensure the fish is well preserved during transport. Since there is no existing ice plant and cold storage facility in the municipality, fisherfolks rely on small-scale ice producers like grocery stores and private individuals. This causes high expenses for the fisherfolks and yields poor results in preservation as the ice produced by small-scale ice makers melts faster.

METHODOLOGY

Once the project has been approved and the funding has been allocated, the DOST-MIMAROPA, with the help of the PSTO-ROMBLON, would facilitate the purchase of necessary equipment for the ice plant. While the procurement process as well as the installation and trial run of the facility are ongoing, necessary baseline data would be established. Meanwhile, the LGU-San Agustin would ensure that the structural requirements (land and building), power requirement (3 phase), and water requirement meet the standards and demand of the proposed ice plant. For these technical requirements, a private consultant from the ice manufacturing industry will be tapped to provide technical direction to ensure that these requirements are met. The LGU-San Agustin would also assign at least 2 operators to regularly operate and maintain the facility. Training for these operators will be sourced from the supplier that would establish the ice plant and from a consultant from the ice manufacturing industry. The LGU- San Agustin would also be encouraged to craft a policy for the fisherfolks to source their ice needs from the plant to maximize its purpose. The Bureau of Fisheries and Aquatic Resources (BFAR) Romblon would also be tapped to provide training activities like proper marine fish operation, and appropriate fish post-harvest practices. Overall, the PSTO-Romblon will work closely with LGU-San Agustin to ensure the success of the project.

SUMMARY OF FINDINGS

1. Strategic Direction

a. Vision and mission

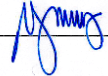
The mayor envisions its municipality to be acknowledged as the center of fishing industry in the entire province, capitalizing on its rich marine resources for market expansion and export potential, infrastructure development, innovative technology transfer, and environmental sustainability to increase fish production and its quality.

b. Plans and Objectives

The local government of San Agustin is determined to improve the income and productivity of the fisherfolks to contribute to the economic improvement of the municipality and the province as a whole.

c. Strategic alliances and current agreements

The local government is currently allied with all the national government agencies

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Attested by <u>JERRY B. MERCADO</u> ARD	Signature _____	Date _____

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and non-government agencies for planning and implementing its programs, projects, and activities.

2. Management Aspect

a. Human resources

The LGU has its own human resource division to handle and manage its human resources. It has its own human resource division to handle and manage its human resources. Necessary training activities will be provided to the ice plant operators and San Agustin fisherfolks. These training activities may include proper equipment operation and maintenance, basic occupational safety and health, proper marine fish operation, appropriate fish post-harvest practices and other related technology training opportunities.

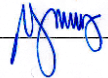
b. Purchasing

The DOST-Romblon would facilitate the purchase of necessary equipment for the ice plant as well as the installation and trial run of the facility. Meanwhile, the LGU would ensure the availability of the land and construction of the building, installation of the power requirement, and operators for the regular operation and maintenance.

c. Work environment

To date, there are six existing large fishing boats, locally known as *pangulong* which cater to up to five tons of fish catch, especially during fishing season. The total fish catch of the municipality from both marginal and commercial fisherfolks in 2022 reached 967.8 metric tons with a value of PhP79.8 million. Ironically, fisherfolks in San Agustin opt to sell their catch to the Lucena market in Quezon Province. This is because most of the fish traders in Romblon dictate lower prices for the fish catch. Moreover, these fish traders do not have huge cold storage facilities that are enough to preserve the bulk volume of fish from the fisherfolks.

In terms of transportation, fish products require huge amounts of ice to facilitate effective preservation. More ice means lower temperature and if the temperature is decreased, the metabolic activity in the fish is reduced or stopped resulting in extended shelf life. Proper preservation of fish is obtained by covering the fish uniformly with layers of ice in the fish containers before it is transported to the target markets in neighboring municipalities. The longer the transport period, the higher the requirement of ice to ensure the fish is well preserved during transport. Since there is no existing ice plant and cold storage facility in the

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municipality, fisherfolks rely on small-scale ice producers like grocery stores and private individuals. This causes high expenses for the fisherfolks and yields poor results in preservation as the ice produced by small-scale ice makers melts faster.

d. Business ethics and social responsibility

The LGU is committed to organizing and facilitating several civic activities to develop and improve the welfare of its people.

e. Occupational health and safety management

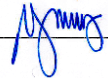
The DOST-Romblon would provide necessary training activities for ice plant operators, such as good manufacturing practices and for fisherfolks, such as appropriate fish post-harvest practices for the overall quality and safety of ice production. Moreover, safety measures will be practiced during the production based on the fisheries standards and the training opportunities provided.

3. Technical Aspect

a. Operational and outsourcing practices

Production system

The project aims to establish an Ice Plant at Marine Fish Landing Center along Carmen Bay of the municipality of San Agustin. The ice plant would have a 1-ton capacity complete with technical system and accessory requirements such as crusher, 15kg-capacity ice box, agitator, 30-tonner cooling tower, 7Hp compressor, 5-tonner condenser, 5-tonner evaporator, storage facility, 2-tonner water tank, and connections from a filtered water source. The facility would address the gaps brought by the absence of an ice plant in the municipality such as low productivity of fisherfolks, inefficient fish preservation, and high operating expenses in fish preservation during transport. The project will be handled by the LGU-San Agustin, but the beneficiaries would be the 2,038 registered fisherfolks in the municipality. The equipment will be the counterpart of the DOST-MIMAROPA while the land, building, and power (3-phase) and water requirement will be the counterpart of the LGU-San Agustin. Training on the proper ice plant operation and maintenance will be required from the supplier of the equipment.

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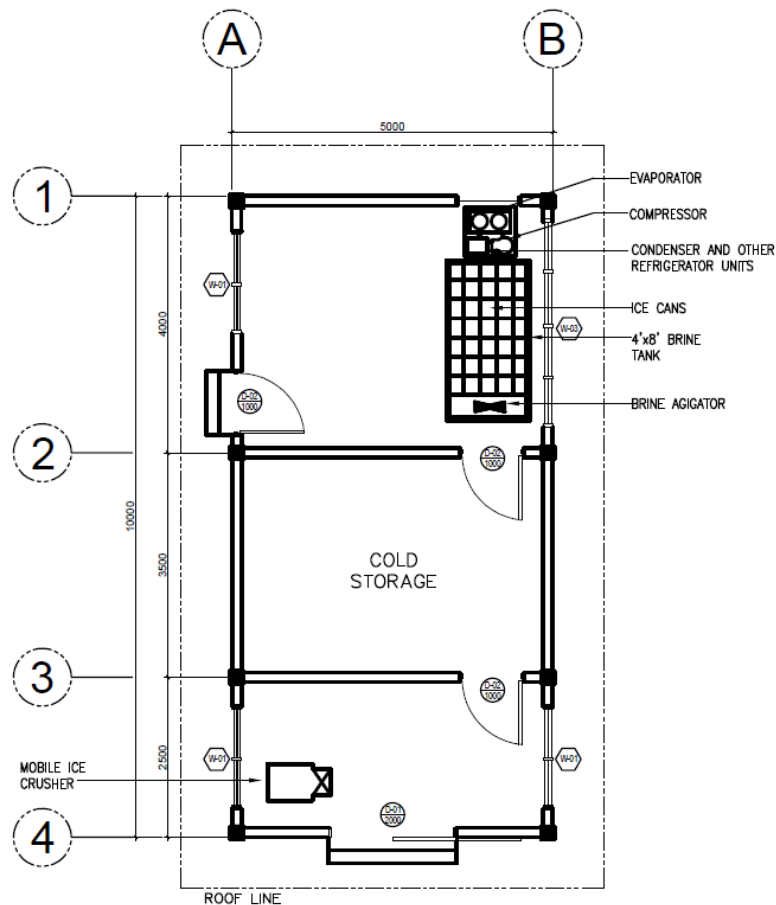
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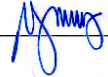
Production planning and control

To increase the income and productivity of the fisherfolks in the municipality, the LGU plans to establish an Ice Plant at Marine Fish Landing Center along Carmen Bay of the municipality. The ice plans to produce 1 ton supply of ice per production which will be sufficient to meet the need for the preservation of fish for storage and transport to target markets.

Production layout

This is the proposed layout of the ice plant to produce 1 ton of ice per production which will be sufficient to meet the need for the preservation of fish for storage and transport to target markets.



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Work Study/Improvement

The DOST-MIMAROPA through its Romblon Provincial Science and Technology Office (PSTO), LGU-San Agustin, and Bureau of Fisheries and Aquatic Resources (BFAR) Romblon would work together to maximize and sustain the project. The LGU-San Agustin would also be encouraged to craft a policy for the fisherfolks to source their ice needs from the plant to maximize its purpose and increase its potential for sustainability. Operators of the facility assigned by LGU San-Agustin will also be provided with training to appropriately operate and maintain the facility to prolong its service life. Minimal fees to cover operating and maintenance expenses would also be established to sustain the project. Project monitoring would be done by the LGU-San Agustin with close supervision of DOST Romblon. Monthly monitoring of the project implementation and expected output will be done by the assigned staff in DOST Romblon to ensure the sustainability and success of the project.

Equipment management and maintenance

Training on proper operation and maintenance of the system will be provided to assigned operators of LGU. This is to ensure that the service life of the technology would be maximized.

Quality assurance system

N/A

Outsourcing practices

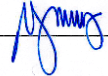
N/A

b. Product and process performance and improvement**Re-engineering and research development**

The LGU will engage in research and development to improve its fishing industry. This also will be done in partnership with the LGU-San Agustin, DOST-MIMAROPA, BFAR, and the academe.

Performance measures and results – Process

N/A

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Performance measures and results – Product

N/A

Procedures for continuous improvement

N/A

Product quality standards

N/A

c. Environmental management system**Waste management**

N/A

4. Marketing Aspect**a. Marketing plan**

N/A

b. Market outlets

N/A

c. Promotional activities

N/A

d. Market competitors

N/A

5. Finance**a. Cash flow and other related documents**

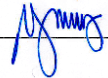
N/A

b. Source of capital/credit

N/A

c. Accounting system

N/A

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CONCLUSIONS:

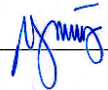
Based on the interview and ocular inspection, the TNA team concludes the following:

1. The proponent has an organized management that is willing to implement activities under DOST-MIMAROPA'S project on Establishment of Ice Plant at Marine Fish Landing Center in Carmen Bay. The proposed community could carry additional facilities, workforce movement, and new processes.
2. The proponent has good management skills. However, its fish industry and preservation of marine products practices still needs further improvement. Training activities and other interventions are needed.
3. The needed intervention applied under CEST would be the establishment of an ice plant with 1-ton capacity complete with technical system and accessory requirements at Marine Fish Landing Center in Carmen Bay for the fisherfolks in the municipality of San Agustin.

RECOMMENDATIONS:

The following are recommended by the TNA team:

1. DOST MIMAROPA should extend relevant interventions such as establishment of an ice plant with 1-ton capacity complete with technical system and accessory requirements at Marine Fish Landing Center in Carmen Bay for the fisherfolks in the municipality of San Agustin.
2. If needed the DOST MIMAROPA should assist the community in training and other necessary interventions.
3. The proponent should submit additional requirements to go with the proposal.

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