The Door to the Six Industry Clusters in the Bangsamoro Autonomous Region in Muslim Mindanao

An Investor's Guide to the Business Opportunities in the Six Clustered Industries in the BARMM
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Basic Profiles of the Six Clustered Industries in ARMM

The data presented below are basic information on the six industries in ARMM which was piloted for industry clustering. The six industries and their respective pilot provinces are as follows:
1. Abaca Industry Cluster – Lanao del Sur
2. Coconut Industry Cluster – Maguindanao
3. Coffee Industry Cluster – Sulu
4. Oil Palm Industry - Maguindanao
5. Rubber Industry Cluster – Basilan
6. Seaweed Industry Cluster – Tawi-Tawi

Abaca Industry

The abaca plant is indigenous to the Philippines whose warm, wet climate and volcanic soils are particularly suited to its cultivation. It has been grown in the Philippines for centuries, long before the Spanish occupation.

Today the total area planted with Abaca of the country is estimated at 172,934 hectares and is producing 72,734.71 metric tons of fiber annually (PhilFIDA Region 9, 2018).

Like many other provinces of Mindanao, Lanao del Sur is also ideal for planting high value crops like abaca because of its fertile agricultural lands and good climate condition. Abaca as an indigenous plant in the country has been part of the agricultural commodities in the province.

In terms of yield, the Autonomous Region in Muslim Mindanao has the highest volume for the past 10 years, averaging at around 718 kilograms per hectare annually. This was followed by Davao Region with 509 kilograms; Bicol region with 455 kilograms; and, Eastern Visayas with 358 kilograms.

Distribution of Area planted, Number of Farmers, Volume of Production per Province in ARMM (PhilFIDA Region 9, 2018)

<table>
<thead>
<tr>
<th>Provinicial/City Offices</th>
<th>Abaca Areas as of December 2018</th>
<th>Number of Farmers Involved</th>
<th>FIBER PRODUCTION (Kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Productive Area</td>
<td>Unproductive Area</td>
<td>Total</td>
</tr>
<tr>
<td>Basilan</td>
<td>47.5</td>
<td>34.2</td>
<td>81.7</td>
</tr>
<tr>
<td>Lanao del Sur</td>
<td>1,670.53</td>
<td>49.97</td>
<td>1,720.50</td>
</tr>
<tr>
<td>Maguindanao</td>
<td>287</td>
<td>17</td>
<td>304</td>
</tr>
<tr>
<td>Sulu</td>
<td>4,075.21</td>
<td>-</td>
<td>4,075.21</td>
</tr>
<tr>
<td>Tawi- Tawi</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>TOTAL ARMM</td>
<td>6,080.24</td>
<td>101.17</td>
<td>6181.41</td>
</tr>
</tbody>
</table>

Top Abaca Producing Regions in the Philippines (PhilFIDA Region 9, 2018)

<table>
<thead>
<tr>
<th>Region</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bicol Region</td>
<td>37.33%</td>
</tr>
<tr>
<td>Davao Region</td>
<td>16.72%</td>
</tr>
<tr>
<td>Eastern Visayas Region</td>
<td>12.50%</td>
</tr>
<tr>
<td>Caraga Region</td>
<td>10.08%</td>
</tr>
<tr>
<td>ARMM Region</td>
<td>10.07%</td>
</tr>
<tr>
<td>Value Chain</td>
<td>Name of Industry Player</td>
</tr>
<tr>
<td>--------------</td>
<td>-----------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Input Supplier</td>
<td>PhilFIDA Region 9</td>
</tr>
<tr>
<td>Producer</td>
<td>1. Pindolonan Abaca Farm Producer Cooperative: Pindolonan, Calanogas, Lanao del Sur</td>
</tr>
<tr>
<td></td>
<td>2. Bayanihan Farmers Services Cooperative: Pindolonan Piagapo, Lanao del Sur</td>
</tr>
<tr>
<td></td>
<td>3. Upper Itil Illana Bay Agro Marketing Cooperative: Upper Itil, Balabagan, Lanao del Sur</td>
</tr>
<tr>
<td></td>
<td>4. Romagondong Agri Aqua Marketing Cooperative: Romagondong, Marogong, Lanao del Sur</td>
</tr>
<tr>
<td></td>
<td>5. Palao Farmers Livelihood Producer Cooperative: Palao, Bayang, Lanao del Sur</td>
</tr>
<tr>
<td></td>
<td>7. Lumbac Salimbago Farmers Producer Cooperative: Tagoranao, Calanogas, Lanao del Sur</td>
</tr>
<tr>
<td></td>
<td>8. Panggaw Calalanuan Agri Marketing Cooperative: Calalanuan, Calanogas, Lanao del Sur</td>
</tr>
<tr>
<td></td>
<td>10. Tambac Community Association, Inc.: Tambac, Calanogas, Lanao del Sur</td>
</tr>
<tr>
<td></td>
<td>12. Mangodadatu Farmers Cooperative: Sitio Liang, Kapatagan, Lanao del Sur</td>
</tr>
<tr>
<td></td>
<td>15. Maguing Farmer Marketing Cooperative: Balintao, Maguing, Lanao del Sur</td>
</tr>
<tr>
<td></td>
<td>17. Philippine Islamic Social Progress Agency Inc.: Picotaan, Binidayan, Lanao del Sur</td>
</tr>
<tr>
<td></td>
<td>18. Fajron Jadeed Multi Purpose Cooperative: Pantar, Madamba, Lanao del Sur</td>
</tr>
<tr>
<td></td>
<td>19. Uyaan Proper Farmers Producer Cooperative: Uyaan Proper, Madamba, Lanao del Sur</td>
</tr>
<tr>
<td>Value Chain</td>
<td>Name of Industry Player</td>
</tr>
<tr>
<td>-------------</td>
<td>-------------------------</td>
</tr>
<tr>
<td>Traders</td>
<td>Al-Fahad Abaca Enterprises</td>
</tr>
<tr>
<td>Processors</td>
<td>NewTech Pulp Incorporated</td>
</tr>
<tr>
<td>Enablers</td>
<td>PhilFIDA Region 9</td>
</tr>
<tr>
<td></td>
<td>DTI-ARMM</td>
</tr>
<tr>
<td></td>
<td>MSU Marawi City</td>
</tr>
</tbody>
</table>

### Development Initiatives for the Abaca Industry in ARMM

<table>
<thead>
<tr>
<th>Program</th>
<th>Description</th>
<th>Beneficiary</th>
<th>Implementing Agency</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARMM-Transition Investment Support Program (TISP) (2013)</td>
<td>Provision of SSF to 4 abaca producing municipalities in Lanao del Sur (4 sets of machineries: spindle machine, grass cutter and aluminum sprayer.)</td>
<td>Madamba (2 Coop), Ganassi (1 Coop), Pualas (1 Organization), Ganassi (1 Coop)</td>
<td>DTI-ARMM Lanao del Sur Provincial Office</td>
</tr>
<tr>
<td>ARMM Comprehensive Capacity Enhancement Project (AICCEP) (2014-2017)</td>
<td>• Clustering Abaka Industry related stakeholders&lt;br&gt;• Establishment of Abaca Seed Nurseries&lt;br&gt;• Establishment of High-Density Nurseries&lt;br&gt;• Conduct of series of capability development trainings for cluster members&lt;br&gt;• Conduct of skills training for abaca fiber by-products&lt;br&gt;• Conduct of Market Matching</td>
<td>Pualas (1 Coop) and Calanogas (1 Coop), Malabang (1 Coop), Calanogas (1 Coop), Madamba (1 Coop)</td>
<td>JICA and DTI-ARMM Lanao del Sur Provincial Office</td>
</tr>
<tr>
<td>ARMM Market Driven Local Industry Promotion (2017-2019)</td>
<td>• Distribution of Abaca seedlings&lt;br&gt;• Technical assistance to Abaca farmers&lt;br&gt;• Provision of pesticides&lt;br&gt;• Technical assistance and funding provided</td>
<td>Cooperatives in Lanao Sur</td>
<td>PhilFIDA IX</td>
</tr>
<tr>
<td>Ex...</td>
<td></td>
<td>Cooperatives in Lanao Sur</td>
<td>PhilFIDA IX</td>
</tr>
<tr>
<td>Eradication of Pest and Diseases</td>
<td></td>
<td>Cooperatives in Lanao Sur</td>
<td>PhilFIDA IX</td>
</tr>
<tr>
<td>Accreditation of Traders</td>
<td></td>
<td>Cooperatives in Lanao Sur</td>
<td>PhilFIDA IX</td>
</tr>
</tbody>
</table>
### Industry Needs and Investment Opportunities

<table>
<thead>
<tr>
<th>Value Chain</th>
<th>Industry Needs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input Supply</td>
<td>Training and Capacity Development (Provision of Training on Nursery management)</td>
</tr>
<tr>
<td>Processing/Production</td>
<td>Training on GAP in abaca producing municipalities</td>
</tr>
<tr>
<td></td>
<td>Training on Proper Harvesting</td>
</tr>
<tr>
<td></td>
<td>Training on value adding of by-products</td>
</tr>
<tr>
<td>Marketing</td>
<td>Conduct Market Matching</td>
</tr>
<tr>
<td>Logistic and Infra support</td>
<td>Provision of Post-Harvest facilities such as warehouses and dryers.</td>
</tr>
</tbody>
</table>

### Coconut Industry

The figure at the right shows the total area of hectarage planted with coconut in the country, total number of bearing trees, nut production and export revenue in the year 2016 (Source: PSA).

Table 1 below shows the distribution of area planted with Coconuts and volume of production in million nuts per region. Top 5 producing regions in the country are Davao region (XI), Northern Mindanao (X), Zamboanga Peninsula (IX), Calabarzon (IV-A) & Autonomous Region in Muslim Mindanao (Source: PSA).

![Coconut production in Philippines, 2016](image)

**Table 1. Distribution of Area planted and Volume of Production per Region (PSA 2016)**

<table>
<thead>
<tr>
<th>Region</th>
<th>1,000 has</th>
<th>% share</th>
<th>million nuts</th>
<th>% share</th>
</tr>
</thead>
<tbody>
<tr>
<td>CALABARZON</td>
<td>485</td>
<td>13.6</td>
<td>1,517</td>
<td>11</td>
</tr>
<tr>
<td>MIMAROPA</td>
<td>215</td>
<td>6</td>
<td>759</td>
<td>5.5</td>
</tr>
<tr>
<td>BICOL</td>
<td>454</td>
<td>12.7</td>
<td>1,081</td>
<td>7.8</td>
</tr>
<tr>
<td>Other Luzon</td>
<td>56</td>
<td>1.6</td>
<td>219</td>
<td>1.6</td>
</tr>
<tr>
<td>LUZON</td>
<td>1,210</td>
<td>33.9</td>
<td>3,576</td>
<td>25.9</td>
</tr>
<tr>
<td>Western Visayas</td>
<td>75</td>
<td>2.1</td>
<td>311</td>
<td>2.2</td>
</tr>
<tr>
<td>Eastern Visayas</td>
<td>320</td>
<td>9</td>
<td>1,073</td>
<td>7.8</td>
</tr>
<tr>
<td>Central Visayas</td>
<td>79</td>
<td>2.2</td>
<td>262</td>
<td>1.9</td>
</tr>
<tr>
<td>VISAYAS</td>
<td>474</td>
<td>13.3</td>
<td>1,646</td>
<td>11.9</td>
</tr>
<tr>
<td>Zamboanga Peninsula</td>
<td>424</td>
<td>11.9</td>
<td>1,530</td>
<td>11.1</td>
</tr>
<tr>
<td>Northern Mindanao</td>
<td>303</td>
<td>8.5</td>
<td>1,802</td>
<td>13</td>
</tr>
<tr>
<td>Davao Region</td>
<td>357</td>
<td>10</td>
<td>1,895</td>
<td>13.7</td>
</tr>
<tr>
<td>SOCCSKARGEN</td>
<td>191</td>
<td>5.4</td>
<td>958</td>
<td>6.9</td>
</tr>
<tr>
<td>CARAGA</td>
<td>193</td>
<td>5.4</td>
<td>775</td>
<td>5.6</td>
</tr>
<tr>
<td>ARMM</td>
<td>332</td>
<td>9.3</td>
<td>1,377</td>
<td>10</td>
</tr>
<tr>
<td>Negros Island Region</td>
<td>80</td>
<td>2.2</td>
<td>267</td>
<td>1.9</td>
</tr>
<tr>
<td>MINDANAO</td>
<td>1,880</td>
<td>52.7</td>
<td>8,604</td>
<td>62.2</td>
</tr>
<tr>
<td><strong>TOTAL PH</strong></td>
<td><strong>3,565</strong></td>
<td><strong>52.7</strong></td>
<td><strong>14,735</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Coconut production in Philippines, 2016

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Area planed (has)</td>
<td>3.565 Million</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No. of bearing trees</td>
<td>339 Million</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nut Production</td>
<td>13.8 Billion</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Export Revenue USD</td>
<td>1.702 Billion</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 2. ARMM Annual Average Volume of Production per Province in 2016 (Philippine Coconut Authority and Bureau of Agricultural Statistics, PCA-BAS)

<table>
<thead>
<tr>
<th>Region/Province</th>
<th>Coconut Area</th>
<th>Yield/Tree (Nuts)</th>
<th>Yield/ Ha (Nuts)</th>
<th>Total Production (Nuts)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARMM</td>
<td>376,642.95</td>
<td>51</td>
<td>6,408</td>
<td>1,790,255,345</td>
</tr>
<tr>
<td>Basilan</td>
<td>49,026.67</td>
<td>12</td>
<td>1,440</td>
<td>18,584,058</td>
</tr>
<tr>
<td>Lanao del Sur</td>
<td>86,939.92</td>
<td>78</td>
<td>9,360</td>
<td>566,667,504</td>
</tr>
<tr>
<td>Maguindanao</td>
<td>117,074.20</td>
<td>57</td>
<td>6,840</td>
<td>538,257,213</td>
</tr>
<tr>
<td>Sulu</td>
<td>69,057.10</td>
<td>85</td>
<td>10,200</td>
<td>555,291,485</td>
</tr>
<tr>
<td>Tawi-Tawi</td>
<td>54,545.06</td>
<td>35</td>
<td>4,200</td>
<td>111,455,085</td>
</tr>
</tbody>
</table>

Table 2 above shows the distribution of hectarage planted with coconuts and volume of production per province in year 2016. Among the five provinces in ARMM, Maguindanao recorded the most number of hectarage with coconut, while Lanao del Sur recorded the most number of nut produced. On the other hand, Basilan province recorded the least number of hectarage and volume of production due to the widespread infestation of CSI (The Coconut Scale Insect). But this issue was already being addressed by PCA-ARMM and slowly recovering from the infestation.

Coconut Industry Players in the ARMM Region

<table>
<thead>
<tr>
<th>Value Chain</th>
<th>Name of Industry Player</th>
<th>Role/Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input Supplier</td>
<td>Seedlings Suppliers/Commercial Nurseries</td>
<td>No registered nurseries supplying large numbers of coconut seedlings; only small, occasional suppliers of seednuts, particularly dwarf varieties</td>
</tr>
<tr>
<td>Seednuts suppliers</td>
<td></td>
<td>Coconut seednuts for the PCA planting/replanting program and for farmers’ initiatives are sourced from farmers’ plantations using PCA-recommended selection procedures</td>
</tr>
<tr>
<td>Fertilizer Suppliers:</td>
<td>1. Artemis Salt Corporation</td>
<td>Supplier of Agricultural Grade Salt Fertilizers, Coconut Coir Organic Fertilizer and Complete Fertilizer (14-14-14)</td>
</tr>
<tr>
<td></td>
<td>2. Arvin International Marketing, Inc. Incorporated</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4. Roy Agribest Phils. Inc.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5. Fertilizer retailers in Cotabato City, Datu Odin Sinsuat, Shariff Aguak and Upi and South Upi, Maguindanao; Marawi City and Malabang, Lanao del Sur, Jolo and Siasi, Sulu; Bongao, Tawi Tawi and Lamitan City and Isabela City, Basilan</td>
<td></td>
</tr>
<tr>
<td>Producers</td>
<td>1. Sta. Clara Agrarian Reform Beneficiaries and Integrated Development Cooperatives (SCARBIDC), Lamitan City, Basilan</td>
<td>Supplier of Coconuts</td>
</tr>
<tr>
<td></td>
<td>2. Tairan Agrarian Reform Beneficiaries Multipurpose Cooperative (TARBAMC), Tairan, Lantawan, Basilan</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Limo-ok Agrarian Reform Beneficiaries Cooperative (LARBECO), Lamitan City, Basilan</td>
<td></td>
</tr>
<tr>
<td>Processors COCOSUGAR PROCESSORS</td>
<td>Coco Sugar Producers</td>
<td></td>
</tr>
<tr>
<td>----------------------------------</td>
<td>---------------------</td>
<td></td>
</tr>
<tr>
<td>1. Upi Agricultural School Farmers Multi Purpose Cooperative, Nuro Upi, Maguindanao</td>
<td>Processor of Virgin Coconut Oil Product is shipped to local buyers in Manila</td>
<td></td>
</tr>
<tr>
<td>2. Babae, Mabuhay Ka! Pandag Women’s Association, Pandag, Maguindanao</td>
<td>Buko Juice and Buko Meat manufacturer and distributor</td>
<td></td>
</tr>
<tr>
<td>3. Barira Agricultural Producers Cooperative, Making, Parang, , Maguindanao (Coco Syrup)</td>
<td>Producer of local coconut condiment or seasoning</td>
<td></td>
</tr>
<tr>
<td>4. Tubig Samin Farmers Producer Cooperative, Tubig Samin, Maimbung, Sulu</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Batu Batu Buansa Agri Marine Producers Cooperative, Buansa, Indanan, Sulu</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>VIRGIN COCONUT OIL Organix Solution-Tenorio, Awang, Datu Odin Sinsuat, Maguindanao</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Buko Juice and Buko Meat manufacturer and distributor</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>BUKO JUICE AND BUKO MEAT 1. Ekayen Buko Juice- 12 Pastor Kimpo Subdivision, Cotabato City</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>COCONUT CONDIMENTS/SEASONING 1. Amirson Palapa Iranun- Rosary Heights IV, Don E. Sero St., Cotabato City</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
COCONUT PEAT-BASED ORGANIC FERTILIZER
1. Badak Multi-Purpose Cooperative Bulod, Gen. Salipada K. Pendatun, Maguindanao

Producer of local organic fertilizer

FRESH COCONUT COOKING OIL
1. Palanguwak Small Coconut Farmers Organization, Palanguwak, Datu Anggal Midtimbang

Producer of local coconut cooking oil

Traders
COPRA BUYERS/TRADERS- 139
Basilan- 1
Lanao del Sur- 3
Maguindanao- 12
Sulu- 104
Tawi Tawi- 19

Buyers of copra produced by the farmers

WHOLENUT (DEHUSKED) NUTS
BUYERS/TRADERS- 21
Lanao del Sur-9
Maguindanao-11
Sulu-1

Buyers of wholenuts (dehusked nuts) produced by the farmers

Enablers
1. Philippine Coconut Authority Region XIV-ARMM
2. DTI-ARMM/Maguindanao Coconut Industry Cluster

1. Provision of quality planting materials
2. Implementation of PCA Programs and Projects including distribution of quality coconut planting materials, fertilizer, intercropping planting materials, equipment for coconut processing technical assistance and training and facilitation in organization of coconut farmers
3. Strengthening of coconut industry in the province through formation and market linkages

Infrastructure Support

<table>
<thead>
<tr>
<th>Facility/Item</th>
<th>Location</th>
<th>Service/Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>KAANIB Coconut Agro Hub Integrated Whole Nut Processing Plant provided by PCA (infrastructure completed; delivery and testing of equipment on-going)</td>
<td>Nituan, Parang, Maguindanao</td>
<td>Wholenut Processing 24,000 nuts/day capacity</td>
</tr>
<tr>
<td>KAANIB Coconut Agro Hub Integrated Whole Nut Processing Plant by PCA (Infrastructure 98% completed; delivery equipment scheduled in 2019)</td>
<td>Bugawas, Datu Odin Sinsuat, Maguindanao</td>
<td>Wholenut Processing 24,000 nuts/day capacity</td>
</tr>
<tr>
<td>Seven (7) units copra hot-air dryers and five (5) charcoal kilns</td>
<td>Marogong, Balabagan and Picon, Lanao del Sur; Kabbon, Pandami, Sulu and Gadung, Barira, Maguindanao</td>
<td>2,000 nuts capacity/unit</td>
</tr>
<tr>
<td>Five (5) Charcoal kiln</td>
<td>Gadung, Barira, Maguindanao</td>
<td>3,000 nuts capacity/unit</td>
</tr>
<tr>
<td>Bangsamoro Resource Center for Coconut-Based Technologies</td>
<td>Sitio Bubong, Kalanganan II, Cotabato City</td>
<td>Training and Demonstration Center of coconut farmers for coconut processing</td>
</tr>
</tbody>
</table>
## Development Initiatives for the Industry

<table>
<thead>
<tr>
<th>Program</th>
<th>Description</th>
<th>Beneficiary</th>
<th>Implementing Agency</th>
</tr>
</thead>
<tbody>
<tr>
<td>COCONUT FARM PRODUCTIVITY ENHANCEMENT PROGRAM (CFPEP)- 2008-Present</td>
<td>1. Planting and replanting with high-yielding coconut planting materials</td>
<td>All provinces of BARMM</td>
<td>PCA-XIV-ARMM</td>
</tr>
<tr>
<td></td>
<td>2. Fertilization of bearing coconut trees</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Coconut-based farming system through intercropping and livestock integration</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4. Coconut Processing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FARMERS WELFARE AND INSTITUTIONAL DEVELOPMENT PROJECT-2008- Present</td>
<td>1. Provision of extension services to coconut farmers through training, technodemonstrations, farm visits and distribution of Information, Education and Communication (IEC) materials.</td>
<td>ALL PROVINCES OF ARMM</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. Accreditation of coconut farmers organizations and cooperatives</td>
<td></td>
<td></td>
</tr>
<tr>
<td>KAANIB COCONUT AGRO HUB PROJECT (2017-2019)</td>
<td>Provision of infrastructure, equipment and capacity building for integrated coconut processing for coconut farmers organizations and cooperatives</td>
<td>MAGUINDANAO</td>
<td>PCA-XIV-ARMM</td>
</tr>
<tr>
<td>NATIONAL COCONUT FARMERS REGISTRY SYSTEM (NCFRS) 2017-2018</td>
<td>Enrollment of coconut farmers and farm workers in a database</td>
<td>ALL PROVINCES OF ARMM</td>
<td></td>
</tr>
<tr>
<td>SEEDFARM DEVELOPMENT PROGRAM- 2018-2019</td>
<td>Establishment of provincial sources of selected local and dwarf planting materials funded by PCA</td>
<td>MAGUINDANAO and TAWI TAWI</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Establishment of Market-linkage</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Industry Needs and Investment Opportunities

<table>
<thead>
<tr>
<th>Value Chain</th>
<th>Industry Needs/Investment Opportunities</th>
</tr>
</thead>
</table>
| **Input Supply**     | » Training and Capacity Development (Provision of trainings on Nursery Management)  
» Accreditation of Coconut Seedling of Coconut Farmer/Cooperative Nurseries  
» Establishment of Organic Fertilizer facility and Demo Farms/Stations.                                                                                                                   |
| **Production/Processing** | » Conduct of Farmers Field Schools on Coconut (GAP)  
» Development/Expansion of Coconut areas (Planting and replanting)  
» Establishment of Coconut Research Center in the Bangsamoro  
» Establishment of Village-type Coconut processing plant for smallholder farmers  
» Provision of Coconut by-product training for Value-Addition  
» Provision of support to product development of processed coconut food products such as FDA licenses, packaging and labeling, etc.  
» Establishment of Integrated Coconut Processing Plant in Economic Zone of Bangsamoro areas  
» Conduct Coconut Forum on effective farming system and intercropping for increased income of smallholder farmers for Poverty Reduction                                                                 |
| **Marketing**        | » Conduct Investment Forum for Coconut Industry players  
» Market Matching/Linking through Coconut Industry Cluster  
» Annual Coconut Farmers’ Congress                                                                                                                                                                                                             |
| **Logistic and Infra support** | » Provision of post-harvest facilities  
• Warehouse  
• Hauler trucks  
• Water Facilities such as sources of potable water for coconut-based food products processing such as solar-powered water pumps and irrigation facilities for coconut farms  
• Dryer  
» Farm to Market Roads linking smallholder farmers to road network for transporting of coconut products                                                                                                                                 |

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The Door to the Six Industry Clusters in the Bangsamoro Autonomous Region in Muslim Mindanao
Coffee Industry

The Country’s production of Coffee Beans in 2015 is accounted to 36,171 MT per Philippines Statistics Authority (PSA) record. Mindanao is the country’s biggest producer accounting for 75% of the total production with Luzon and Visayas share the remaining 25%. Top 3 Producing Regions in Mindanao includes SOCCSKSARGEN, Davao Region and ARMM. Philippine coffee is dominated by Robusta at 69% share, Arabica with 24%, Excelsa with 6% and Liberica with 1%.

Distribution of Area planted and Volume of Production per Region in Philippines

<table>
<thead>
<tr>
<th>REGION</th>
<th>PRODUCTION (mt)</th>
<th>AREA (ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHILIPPINES</td>
<td>31,171</td>
<td>113,738</td>
</tr>
<tr>
<td>CAR</td>
<td>2,605</td>
<td>6,631</td>
</tr>
<tr>
<td>Ilocos Region</td>
<td>40</td>
<td>352</td>
</tr>
<tr>
<td>Cagayan Valley</td>
<td>372</td>
<td>2,922</td>
</tr>
<tr>
<td>Central Luzon</td>
<td>824</td>
<td>1,957</td>
</tr>
<tr>
<td>CALABARZON</td>
<td>1,136</td>
<td>13,409</td>
</tr>
<tr>
<td>MIMAROPA</td>
<td>89</td>
<td>933</td>
</tr>
<tr>
<td>Bicol Region</td>
<td>148</td>
<td>737</td>
</tr>
<tr>
<td>Western Visayas</td>
<td>2,195</td>
<td>9,857</td>
</tr>
<tr>
<td>Central Visayas</td>
<td>104</td>
<td>1,702</td>
</tr>
<tr>
<td>Eastern Visayas</td>
<td>30</td>
<td>172</td>
</tr>
<tr>
<td>Zamboanga Peninsula</td>
<td>504</td>
<td>919</td>
</tr>
<tr>
<td>Northern Mindanao</td>
<td>2,718</td>
<td>11,709</td>
</tr>
<tr>
<td>Davao Region</td>
<td>5,840</td>
<td>17,344</td>
</tr>
<tr>
<td>SOCCSKSARGEN</td>
<td>13,479</td>
<td>26,731</td>
</tr>
<tr>
<td>CARAGA</td>
<td>823</td>
<td>4,417</td>
</tr>
<tr>
<td>ARMM</td>
<td>5,263</td>
<td>13,946</td>
</tr>
</tbody>
</table>

(Source: PSA, 2015)

Total area planted to coffee in 2015 was 113,738 ha. The top five regions with the biggest planting area for coffee are as follows: SOCCSKSARGEN (26,731 ha); Davao Region (17,344 ha); ARMM (13,946 ha); CALABARZON (13,409 ha) and Northern Mindanao (11,709 ha). Of ARMM’s 13,946 hectares of coffee plantations, 2,526 hectares are from Sulu.

Distribution of the Area Planted and for Expansion per Municipality in Sulu, 2016

<table>
<thead>
<tr>
<th>Municipality</th>
<th>Plantation (ha)</th>
<th>Area for Expansion (ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patikul</td>
<td>1,573</td>
<td>53</td>
</tr>
<tr>
<td>Parang</td>
<td>226</td>
<td>32</td>
</tr>
<tr>
<td>Panglima Estino</td>
<td>160</td>
<td>1</td>
</tr>
<tr>
<td>Indanan</td>
<td>114</td>
<td>55</td>
</tr>
<tr>
<td>Talipao</td>
<td>107</td>
<td>55</td>
</tr>
<tr>
<td>Panamao</td>
<td>65</td>
<td>3</td>
</tr>
<tr>
<td>Maimbung</td>
<td>51</td>
<td>32</td>
</tr>
<tr>
<td>K. Caluang</td>
<td>55</td>
<td>1</td>
</tr>
<tr>
<td>Luuk</td>
<td>45</td>
<td>1</td>
</tr>
<tr>
<td>Omar</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>Pangutaran</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>Lugus</td>
<td>39</td>
<td>0</td>
</tr>
<tr>
<td>Pandami</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Pata</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Siasi</td>
<td>60</td>
<td>0</td>
</tr>
<tr>
<td>Tapul</td>
<td>10</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>2,526</td>
<td>245</td>
</tr>
</tbody>
</table>

(Source: Department of Agriculture, 2016)
### Industry Players in ARMM

<table>
<thead>
<tr>
<th>Value Chain</th>
<th>Name of Industry Player</th>
<th>Roles/Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input Supplier</td>
<td>Department of Agriculture</td>
<td>Supplier/provider of coffee seeds and fertilizer</td>
</tr>
<tr>
<td></td>
<td>Philippine Coconut Authority</td>
<td>Provide coffee seedlings</td>
</tr>
<tr>
<td>Producers / Processors</td>
<td>Kankitap Consumers Cooperative</td>
<td>Planting, harvesting and processing of coffee seeds</td>
</tr>
<tr>
<td></td>
<td>Jadjeera Coffee Producers Cooperative</td>
<td>Planting, harvesting and processing of coffee seeds</td>
</tr>
<tr>
<td></td>
<td>Sulu Coffee Marketing Cooperative</td>
<td>Planting, harvesting and processing of coffee seeds</td>
</tr>
<tr>
<td>Traders</td>
<td>Cleopatra Store</td>
<td>Buyer of Ground coffee</td>
</tr>
<tr>
<td></td>
<td>Sincere Enterprise</td>
<td>Buyer of Ground coffee</td>
</tr>
<tr>
<td></td>
<td>Dennis Coffee Garden</td>
<td>Buyer of Ground coffee</td>
</tr>
<tr>
<td>Enablers</td>
<td>Department of Agriculture</td>
<td>Provide to support and technical assistance to the farmers/Producers</td>
</tr>
<tr>
<td></td>
<td>Department of Trade &amp; Industry</td>
<td>Provide to support and technical assistance to the farmers/Producers</td>
</tr>
<tr>
<td></td>
<td>Philippine Coconut Authority</td>
<td>Provide to support and technical assistance to the farmers/Producers</td>
</tr>
<tr>
<td></td>
<td>Department of Science &amp; Technology</td>
<td>Provide to support and technical assistance to the farmers/Producers</td>
</tr>
</tbody>
</table>

### Sulu Coffee Cluster Association Key Players

<table>
<thead>
<tr>
<th>Industry Players</th>
<th>Type of Activity</th>
<th>Processing Plant/ Mill/Nursery</th>
<th>Volume of Production (mt)</th>
<th>Area (ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kankitap Consumer Cooperative</td>
<td>Processor/ Consolidator</td>
<td>1 Processing Plant, 1 Nursery</td>
<td>11</td>
<td>7.5</td>
</tr>
<tr>
<td>Jadjeera Coffee Producers Cooperative</td>
<td>Processor/ Consolidator</td>
<td>1 Processing Plant, 1 Demo Farm</td>
<td>18</td>
<td>6</td>
</tr>
<tr>
<td>Sulu Coffee Mrktg Coop</td>
<td>Processor/ Consolidator</td>
<td>1 Processing Plant, 1 Demo Farm</td>
<td>30</td>
<td>20</td>
</tr>
<tr>
<td>Kiyutaan Cooperative</td>
<td>Processor</td>
<td>1 Processing Plant</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Dalmatuan Agri Marine Cooperative</td>
<td>Processor</td>
<td>1 Processing Plant</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Osaha Sin Anak Miskin Association (OSAMA)</td>
<td>Processor</td>
<td>1 Processing Plant</td>
<td>20</td>
<td>15</td>
</tr>
<tr>
<td>Marhaban Cooperative</td>
<td>Processor</td>
<td>1 Processing Plant</td>
<td>8</td>
<td>7</td>
</tr>
<tr>
<td>Tumangas Multipurpose Cooperative</td>
<td>Processor</td>
<td>1 Processing Plant</td>
<td>12</td>
<td>10</td>
</tr>
<tr>
<td>Hidayat Agri-Marine Producers Cooperative</td>
<td>Processor</td>
<td>1 Processing Plant</td>
<td>10</td>
<td>8</td>
</tr>
<tr>
<td>Bato Bato – Buansa Agri Marine Multi Purpose Cooperative</td>
<td>Processor/ Consolidator</td>
<td>1 Processing Plant</td>
<td>8</td>
<td>6</td>
</tr>
<tr>
<td>Tumantangis Cooperative</td>
<td>Processor</td>
<td>1 Processing Plant</td>
<td>15</td>
<td>12</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td></td>
<td><strong>142</strong></td>
<td><strong>100.5</strong></td>
</tr>
</tbody>
</table>
## Development Initiatives for the Industry

<table>
<thead>
<tr>
<th>Program</th>
<th>Description</th>
<th>Beneficiary</th>
<th>Implementing Agency</th>
</tr>
</thead>
</table>
| **ARMM Industry Cluster Comprehensive Enhancement Program (AICCEP)(2014-2017)** | • Clustering coffee industry stakeholders  
• 2 Nurseries with water augmentation facilities  
• 1 Demo Farm with learning center  
• Benchmark to Cavite coffee farm  
• 2 Farmer Field School Training  
• 60,000 coffee seedlings | Sulu Coffee Industry Cluster | DTI-ARMM JICA |
| **ARMM Market Driven Local Industry Promotion (MD-LIP) (2017-2019)** | • Capacitate Cluster Members  
• Market Matching  
• Cupping Session  
• Training of Trainor on Good Agricultural and Manufacturing Practices (GAP, GMP)  
• Farmer Field School Training | Sulu Coffee Cluster Association | DTI-ARMM JICA |
| **ARMM Transition Support Program (ATISP) 2013** | • 2 Roasting Machine  
• 1 Grinding Machine  
• 1 Sealer/Packaging Machine  
• 1 Dehuller  
• 1 Genset  
• 1 Solar Tunnel Drier  
• 1 Solar Tunnel Dryer | Sulu Coffee Marketing Cooperative Peoples Alliance for Progress Cooperative | DTI-ARMM DTI-NATIONAL |
| **Bottoms Up Budgeting (BUB) 2017** | • 1 Roasting Machine  
• 1 Grinding Machine  
• 3 Dehuller/Dehusker  
• 1 Solar Tunnel Dryer  
• Technical Training | Talipao, Sulu Coffee Farmers | DTI-ARMM ORG-ARMM |
| **636 Barangay ARMM HELPS 2018** | • Renovation of Production Center  
• 1 Roasting Machine  
• 1 Grinding Machine  
• 1 Solar Tunnel Dryer | Jadjeera Coffee Producer Cooperative | DTI-ARMM ORG-ARMM |
| **Municipal Local Industry Development and Investment Promotion Council (MLID IPC)** | • Policy support mechanism to Industry development and investment promotion in the municipal level | DTI, Municipal LGU plan as of January, 2019 |
### Industry Needs and Investment Opportunities

<table>
<thead>
<tr>
<th><strong>Value Chain</strong></th>
<th><strong>Industry Needs/Investment Opportunities</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Input Supply</td>
<td>Suppliers of:</td>
</tr>
<tr>
<td></td>
<td>• Certified seeds</td>
</tr>
<tr>
<td></td>
<td>• Germination boxes</td>
</tr>
<tr>
<td></td>
<td>• Polyethylene bags</td>
</tr>
<tr>
<td>Production/ Processing</td>
<td>Shared Service Facilities such as:</td>
</tr>
<tr>
<td></td>
<td>• Pulper/Huller Machines</td>
</tr>
<tr>
<td></td>
<td>• Solar Dryers</td>
</tr>
<tr>
<td></td>
<td>• Grinding Machines</td>
</tr>
<tr>
<td></td>
<td>• Moisture Meters</td>
</tr>
<tr>
<td></td>
<td>• Haulers</td>
</tr>
<tr>
<td></td>
<td>• Harvesters</td>
</tr>
<tr>
<td></td>
<td>• Pruning Saw</td>
</tr>
<tr>
<td></td>
<td>• Sprayers</td>
</tr>
<tr>
<td>Marketing</td>
<td>Expansion of production from farmers and presence of more traders and buyers</td>
</tr>
<tr>
<td>Logistic and Infra Support</td>
<td>Construction of Farm-to-Market Roads</td>
</tr>
</tbody>
</table>

### Oil Palm Industry

The picture at the right shows percentage breakdown of the global palm oil production in metric ton by country in 2016. It shows that among the Asian countries, Indonesia and Malaysia are the top producers that share the 57% and 28% respectively. While the 8% from other source where the Philippines’ contribution can be accounted for. It only shows that development of the industry in the country is still limited despite of more than 20 years of advocacy initiated by the private sector through Philippine Palm Oil Development Council, Inc. (PPDCI).

In the Philippines, Table 1 below shows the area planted with Oil Palm in 2013. Among the major 3 islands of the country, Mindanao recorded the highest percentage wherein Regions XII (SOCCSKSARGEN) and CARAGA has the most area planted with Oil Palm as of 2013.
In Table 1 below shows the data recorded on the volume of production in the country in 2013. Fresh Fruit Bunches (FFB) top producing region is still from the Mindanao island particularly SOCCSKSARGEN or Region XII, followed by Caraga and ARMM. Among the top 3 oil palm producing areas, Maguindanao-ARMM had the highest increase in area planted during the 5-year period from 2009-2013 (as seen in the table 3 below). ARMM currently ranks 3rd among the top oil palm producing regions and has one of the largest potential areas for oil palm.

Its average yield per hectare of oil palm fruits, the highest in the country, places it in the same rank with established plantations in Malaysia and Indonesia, the world’s leading palm oil producing countries.

Table 2.- Breakdown of FRESH FRUIT BUNCHES (FFB) Production (in MT) in the Philippines, 2013

<table>
<thead>
<tr>
<th>Region/Area</th>
<th>Volume (MT)</th>
<th>% to Philippine Production</th>
</tr>
</thead>
<tbody>
<tr>
<td>Luzon</td>
<td>14,283.27</td>
<td>3%</td>
</tr>
<tr>
<td>Visayas</td>
<td>34,405.98</td>
<td>7%</td>
</tr>
<tr>
<td>Mindanao</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Northern Mindanao</td>
<td>35,180.00</td>
<td>7%</td>
</tr>
<tr>
<td>Davao Region</td>
<td>2,974.99</td>
<td>1%</td>
</tr>
<tr>
<td>SOCCSKSARGEN</td>
<td>143,673.52</td>
<td>30%</td>
</tr>
<tr>
<td>CARAGA</td>
<td>136,370.72</td>
<td>29%</td>
</tr>
<tr>
<td>ARMM</td>
<td>106,527.73</td>
<td>23%</td>
</tr>
<tr>
<td>Philippines</td>
<td>473,416.21</td>
<td>100%</td>
</tr>
</tbody>
</table>
Table 3. Production Trends in ARMM, 2009 to 2013

<table>
<thead>
<tr>
<th>Indicators</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>Annual % Growth Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maguindanao</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Volume (MT)</td>
<td>288</td>
<td>664</td>
<td>18,795.20</td>
<td>60,426.75</td>
<td>106,527.73</td>
<td>7378%</td>
</tr>
<tr>
<td>Area Planted (ha)</td>
<td>800</td>
<td>805</td>
<td>1,480.00</td>
<td>1,935.00</td>
<td>1,940.00</td>
<td>29%</td>
</tr>
<tr>
<td>Average Yield (MT/ha)</td>
<td>0.36</td>
<td>0.82</td>
<td>12.7</td>
<td>31.23</td>
<td>54.91</td>
<td>3031%</td>
</tr>
</tbody>
</table>

Source: BAS

According to PPDCIs data as of 2017, area planted in ARMM particularly Maguindanao province reached 7,200 hectares, fruit-bearing stage with corresponding production volume of 172,000 MT with more areas for expansion in other provinces of the region.

Prominent Industry Players

<table>
<thead>
<tr>
<th>Value Chain</th>
<th>Industry Players</th>
<th>Roles</th>
</tr>
</thead>
</table>
| Input Suppliers | Nursery Operators (Seedlings source) | ✓ Triple PFarms  
✓ Kenram Philippines  
✓ EYG Companies  
✓ Agumil Plantations  
Input Providers (Fertilizers, etc.) | ✓ Wholesale/Retail companies inside and outside the region  
Provide high quality certified seedlings and farm inputs to farmers and government-initiated programs for oil palm development. |
| Production  | Growers/Planters  
Smallholder-Farmers (PCA-ARMM recipients) | Produce the FFBs from plantations and smallholder oil palm growers |
| Processor (Millers) | 1. Agumil Plantations  
2. Kenram Philippines  
3. Univanich Carmen  
4. AC Garcia Palm Oil Mill | Purchase FFB from farmers and traders and mill them |
| Traders | Traders/Consolidators | Caters to smallholder growers that are far from the milling plants. Some consolidators have the capacity to pay in cash directly to the farmers. |
| Enablers | Philippine Coconut Authority | Mandated agency in the development of the palm industries. |
|          | DTI-ARMM | Mandated agency in the promotion and marketing of the industries through capacity development and value addition. |
|          | PPDCI (Philippine Palm Oil Development Council, Inc.) | A conglomerate of oil palm industry players aiming to develop the industry through advocacy through lobbying of policies, capacity development, techno-training, congresses to raise awareness of farmers/growers and buyers. Also monitors the world market price of FFBs and Crude Palm Oil and keep track of the industry data and information. |
|          | Academe – University of Southern Mindanao and University of the Philippine Los Baños | Research and development not just on the varieties of Oil Palm but also on the pest and diseases management and by-products that can be produced from oil palm. |
### Development Initiatives

<table>
<thead>
<tr>
<th>Program</th>
<th>Description</th>
<th>Beneficiaries</th>
<th>Implementing Agency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advocacy/Techno-training on Good Agricultural Production/ National Palm Oil Congress</td>
<td>Advocacy</td>
<td>-</td>
<td>Philippine Palm Oil Development Council Inc. (PPDCI)</td>
</tr>
<tr>
<td>Smallholders Oil Palm Development Project (SOPDP) 2014-2017</td>
<td>Seedling and input dispersal</td>
<td></td>
<td>PCA-ARMM</td>
</tr>
</tbody>
</table>
| ARMM Industry Cluster Capacity Enhancement Project (AICCEP) 2014-2017 ARMM Market driven Local Industry Promotion (MDLIP) 2017-2019 | • Clustering the industry players  
• Capacity development training of smallholder oil palm growers  
• Provision of Shared Service Facilities (SSF) and Market-linkage | Coconut industry players in Maguindanao Province | JICA                                                   |

### Industry Needs and Investment Opportunities

<table>
<thead>
<tr>
<th>Value Chain</th>
<th>Industry Players</th>
</tr>
</thead>
</table>
| Input Supply         | • Oil Palm Nursery Establishment  
• Training and Capacity Development (Provision of trainings on Nursery Management)  
• Establishment of Organic Fertilizer facility and Demo Farms/Stations |
| Production/Processing| Conduct of Farmers Field Schools on Good Agricultural Practices (GAP) on Oil Palm  
Conduct of Value-adding Training of Oil Palm by-products for smallholder growers |
| Marketing            | • Establishment of/Accreditation of Marketing Cooperatives/Municipal Oil Palm Growers Association (MOPGA) as Trading Post for FFB from smallholders  
• Conduct Investment Forum for Oil Palm, Industry players |
| Logistic and Infra Support | • Provision of FMRs for smallholder growers in Oil Palm producing municipalities  
• Establishment of loading bays for smallholder growers  
• Shared Service Facilities (SSF) such as mechanized harvesting tools, hauling equipment, water facilities and dryer for oil palm fronds for handicraft making |
Rubber Industry

The Philippines today still remains a minor contributor of natural rubber (NR) in the world market despite the increase in rubber production over the last fourteen (14) years. It only accounts 1% of world production as reported by the International Rubber Study Group (IRSG, 2014), NR Statistic 2014 (Malaysian Rubber Board) and The Rubber Economist Ltd – Quarterly Analysis/Forecast of Industry March 2015, refer Table 1. IRSG is an inter-governmental organization based in Singapore recognized as an international body.

The top-producing region in 2017 in Philippines is Zamboanga Peninsula, with its production of 59.03 thousand metric tons accounting for 42.7 percent of the total rubber production of the country. SOCCSKSARGEN came in close with 41.8 percent contribution while ARMM had 6.7 percent share to the national production.

Basilan province covers a large area of rubber production increasing to 48,366 hectares as of December 2017 from 45,307.57 hectares from 2015. The province has a total of 19,346,400 productive trees excluding the number of bearing trees in Isabela City with an annual volume production of 774,262.91 metric tons.

<table>
<thead>
<tr>
<th>Location</th>
<th>Rubber Areas (Hectares)</th>
<th>Rubber Production (MT)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2014</td>
<td>2015</td>
</tr>
<tr>
<td>Basilan</td>
<td>36,000.00</td>
<td>45,307.57</td>
</tr>
<tr>
<td>Lanao del Sur</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>Maguindanao</td>
<td>2,015.00</td>
<td></td>
</tr>
<tr>
<td>Sulu</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tawi-Tawi</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ARMM</td>
<td>38,115.00</td>
<td>45,307.57</td>
</tr>
</tbody>
</table>

Table 1 - World NR Production 2014

<table>
<thead>
<tr>
<th>Ranking</th>
<th>Country</th>
<th>2014 000 Tens</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Thailand</td>
<td>4,099.2</td>
<td>34.71</td>
</tr>
<tr>
<td>2</td>
<td>Indonesia</td>
<td>3,141.7</td>
<td>26.60</td>
</tr>
<tr>
<td>3</td>
<td>Vietnam</td>
<td>953.7</td>
<td>8.08</td>
</tr>
<tr>
<td>4</td>
<td>China</td>
<td>857.0</td>
<td>7.26</td>
</tr>
<tr>
<td>5</td>
<td>India</td>
<td>704.5</td>
<td>5.97</td>
</tr>
<tr>
<td>6</td>
<td>Malaysia</td>
<td>665.3</td>
<td>5.55</td>
</tr>
<tr>
<td>7</td>
<td>Cote d'Ivoire</td>
<td>573.8</td>
<td>4.99</td>
</tr>
<tr>
<td>8</td>
<td>Brazil</td>
<td>184.9</td>
<td>1.57</td>
</tr>
<tr>
<td>9</td>
<td>Myanmar</td>
<td>143.3</td>
<td>1.26</td>
</tr>
<tr>
<td>10</td>
<td>Philippines</td>
<td>114.9</td>
<td>0.97</td>
</tr>
<tr>
<td>11</td>
<td>Sri Lanka</td>
<td>102.9</td>
<td>0.87</td>
</tr>
<tr>
<td>Other 15 Countries</td>
<td>529.30</td>
<td>4.48</td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>11,809</td>
<td>100%</td>
</tr>
</tbody>
</table>

Source: IRSG Report, 4th Qtr. 2015
Malaysian Rubber Board Report 2014
The Rubber Economist Ltd – London and Bangkok
Quarterly Analysis & Forecast of Industry, 2015

Distribution of NR production in Philippines, 2017
Rubber Production Land in Basilan Province

<table>
<thead>
<tr>
<th>Municipality</th>
<th>Actual Plantation (in hectares)</th>
<th>Projected land area for expansion in hectares</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Lamitan City</td>
<td>18,951.76</td>
<td>15,000</td>
</tr>
<tr>
<td>2. Lantawan</td>
<td>2,023</td>
<td>(No data)</td>
</tr>
<tr>
<td>3. Maluso</td>
<td>1,022</td>
<td>(No data)</td>
</tr>
<tr>
<td>4. Sumisip</td>
<td>9,059.96</td>
<td>200</td>
</tr>
<tr>
<td>5. Tipo-Tipo</td>
<td>1,302</td>
<td>20</td>
</tr>
<tr>
<td>6. Ungkaya Pukan</td>
<td>5,142.40</td>
<td>10</td>
</tr>
<tr>
<td>7. Al-Barka</td>
<td>5,806.5</td>
<td>(No data)</td>
</tr>
<tr>
<td>8. Tuburan</td>
<td>3,289</td>
<td>(No data)</td>
</tr>
<tr>
<td>9. Akbar</td>
<td>560</td>
<td>(No data)</td>
</tr>
<tr>
<td>10. Hji. Mohammad Ajul</td>
<td>1,209.82</td>
<td>(No data)</td>
</tr>
<tr>
<td>11. Resettlement: (MARBEMPCO, AIMARBEMPCO, SARBIDC, BARBEMPCO)</td>
<td>-</td>
<td>200</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>48,366.44</strong></td>
<td><strong>15,430</strong></td>
</tr>
</tbody>
</table>

Industry Players

The rubber industry in the Province of Basilan is composed of small growers, rubber-based cooperatives (Agrarian Reform Communities), processors, traders/buyers, privately-owned and corporate plantations and input suppliers. The industry is a mix of old and new rubber trees.

<table>
<thead>
<tr>
<th>Value Chain</th>
<th>Industry Players</th>
<th>Roles/Functions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input Suppliers</td>
<td>• PLGU Nursery (21.8 has) • Lamitan City Nursery • DAF-ARMM Nursery • LARBECO Nursery (2 has.) • SCARBIDC Nursery (1.5 has.)</td>
<td>Provides input supplies to rubber growers.</td>
</tr>
<tr>
<td>Small Growers/Farmers</td>
<td>• Lamitan City Federation of Small Rubber Growers Associations, Inc. (LACFERGA, Inc.) • Agrarian Reform Communities (ARCs)</td>
<td>Produces quality rubber budwoods, cuplumps and sell to local traders for processing.</td>
</tr>
<tr>
<td>Processors</td>
<td>• United Workers Agrarian Reform Beneficiaries Multi-Purpose Cooperative (UWARBMPC) • EJN Rubber Processing Plant • Marketing Corp. • Pioneer Amaresa Inc. • FARMA • Standard rubber-Development Corp. • Philippine Pioneer Rubber Products Corp. • Mark Bright Corp. • Ozone Rubber, Inc. • MJ Rubber Trading • MBH Rubber Trading</td>
<td>Local rubber processors based in Basilan that provide opportunities to small rubber farmers and cooperatives. Processes field cup lumps to rubber bales or SPR20 and Pale crepes.</td>
</tr>
<tr>
<td>Value Chain</td>
<td>Industry Players</td>
<td>Roles/Functions</td>
</tr>
<tr>
<td>-------------</td>
<td>-----------------</td>
<td>----------------</td>
</tr>
<tr>
<td>Traders</td>
<td>Lamitan City Rubber Traders Assoc.</td>
<td>A private group of traders who agreed to consolidate production of small growers to supply outside demand. The flow of market has been limited to domestic buyers, however, concerned agencies have been promoting, negotiating and conducting market tie-up with tire and non-tire manufacturing firms and to other countries for possible export.</td>
</tr>
<tr>
<td>Enablers</td>
<td>Lamitan City Rubber Industry Cluster</td>
<td>Promotion and sustenance of natural rubber industry development for inclusive growth and environmental protection and allocate funds thereof and other purposes for Lamitan City</td>
</tr>
<tr>
<td>Enablers</td>
<td>Basilan Rubber Industry Cluster Council</td>
<td>Promotion and sustenance of natural rubber industry development for inclusive growth and environmental protection and allocate funds thereof and other purposes for the entire Basilan Province.</td>
</tr>
<tr>
<td>Enablers</td>
<td>DTI-ARMM</td>
<td>Mandated agency in the promotion and marketing of the industries through capacity development and value addition.</td>
</tr>
<tr>
<td>Enablers</td>
<td>Department of Agriculture</td>
<td>Provides technical assistance and other support to smallholders in the country.</td>
</tr>
<tr>
<td>Enablers</td>
<td>TESDA-ARMM</td>
<td>Provides technical skills training to rubber growers</td>
</tr>
<tr>
<td>Enablers</td>
<td>PLGU/LGU</td>
<td>Provides policy direction in the development of the rubber industry; technical and financial supports to all industry stakeholders; enhancement of rubber technology transfer to rubber stakeholders; Provides infrastructure support facilities for the rubber development and provides availability of technical inputs to interested rubber growers in the province.</td>
</tr>
<tr>
<td>Enablers</td>
<td>Department of Agriculture, Bureau of Agricultural Research (BAR)</td>
<td>Focal point for DA research into rubber industry and provides institutional home for IRRI.</td>
</tr>
<tr>
<td>Enablers</td>
<td>Department of Agriculture, Bureau of Plant and Industry (BPI)</td>
<td>BPI has accredited 27 rubber nurseries and budwood gardens throughout the country with high yielding rubber clones.</td>
</tr>
<tr>
<td>Enablers</td>
<td>Department of Industry, Board of Investments (BOI)</td>
<td>Coordinating agency of technical working groups to overcome industry-binding constraints, it focuses primarily on processing activities. DTI has also engaged with tire manufacturer in Yokohama to increase its local sourcing of rubber.</td>
</tr>
<tr>
<td>Enablers</td>
<td>Philrubber Technical Working Group</td>
<td>Acts as lead agency to coordinate efforts across value chain, including formation of roadmaps.</td>
</tr>
<tr>
<td>Enablers</td>
<td>Philippine Rubber Industries Associations (PRIA)</td>
<td>Objectives include variety measures to increase the sector’s performance through professional development, knowledge sharing and networking opportunities.</td>
</tr>
<tr>
<td>Enablers</td>
<td>Philippine Rubber Research Institute (PRRI)</td>
<td>Mandated to initiate and administer research and development (R&amp;D) programs to improve quality of rubber and benefit of smallholder rubber producers and processors. Working with local governments to distribute planting materials to rubber farmers.</td>
</tr>
</tbody>
</table>
Development Initiatives
As the provincial government promises to enhance the rubber sector in Basilan and to efface the image of the province with “Dirty rubber of Basilan”, DTI-ARMM Basilan together with other stakeholders initiated the expansion of LRIC (inclusive to Lamitan City) to BRICC that involves all cities and municipalities in the province. The formulation of Basilan Rubber Industry Roadmap followed and became a tool for setting the clear vision of the Rubber Industry of Basilan Province. Through this, programs and projects as well as activities were identified to further develop the industry in the province.

<table>
<thead>
<tr>
<th>Program</th>
<th>Description</th>
<th>Beneficiaries</th>
<th>Implementing Agency</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARMM Industry Cluster Capacity Enhancement Project (AICCEP)2014-2017</td>
<td>Executive Order No. 7, Series of 2015, an executive order creating the Lamitan City Rubber Industry Cluster (LCRIC) to promote and sustain the development of Natural Rubber Industry for inclusive growth and environmental protection and allocate funds thereof and purposes within the City of Lamitan.</td>
<td>Lamitan City Rubber Industry Cluster (LCRIC)</td>
<td>DTI-ARMM Basilan, CLGU, JICA</td>
</tr>
<tr>
<td></td>
<td>Profiling of Core Members of the LRCIC Team</td>
<td>LCRIC</td>
<td>DTI-ARMM Basilan, CLGU, JICA, LCRIC</td>
</tr>
<tr>
<td></td>
<td>Prepared Lamitan City Rubber Industry Assessment and Database</td>
<td>LCRIC</td>
<td>CLGU, JICA, LCRIC</td>
</tr>
<tr>
<td></td>
<td>Rubber Production Management Training</td>
<td>LCRIC</td>
<td>JICA, DTI-ARMM Basilan, CLGU, DAF-ARMM Basilan LCRIC</td>
</tr>
<tr>
<td></td>
<td>Enhancement of Tapping Techniques and Rubber Quality Improvement Advocacy</td>
<td>LCRIC</td>
<td>JICA, DTI-ARMM Basilan, CLGU, DAF-ARMM Basilan LCRIC</td>
</tr>
<tr>
<td></td>
<td>Orientation on Quality Management System (QMS)</td>
<td>LCRIC</td>
<td>DTI-ARMM Basilan, CLGU, LCRIC, DAF-ARMM Basilan, JICA</td>
</tr>
<tr>
<td></td>
<td>Local Market Mission</td>
<td>LCRIC</td>
<td>LCRIC, DTI-ARMM Basilan, CLGU, JICA</td>
</tr>
<tr>
<td></td>
<td>Rubber Quality Improvement Program(Distribution of Coagulating Containers)</td>
<td>LCRIC</td>
<td>JICA, DTI-ARMM Basilan, CLGU, DAF-ARMM</td>
</tr>
<tr>
<td></td>
<td>Establishment of Budwood Garden</td>
<td>LCRIC</td>
<td>JICA, CLGU, DTI-ARMM Basilan, DAF-ARMM Basilan</td>
</tr>
<tr>
<td></td>
<td>Distribution of Tools and Farm Inputs</td>
<td>LCRIC</td>
<td>CLGU, DTI-ARMM Basilan, JICA</td>
</tr>
<tr>
<td></td>
<td>Training on Raw Rubber Classification Cum Market Linkage</td>
<td>LCRIC</td>
<td>CLGU, LCRIC, DTI-ARMM Basilan, JICA</td>
</tr>
<tr>
<td>DAF-ARMM Counterpart and Support</td>
<td>Distribution of budded rubber seedlings</td>
<td>Provincial Rubber Growers</td>
<td>DAF-ARMM Basilan</td>
</tr>
<tr>
<td></td>
<td>Distribution of Tapping Knives, Coagulating Containers and Nursery Management, Production Technology and Integrated Farming System</td>
<td>Provincial Rubber Growers</td>
<td>DAF-ARMM Basilan</td>
</tr>
<tr>
<td>Program</td>
<td>Description</td>
<td>Beneficiaries</td>
<td>Implementing Agency</td>
</tr>
<tr>
<td>---------</td>
<td>-------------</td>
<td>---------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>ARMM Market driven Local Industry Promotion (MDLIP)2017-2019</td>
<td>Formation of Rubber Industry Core Cluster Group</td>
<td>Basilan Rubber Industry Cluster Council (BRICC)</td>
<td>DTI-ARMM, CLGU, JICA</td>
</tr>
<tr>
<td></td>
<td>Executive Order No. 29, Series of 2018, an executive order creating the Basilan Rubber Industry Cluster Council (BRICC) to promote and sustain the development of Natural Rubber Industry for inclusive growth and environmental protection and allocate funds thereof and purposes within the province of Basilan</td>
<td>(BRICC)</td>
<td>DTI-ARMM, PLGU, JICA</td>
</tr>
<tr>
<td></td>
<td>Local Study Mission to North Cotabato</td>
<td>(BRICC)</td>
<td>DTI-ARMM, JICA</td>
</tr>
<tr>
<td></td>
<td>Formulation of Basilan Rubber Industry Cluster Council Roadmap</td>
<td>Rubber growers and all stakeholders</td>
<td>DTI-ARMM, JICA, BRICC</td>
</tr>
<tr>
<td></td>
<td>Establishment on Quality Standard of Rubber Industry in Basilan Province</td>
<td>(BRICC)</td>
<td>DTI-ARMM, BRICC, PLGU, JICA</td>
</tr>
<tr>
<td>ARMM Market driven Local Industry Promotion (MDLIP)2017-2019</td>
<td>Advanced Training on Rubber Tapping for TM Certification</td>
<td>Rubber Farmers in Sumisip</td>
<td>DTI-ARMM, BRICC, PLGU, JICA</td>
</tr>
<tr>
<td></td>
<td>Distribution of Coagulating Containers for rubber</td>
<td>Rubber Farmers in Sumisip</td>
<td>DTI-ARMM, BRICC, PLGU, JICA</td>
</tr>
<tr>
<td>House Bill (HB) 2912</td>
<td>An act to develop the rubber industry, establishing for the purpose the Philippine Rubber Industry Development Board, defining its powers and functions and appropriating funds thereof;” awaiting to be passed.</td>
<td>Rubber Industry Stakeholders</td>
<td></td>
</tr>
<tr>
<td>Industrial Forest Plantation (IFP) based on DENR AO 1999-53</td>
<td>Industrial tree plantation is among the special laws listed in the Investment Priority Plan (IPP). This covers extensive plantation of forest land of tree crops (including timber and non-timber species such as rubber, bamboo, rattan, etc., except fruit trees) for commercial and industrial purposes.</td>
<td>Rubber Industry Stakeholders</td>
<td></td>
</tr>
<tr>
<td>RA 10089</td>
<td>An act creating the Philippine Rubber Research Institute to develop the Philippine Rubber Industry and for other purposes.</td>
<td>Rubber Industry Stakeholders</td>
<td></td>
</tr>
</tbody>
</table>
The Door to the Six Industry Clusters in the Bangsamoro Autonomous Region in Muslim Mindanao

<table>
<thead>
<tr>
<th>Program</th>
<th>Description</th>
<th>Beneficiaries</th>
<th>Implementing Agency</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Value Crops Development Program (HVCDP)</td>
<td>Program is designed to work closely with private sector, particularly smallholder and farmers. Through the provision of extension services, goals include food security, expansion of private sector investment and income as well as improved production techniques. Rubber is a priority commodity.</td>
<td>Rubber farmers and stakeholders</td>
<td>Department of Agriculture</td>
</tr>
<tr>
<td>Training Regulations on Rubber Production NC II and Rubber Processing NC II</td>
<td>Rubber production, new tapping techniques and processing trainings</td>
<td>Rubber farmers/tappers</td>
<td>TESDA</td>
</tr>
<tr>
<td>Infrastructure Support Facilities</td>
<td>Technical inputs shall be made available to interested rubber growers in the province (e.g. high yielding clones, fertilizers, village type processing plants, high grade processing plants, farm to market roads, port expansion including water system development).</td>
<td>Rubber growers and other stakeholders</td>
<td>PLGU</td>
</tr>
</tbody>
</table>

Industry Needs and Investment Opportunities

<table>
<thead>
<tr>
<th>Value Chain</th>
<th>Industry Needs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input Suppliers</td>
<td>Establishment of Centralized Budwood Collection Nursery of the Provincial Government for the distribution of high yielding clones to rubber farmers in the province.</td>
</tr>
<tr>
<td>Production</td>
<td>Production of Quality Rubber Budwood for distribution in the province. Expansion of potential areas for rubber Provision of post-harvest facilities and SSF to rubber farmers</td>
</tr>
<tr>
<td>Processing</td>
<td>Establishment of high value processing plants with ISO certification Establishment of village type processing plants in municipalities</td>
</tr>
<tr>
<td>Marketing</td>
<td>Local and foreign trade missions Rubber Investment Forum</td>
</tr>
<tr>
<td>Logistic and Infra Support</td>
<td>Provision of Farm-To-Market Roads and Post-Harvest Facilities</td>
</tr>
</tbody>
</table>
Seaweed Industry

World seaweed production has now reached 29.4 million metric tons in 2015. Figure 1 shows that 47% of global seaweed production comes from China. This is equivalent to 13.9 million metric tons of seaweeds. Indonesia is the second largest producer of seaweed, contributing 38% or 11.3 million metric tons of global production, while the Philippines is now third, contributing 1.6 million metric tons of seaweed production (FAO 2016).

<table>
<thead>
<tr>
<th>Year</th>
<th>China</th>
<th>Indonesia</th>
<th>Philippines</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>11,549,555</td>
<td>5,170,201</td>
<td>1,840,833</td>
</tr>
<tr>
<td>2012</td>
<td>12,832,060</td>
<td>6,514,854</td>
<td>1,751,071</td>
</tr>
<tr>
<td>2013</td>
<td>13,561,445</td>
<td>9,298,474</td>
<td>1,558,378</td>
</tr>
<tr>
<td>2014</td>
<td>13,326,315</td>
<td>10,076,992</td>
<td>1,549,576</td>
</tr>
<tr>
<td>2015</td>
<td>13,924,535</td>
<td>11,269,341</td>
<td>1,566,361</td>
</tr>
</tbody>
</table>

The Philippines ranked second in 2003 to 2006, producing 9-10 per cent, after which it was overtaken by Indonesia in 2007 (FAO 2014). Indonesia also accounts for 65% of the coral triangle seacoast, which has been identified to be highly suitable for seaweed production.

The most important farmed seaweed species is Eucheuma (10.2 million tons in 2015), followed by Japanese kelp or Wakami (8 million tons), Gracilaria spp. (3.9 million tons), Undaria spp. (wakame) (23 million tons), Kappaphycus (1.8 million tons), and Porphyra spp (nori) (1.2 million tons). China produces mainly the kelp Laminaria Japonica while Indonesia and Philippines focused on Eucheuma spp, Kappaphycus spp, and Gracilaria spp from which carrageenan and agar can be extracted (FAO 2016).

The Philippine has an available farmable area of 500,000 hectares for deep-sea and 200,000 hectares along coastline. Out of this total coastline potential areas only 60,000 hectares are being farmed and utilized. This total provides for the livelihood of up to 200,000 families (SIAP 2017). Philippine seaweed production reached the highest point in 2011 at 1,840,833 metric tons but dwindled during the next three years because of the highly intensified nature of the farming system, and subsequently disease-related issues. By 2017, seaweed production reached to 1,415,320.79 metric tons which marked a .77% increase from 2016 production accounting to 1,404,519.23 metric tons (countrystat/PSA).
The Door to the Six Industry Clusters in the Bangsamoro Autonomous Region in Muslim Mindanao

The top three seaweed producing regions in the country are as follows: the ARMM contributing to 640,593.44 MT or equivalent to 45%, whereas MIMAROPA accounting to 325,915.74 MT or 23%, and finally Zamboanga Peninsula contributing about 182,562.44 MT or 13% (countrystat/PSA).

Production (MT)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Tawi-Tawi</td>
<td>294,595.80</td>
<td>304,999.84</td>
<td>305,902.71</td>
<td>298,433.53</td>
<td>321,739.82</td>
</tr>
<tr>
<td>Sulu</td>
<td>218,694.08</td>
<td>220,439.61</td>
<td>222,835.20</td>
<td>223,074.78</td>
<td>223,991.25</td>
</tr>
<tr>
<td>Basilan</td>
<td>6,488.13</td>
<td>6,628.61</td>
<td>6,478.10</td>
<td>856.48</td>
<td>1,088.58</td>
</tr>
<tr>
<td>Maguindanao</td>
<td>89,386.54</td>
<td>90,927.55</td>
<td>92,219.48</td>
<td>90,809.49</td>
<td>93,773.78</td>
</tr>
<tr>
<td>Lanao del Sur</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Source: BFAR-ARMM Fisheries Profile

Tawi-Tawi is the largest seaweed-producing province both in the ARMM and the country with a total production of 321,739.82 metric tons as of 2017 or constituting 50% and 23%, respectively of the regional and national production. Since its discovery, it became the major industry of the province and has grown to be the most dependable source of income and livelihood for fisherfolks of the ten (10)-seaweed producing municipalities of the province. The province has only eleven (11) municipalities. Moreover, Tawi-Tawi is also known as the best source of quality raw dried seaweed which produces the Philippine Natural Grade (PNG) carrageenan, considered to be the world’s best commercially used carrageenan.
The five provinces of ARMM consisting of Maguindanao, Lanao del Sur, Basilan, Sulu and Tawi-Tawi recorded a total existing production area of 69,303 has. with an existing potential farmable area of 26,359 has. Of the above total, the island-province of Tawi-Tawi emerged as the single biggest seaweed producing area with a total existing production area of 62,911 has. and potential farmable area of 22,024 has. or roughly 91% and 83%, respectively of the total regional production areas.

However, geographic information system (GIS) studies have revealed that, if seaweed farming were expanded to a depth of 15 m in Sitangkai, Tawi-Tawi - about 102,885 has. would be available for expansion. These estimates are indicative of the large potential for further industry growth in this part of the province (Hurtado 2013).

### Existing and Potential Farm Area

<table>
<thead>
<tr>
<th>Province/Municipality</th>
<th>Existing</th>
<th>Potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tawi-Tawi</td>
<td>62,911</td>
<td>22,024</td>
</tr>
<tr>
<td>Sibutu</td>
<td>5,562</td>
<td>2,727</td>
</tr>
<tr>
<td>Sitangkai</td>
<td>34,197</td>
<td>5,695</td>
</tr>
<tr>
<td>Panglima Sugala</td>
<td>7,449</td>
<td>2,356</td>
</tr>
<tr>
<td>Bongao</td>
<td>197</td>
<td>351</td>
</tr>
<tr>
<td>Simunul</td>
<td>531</td>
<td>4,756</td>
</tr>
<tr>
<td>Sapa-Sapa</td>
<td>4,700</td>
<td>1,500</td>
</tr>
<tr>
<td>Languyan</td>
<td>1,200</td>
<td>1,027</td>
</tr>
<tr>
<td>South Ubian</td>
<td>4,500</td>
<td>1,551</td>
</tr>
<tr>
<td>Tandubas</td>
<td>4,500</td>
<td>1,561</td>
</tr>
<tr>
<td>Mapun</td>
<td>75</td>
<td>500</td>
</tr>
<tr>
<td>Sulu</td>
<td>5,621</td>
<td>3,893</td>
</tr>
<tr>
<td>Basilan</td>
<td>435</td>
<td>350</td>
</tr>
<tr>
<td>Maguindanao</td>
<td>336</td>
<td>92</td>
</tr>
<tr>
<td>Lanao del Sur</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>69,303</strong></td>
<td><strong>26,359</strong></td>
</tr>
</tbody>
</table>

Source: BFAR-ARMM Fisheries Profile (2016)

### Industry Players

#### Value Chain

**Input Suppliers/Providers**

- There are 12 hardwares operating in the province per BNR with DTI-ARMM Tawi-Tawi as follows:
  - 1. Phanies Hardware
  - 2. Delia’s Fishing Supply
  - 3. New Alem’s Enterprise
  - 4. Hapi Hardware & General Merchandise
  - 5. Bongao Hardware Enterprise
  - 6. Uniline Hardware
  - 7. Myka Hardware
  - 8. Lucky Hardware
  - 9. Denmark Fishing Supply
  - 10. Al-hussin Hardware
  - 11. K.A.F Hardware
  - 12. My Home Hardware

- Provides/ supplies farm inputs such as seaweed farm implements and other supplies related to farming and production of seaweed

- Growers and nurseries operated by farmers-coop/ associations

- Provides seedlings

#### Production

- There are 22,681 registered seaweed farmers under FishR Program of BFAR-ARMM as of May 2018
- Per CY 2018 record, there are 44 seaweed farmers cooperatives in the province registered with the Cooperative Development Authority (CDA-ARMM)

- Generally, produces and sells wet seaweed to their fellow farmers for re-seedlings while raw dried seaweed is being sold to the local trader or buying stations and cooperatives.
<table>
<thead>
<tr>
<th>Value Chain</th>
<th>Industry Players</th>
<th>Roles/Functions</th>
</tr>
</thead>
<tbody>
<tr>
<td>End Market</td>
<td>• commercial and industrial users of carrageenan  • consumer of seaweed-based carrageenan by products</td>
<td>• The end user of the industry carrageenan by-products.  • Provides information on the market trends, demand, innovation and other useful information of the industry.</td>
</tr>
<tr>
<td>Value Chain</td>
<td>Industry Players</td>
<td>Roles/Functions</td>
</tr>
<tr>
<td>-------------</td>
<td>--------------------------------------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>DTI-ARMM</td>
<td>The primary, coordinative, facilitative and regulatory arm of the Autonomous Regional Government on trade and industry activities. It is in-charge in the development of micro, small and medium enterprises. Likewise, it is the leading Autonomous Regional agency mandated in the development and promotion of local industries through Clustering Approach.</td>
<td></td>
</tr>
<tr>
<td>BFAR-ARMM</td>
<td>Agency of the Autonomous Regional Government, responsible for the development, improvement, management and conservation of the country's fisheries and aquatic resources including seaweed.</td>
<td></td>
</tr>
<tr>
<td>DOST-ARMM</td>
<td>Mandated in discharging science and technology support to MSMEs and local industries development.</td>
<td></td>
</tr>
<tr>
<td>TESDA-ARMM</td>
<td>Mandated to provide quality technical education and skills development to the people in the Autonomous Region.</td>
<td></td>
</tr>
<tr>
<td>DAF-ARMM</td>
<td>Agency of the Autonomous Regional Government, responsible in the promotion of agricultural development by providing the policy framework, public investments, and support services needed for domestic and export-oriented business enterprises. It is the primary concern of the department to improve farm income and generate work opportunities for farmers, fishermen and other rural workers.</td>
<td></td>
</tr>
<tr>
<td>CDA-ARMM</td>
<td>Regulate, develop and provide charter to cooperative (tertiary, secondary and primary).</td>
<td></td>
</tr>
<tr>
<td>MSU-TCTO</td>
<td>Mandated to provide the opportunities of quality education to the Muslims and other cultural communities and undertake programs for the sustainable utilization and rational management of the marine and fisheries resources of the Sulu Sea and nearby waters through human resource development, research, and transfer of appropriate technology with the aim of improving the socio-economic conditions of the people in Southern Philippines in accordance with the regional and national goals.</td>
<td></td>
</tr>
<tr>
<td>Seaweed Industry Association of the Philippines (SIAP)</td>
<td>A non-profit organization whose objective is to unite and assist all stakeholders of the industry to attain global leadership in seaweeds and carrageenan. The office address is c/o BFAR Regional Office 7, Cebu City.</td>
<td></td>
</tr>
<tr>
<td>Value Chain</td>
<td>Industry Players</td>
<td>Roles/Functions</td>
</tr>
<tr>
<td>-------------</td>
<td>-----------------</td>
<td>----------------</td>
</tr>
<tr>
<td>Seaweed Industry Cluster</td>
<td>Refers to seaweed cluster piloted in Sibutu municipality and Barangay Buan, Panglima Sugala, Tawi-Tawi. They were organized under JICA AICCEP and MDLIP Industry Clustering Approach Project. With the support of development enabling partners, the cluster leaderships are committed to pursue and sustain development initiatives of seaweed industry through inclusive growth of the community and improve quality of life of the primary sector, the farmers</td>
<td></td>
</tr>
<tr>
<td>Local Government Unit (LGUs)</td>
<td>Refers to barangay, municipal and provincial local government units</td>
<td></td>
</tr>
<tr>
<td>Chamber of Commerce and Industries (CCIs) Organization</td>
<td>There are two (2) CCIs based in Bongao, Tawi-Tawi. For this purpose, the Tawi-Tawi Chamber of Commerce and Industry is the one referred herein because they are on board and particularly involved as member of Seaweed Industry Roadmap-Technical Working Group and as private sector partner in seaweed development in the province</td>
<td></td>
</tr>
<tr>
<td>Civil Society Organizations (CSOs)</td>
<td>Refers to Non-Government Organizations (NGOs) and People’s Organizations (POs) engaged in the project and other related seaweed development initiatives. (e.g TCCI, Noorus-sallam )</td>
<td></td>
</tr>
<tr>
<td>Motor Vessels (M/V)</td>
<td>Transport &amp; Logistic Services - Refers to both local and domestic transport services (both sea and land transport facilities) that cater to the need of local buyers to transport their product from the community to market point of destination</td>
<td></td>
</tr>
<tr>
<td>1. Aleson Shipping Line</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Magnolia Shipping Lines</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Ever Shipping Lines</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Motor Launch (M/L)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. M/L Lady HK</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. M/L Talisay Queen</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. M/L Abdul-aziz Express</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. M/L Arpi</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. M/L Shaira</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. M/L Algenti</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. M/L Basilyn</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M/L Sea Dayang (6 motor launch)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Infrastructure Support

<table>
<thead>
<tr>
<th>Facility</th>
<th>Location</th>
<th>Service/Capacity</th>
</tr>
</thead>
</table>
| 2- units Solar Dryers under 2015 ARMM HELPS Project | Brgy. Buan and Brgy. Balimbing, Panglima Sugala, Tawi-Tawi | Drying Capacity Per Unit:  
• 6 sacks of wet seaweed per drying period, normally 4 days to get the maximum moisture content  
• 10-15 sacks of dried seaweed (for re-drying) |
| Seaweed Post-harvest Laboratory Seaweed Cultivars Laboratory and Facilities | MSU-TCTO College of Fisheries, Bongao, Tawi-Tawi |  
• Moisture Content of Raw Dried Seaweed  
• Physical Characteristics of Carrageenan  
• Propagation of Seedstocks |
| 1. Unit Solar Dyer under National Seaweed Development Program | Brgy. Buan, Panglima Sugala, Tawi-Tawi | Drying Capacity Per Unit:  
• 6 sacks of wet seaweed per drying period, normally 4 days to get the maximum moisture content  
• 10-15 sacks of dried seaweed (for re-drying) |

## Development Initiatives

<table>
<thead>
<tr>
<th>Program</th>
<th>Description</th>
<th>Beneficiary/ Year Implemented</th>
<th>Implementing Agency</th>
</tr>
</thead>
</table>
| ARMM Market Driven Local Industry Promotion (MDLIP) 2017-2019 | • Capacity development of Industry Cluster  
• Promoting and facilitating market linkage | Seaweed Industry Cluster based in Brgy. Tongsibalo, Sibutu, Tawi-Tawi / 2018 | DTI-ARMM/ JICA/ Industry Cluster |
| ARMM Industry Comprehensive Capacity Enhancement Project (AICCEP) 2013-2016 | • Clustering the industry players  
• Capacity development of Industry Cluster | Provincial Industry Cluster consist of representatives from LGUs, Seaweed Farmers, Traders, Academe, CSO, and other enabling partners/2015-2017 | DTI-ARMM/ JICA/ Industry Cluster |

- Cluster Local Market Consolidator (LMC) Coops: Integrated Farmers and Seaweed Traders Marketing Cooperative (I-FAST MC) based in Municipality of Sibutu, Tawi-Tawi; and Buan Seaweed Farmers Marketing Cooperative (BSFMC) based in Brgy. Buan, Municipality of Panglima Sugala, Tawi-Tawi. All farmers in the community and the buyers/processors/2018
- Areas covered were 3 barangays in Panglima Sugala Municipality namely: Buan, Karaha and Tundon;
- Brgy. Tongsibalo, Municipality of Sibutu, Tawi-Tawi;
- Brgy. Tongmageng, Municipality of Sitangkai, Tawi-Tawi
<table>
<thead>
<tr>
<th>Program</th>
<th>Description</th>
<th>Beneficiary/ Year Implemented</th>
<th>Implementing Agency</th>
</tr>
</thead>
<tbody>
<tr>
<td>National Seaweeds Development Program</td>
<td>The National Seaweeds Development Program’s primary goal is to increase seaweed production through the various development strategies and activities being implemented nationwide to provide livelihood to fisherfolks. This is through the government and farmers/private sector partnership and collaboration efforts.</td>
<td>Those identified by BFAR during its yearly planning sessions/ 2017</td>
<td>DA-BFAR</td>
</tr>
<tr>
<td>Mas SAGANANG SAKAHANG-PANDAGAT</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seaweed Livelihood Development Program 2017-2022</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Component 1: Mas SAGANANG Anihan</td>
<td>- Increasing seaweed productivity through improved farming technologies of various seaweed species, adoption of climate resilient grow-out technologies and expansion in new production areas</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Component 2: Mas SIGLANG Samahan</td>
<td>- Capacitating seaweed farmers to become entrepreneurs through formation of cooperatives and improved marketing linkages</td>
<td>Those identified by BFAR during its yearly planning sessions/ 2017</td>
<td>DA-BFAR</td>
</tr>
<tr>
<td>Component 3: Mas SAGANANG SAMA-SAKANG KALAKAL</td>
<td>- Promoting community-based PRODUCT CHAMPIONS showcasing value-added products made from seaweeds and land-based produce</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Note: The project titles and components listed above are taken from the existing National Seaweed Development Program 2017-2022</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GUSO-Philippines GIS for Upscaling Seaweed</td>
<td>DOST-funded project which applied the use of GIS in gathering/developing data and information related to seaweed in the Philippines. This data will be stored in one repository where intended beneficiaries, such as policy makers and seaweed farmers can access to it.</td>
<td>Research institutions, academe, LGUs, Government sectors, Seaweed Farmers and traders and all industry stakeholders/ 2016</td>
<td>Xavier University, MSU-Naawan, SPAMAST</td>
</tr>
<tr>
<td>Operations in the Philippines</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Program</td>
<td>Description</td>
<td>Beneficiary/ Year Implemented</td>
<td>Implementing Agency</td>
</tr>
<tr>
<td>---------</td>
<td>-------------</td>
<td>-------------------------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>2015 ARMM-Health, Education, Livelihood, Peace and Governance and Synergy (ARMM-HELPS) Project</td>
<td>A regional government convergence project that address development through an integrated delivery of services in respective areas in close coordination with stakeholders at the provincial, municipal and barangay levels</td>
<td>The identified barangay LGUs and its residents-beneficiaries/ 2016</td>
<td>Autonomous Regional Government and Line Agencies</td>
</tr>
</tbody>
</table>

**Industry Needs and Investment Opportunities**

<table>
<thead>
<tr>
<th>Inputs</th>
<th>Establishment of Nurseries</th>
<th>Provision of motorized and non-motorized Banca</th>
<th>Seaweed Farm Implements</th>
<th>Provision of Seedlings</th>
<th>Capital support and financing windows</th>
</tr>
</thead>
</table>

- **Production**
  - Provision of Solar dryer
  - Provision of Warehouse
  - Provision of Baling Machine

- **Processing/transformation**
  - Food processing center for seaweed-based food products
  - New technology
  - Establishment of processing plant (for semi and refined-carrageenan)

- **Marketing**
  - Market agreement to ensure price stability

- **Logistic and Infra Support**
  - Transport system to serve from municipal port to commercial and market destinations (both at the provincial and regional centers)
Economics of the Six Clustered Industries in ARMM

Abaca Industry

**Investment Cost**

<table>
<thead>
<tr>
<th>Cost (PHP) Per Hectare at 1,600 Hills (2.5m X 2.5m)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Establishment Cost:</strong></td>
<td></td>
</tr>
<tr>
<td>Land Preparation (Clearing and Plowing)</td>
<td>5,000.00</td>
</tr>
<tr>
<td>Lay-outing</td>
<td>1,000.00</td>
</tr>
<tr>
<td>Planting</td>
<td>4,800.00</td>
</tr>
<tr>
<td>Planting Material including delivery at P25/pc</td>
<td>40,000.00</td>
</tr>
<tr>
<td><strong>Sub-Total</strong></td>
<td>50,800.00</td>
</tr>
</tbody>
</table>

**Maintenance Cost (PHP) Per Year:**

<table>
<thead>
<tr>
<th>Maintenance Cost (as necessary)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Weeding (2,000/ha/quarter)</td>
<td>8,000.00</td>
</tr>
<tr>
<td>Fertilizer Applications (as necessary)</td>
<td>500.00</td>
</tr>
<tr>
<td>Pesticide (as necessary)</td>
<td>500.00</td>
</tr>
<tr>
<td>Fertilizer (12bags) (as necessary)</td>
<td>14,400.00</td>
</tr>
<tr>
<td><strong>Sub-Total</strong></td>
<td>23,400.00</td>
</tr>
</tbody>
</table>

After two (2) years, the abaca plant is ready for harvest. In the succeeding years, harvesting is done thrice (3) a year for 10 years.

**Income Statement Per Hectare for Year 2 (First Harvest) (Unit: PHP)**

<table>
<thead>
<tr>
<th>Conforme</th>
<th>HAND STRIPPED</th>
<th>SPINDLE STRIPPED</th>
<th>DECORTICATED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dry Yield of Fiber (1st Harvest-Year 2) in Kg</td>
<td>800</td>
<td>800</td>
<td>1,200</td>
</tr>
<tr>
<td>Price Per Kg</td>
<td>70.00</td>
<td>70.00</td>
<td>50.00</td>
</tr>
<tr>
<td>Gross Income</td>
<td>56,000.00</td>
<td>56,000.00</td>
<td>60,000.00</td>
</tr>
<tr>
<td>Less: Labor Cost (60%)</td>
<td>33,600.00</td>
<td>33,600.00</td>
<td>36,000.00</td>
</tr>
<tr>
<td>Less: Establishment &amp; Maintenance Cost</td>
<td>74,200.00</td>
<td>74,200.00</td>
<td>74,200.00</td>
</tr>
<tr>
<td>Net Income (Loss)</td>
<td>-51,800.00</td>
<td>-51,800.00</td>
<td>-50,200.00</td>
</tr>
</tbody>
</table>

**Income Statement Per Hectare for Year 3 (3 Harvests Per Year) (Unit: PHP)**

<table>
<thead>
<tr>
<th>PARTICULARS</th>
<th>HAND STRIPPED</th>
<th>SPINDLE STRIPPED</th>
<th>DECORTICATED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dry Yield of Fiber (1st Harvest-Year 2) in Kg</td>
<td>4,800</td>
<td>4,800</td>
<td>7,200</td>
</tr>
<tr>
<td>Price Per Kg</td>
<td>70</td>
<td>70</td>
<td>50</td>
</tr>
<tr>
<td>Gross Income</td>
<td>336,000</td>
<td>336,000</td>
<td>360,000</td>
</tr>
<tr>
<td>Less: Labor Cost (60%)</td>
<td>201,600</td>
<td>201,600</td>
<td>216,000</td>
</tr>
<tr>
<td>Less: Maintenance Cost</td>
<td>23,400</td>
<td>23,400</td>
<td>23,400</td>
</tr>
<tr>
<td>Less: Year 2 deficit</td>
<td>51,800.00</td>
<td>51,800.00</td>
<td>50,200.00</td>
</tr>
<tr>
<td>Net Income</td>
<td>59,200.00</td>
<td>59,200.00</td>
<td>70,400.00</td>
</tr>
</tbody>
</table>
Return of Investment Per Year (ROI) for a Hectare of Abaca Plantation

i. Handstrip/Spindle

<table>
<thead>
<tr>
<th>YEAR</th>
<th>Net Income</th>
<th>Expenses</th>
<th>ROI</th>
</tr>
</thead>
<tbody>
<tr>
<td>YEAR 2</td>
<td>-51,800</td>
<td>74,200</td>
<td>-</td>
</tr>
<tr>
<td>YEAR 3</td>
<td>59,200.00</td>
<td>23,400</td>
<td>253 %</td>
</tr>
<tr>
<td>YEAR 4</td>
<td>59,200.00</td>
<td>23,400</td>
<td>253 %</td>
</tr>
<tr>
<td>YEAR 5</td>
<td>59,200.00</td>
<td>23,400</td>
<td>253 %</td>
</tr>
<tr>
<td>YEAR 6</td>
<td>59,200.00</td>
<td>23,400</td>
<td>253 %</td>
</tr>
<tr>
<td>YEAR 7</td>
<td>59,200.00</td>
<td>23,400</td>
<td>253 %</td>
</tr>
<tr>
<td>YEAR 8</td>
<td>59,200.00</td>
<td>23,400</td>
<td>253 %</td>
</tr>
<tr>
<td>YEAR 9</td>
<td>59,200.00</td>
<td>23,400</td>
<td>253 %</td>
</tr>
<tr>
<td>YEAR 10</td>
<td>59,200.00</td>
<td>23,400</td>
<td>253 %</td>
</tr>
<tr>
<td>TOTAL</td>
<td>421,800.00</td>
<td>261,400.00</td>
<td>161 %</td>
</tr>
</tbody>
</table>

ii. With the use of a Decorticating Machine

<table>
<thead>
<tr>
<th>YEAR</th>
<th>Net Income</th>
<th>Expenses</th>
<th>ROI</th>
</tr>
</thead>
<tbody>
<tr>
<td>YEAR 2</td>
<td>-50,200.00</td>
<td>74,200</td>
<td>-</td>
</tr>
<tr>
<td>YEAR 3</td>
<td>70,400.00</td>
<td>23,400</td>
<td>300 %</td>
</tr>
<tr>
<td>YEAR 4</td>
<td>70,400.00</td>
<td>23,400</td>
<td>300 %</td>
</tr>
<tr>
<td>YEAR 5</td>
<td>70,400.00</td>
<td>23,400</td>
<td>300 %</td>
</tr>
<tr>
<td>YEAR 6</td>
<td>70,400.00</td>
<td>23,400</td>
<td>300 %</td>
</tr>
<tr>
<td>YEAR 7</td>
<td>70,400.00</td>
<td>23,400</td>
<td>300 %</td>
</tr>
<tr>
<td>YEAR 8</td>
<td>70,400.00</td>
<td>23,400</td>
<td>300 %</td>
</tr>
<tr>
<td>YEAR 9</td>
<td>70,400.00</td>
<td>23,400</td>
<td>300 %</td>
</tr>
<tr>
<td>YEAR 10</td>
<td>70,400.00</td>
<td>23,400</td>
<td>300 %</td>
</tr>
<tr>
<td>TOTAL</td>
<td>513,000.00</td>
<td>261,400.00</td>
<td>196 %</td>
</tr>
</tbody>
</table>

Income in using Decorticating machine is better than spindle or hand-stripped because of the volume of fiber a farmer can extract from an abaca plant. By using decorticating machine, around 1.5 times more volume of fibers could be extracted comparing to spindle or hand-stripped.

Coconut Industry

Investment Cost and Returns for a Hectare of Coconuts in ARMM CY 2018

<table>
<thead>
<tr>
<th>Year</th>
<th>Copra Yield (kg/ha)</th>
<th>Gross Income (Php)</th>
<th>Total Cost (Php)</th>
<th>Net Benefit/Loss (Php)</th>
<th>Benefit Cost Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>-</td>
<td>-</td>
<td>17,148.00</td>
<td>(17,148)</td>
<td>-1</td>
</tr>
<tr>
<td>2</td>
<td>-</td>
<td>-</td>
<td>13,121.00</td>
<td>(13,121)</td>
<td>-1</td>
</tr>
<tr>
<td>3</td>
<td>-</td>
<td>-</td>
<td>15,294.00</td>
<td>(15,294)</td>
<td>-1</td>
</tr>
<tr>
<td>4</td>
<td>360</td>
<td>7,200.00</td>
<td>20,328.00</td>
<td>(13,128)</td>
<td>-1</td>
</tr>
<tr>
<td>5</td>
<td>536</td>
<td>10,720.00</td>
<td>20,328.00</td>
<td>(9,608)</td>
<td>0</td>
</tr>
<tr>
<td>6</td>
<td>894</td>
<td>17,880.00</td>
<td>20,328.00</td>
<td>(2,448)</td>
<td>0</td>
</tr>
<tr>
<td>7</td>
<td>1,360</td>
<td>27,200.00</td>
<td>20,328.00</td>
<td>(6,153)</td>
<td>0</td>
</tr>
<tr>
<td>8</td>
<td>2,037</td>
<td>40,740.00</td>
<td>20,328.00</td>
<td>(9,373)</td>
<td>0</td>
</tr>
<tr>
<td>9</td>
<td>3,038</td>
<td>60,760.00</td>
<td>20,328.00</td>
<td>11,644</td>
<td>0.57</td>
</tr>
<tr>
<td>10</td>
<td>3,575</td>
<td>71,500.00</td>
<td>20,328.00</td>
<td>51,172.00</td>
<td>2.52</td>
</tr>
</tbody>
</table>
Assumptions in the above computation:

- 143 coconut trees in a hectare
- Average Annual Yield per tree= 100 nuts
- Selling Price of Copra=P 20.00/kg
- Nut to copra conversion rate= 4 nuts/kg of copra

COSTS
1. Harvesting and copra production= P 0.33/kg of copra
2. Transport and handling of copra= P 0.20/kg of copra
3. Input Costs:
   3a. 150 dwarf seedlings at P 40.00/seedling= P 6,000.00
   3b. Fertilizer per year

<table>
<thead>
<tr>
<th>Year</th>
<th>Ammonium Sulfate</th>
<th>Potassium Chloride</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Volume in bags</td>
<td>Cost (Php)</td>
<td>Volume in bags</td>
</tr>
<tr>
<td>1</td>
<td>1.43</td>
<td>1,144.00</td>
<td>1.71</td>
</tr>
<tr>
<td>2</td>
<td>2.15</td>
<td>1,716.00</td>
<td>2.57</td>
</tr>
<tr>
<td>3</td>
<td>2.86</td>
<td>2,288.00</td>
<td>3.43</td>
</tr>
<tr>
<td>4 to 50</td>
<td>4.29</td>
<td>3,432.00</td>
<td>5.72</td>
</tr>
</tbody>
</table>

4. Labor Costs

<table>
<thead>
<tr>
<th>Year</th>
<th>Activities</th>
<th>No. of Man Days</th>
<th>Labor Cost @ P 200.00/Man Day (Php)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>• Clearing, • Holing, planting and basal application of fertilizer • Ringweeding every two months</td>
<td>10</td>
<td>2,000.00</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10</td>
<td>2,000.00</td>
</tr>
<tr>
<td></td>
<td></td>
<td>14</td>
<td>2,800.00</td>
</tr>
<tr>
<td></td>
<td>SUBTOTAL</td>
<td></td>
<td>6,800.00</td>
</tr>
<tr>
<td>2 TO 60</td>
<td>• Ringweeding every two months • Fertilizer application, twice a year • Slashing/underbrushing 3x/year</td>
<td>14</td>
<td>2,800.00</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10</td>
<td>2,000.00</td>
</tr>
<tr>
<td></td>
<td></td>
<td>9</td>
<td>1,800.00</td>
</tr>
<tr>
<td></td>
<td>SUBTOTAL</td>
<td></td>
<td>6,600.00</td>
</tr>
<tr>
<td></td>
<td>TOTAL</td>
<td></td>
<td>13,400.00</td>
</tr>
</tbody>
</table>

To maximize income from copra alone, below are the computations of other potential source of income from coconut by-products through value addition.

(Source: Assumptions are from presentation made by Mr. Migdonio Clamor, Jr., Executive Director, Cocolink, Inc. During DTI-ARMM TNKK Summit last Oct. 11, 2018 in Cotabato City)
## Coffee Industry

### COST AND RETURN ANALYSIS OF ROBUSTA COFFEE PRODUCTION IN ONE (1) HECTARE AREA

<table>
<thead>
<tr>
<th>ITEM</th>
<th>Unit</th>
<th>Unit Cost (Php)</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
<th>Year 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gross Income: Sales of Green Coffee Beans</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Expenses:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Labor: Clearing/Brushing/Contouring</td>
<td>sq.m.</td>
<td>0.30</td>
<td>10,000</td>
<td>3,000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Field Layout/Staking</td>
<td>md</td>
<td>300</td>
<td>6</td>
<td>1,800</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Basal Fertilization and Transplanting</td>
<td>md</td>
<td>300</td>
<td>7.25</td>
<td>1,450</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Replanting (5%)</td>
<td>md</td>
<td>300.00</td>
<td>2.5</td>
<td>500</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ringweeding/Underbrushing (2-4x)</td>
<td>tree</td>
<td>1.50</td>
<td>6,668</td>
<td>10,002</td>
<td>6,668</td>
<td>10,002</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sidedress Fertilization (2x)</td>
<td>tree</td>
<td>1.25</td>
<td>3,334</td>
<td>4,168</td>
<td>3,334</td>
<td>4,168</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Foliar Fertilizer Spraying (4x)</td>
<td>md</td>
<td>300</td>
<td>8</td>
<td>2,400</td>
<td>8</td>
<td>2,400</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bio-Pest Control (4x Spraying)</td>
<td>md</td>
<td>300</td>
<td>8</td>
<td>2,400</td>
<td>8</td>
<td>2,400</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bending/Training of Coffee Multiples</td>
<td>hill</td>
<td>0.50</td>
<td>1,667</td>
<td>834</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pruning (Formative/Phytosanitary)</td>
<td>md</td>
<td>300</td>
<td>0</td>
<td>3</td>
<td>900</td>
<td>5</td>
<td>1,500</td>
<td>6.0</td>
</tr>
<tr>
<td>Harvesting</td>
<td>md</td>
<td>300</td>
<td>0</td>
<td>7</td>
<td>2,100</td>
<td>15</td>
<td>4,500</td>
<td>20</td>
</tr>
<tr>
<td>Floating/Drying (Dry Processing)</td>
<td>md</td>
<td>300</td>
<td>0</td>
<td>2</td>
<td>600</td>
<td>5</td>
<td>1,000</td>
<td>10.0</td>
</tr>
<tr>
<td>Drying, Dehulling, Cleaning and Bagging</td>
<td>md</td>
<td>300</td>
<td>0</td>
<td>1</td>
<td>300</td>
<td>3</td>
<td>550</td>
<td>8</td>
</tr>
<tr>
<td>Sub-Total</td>
<td></td>
<td></td>
<td>31,555</td>
<td>22,870</td>
<td>21,519</td>
<td>26,169</td>
<td>27,769</td>
<td>34,469</td>
</tr>
<tr>
<td>Inputs: Stakes</td>
<td>pc</td>
<td>0.25</td>
<td>1,667</td>
<td>417</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Planting Materials: Coffee Seedlings</td>
<td>pc</td>
<td>25</td>
<td>1,667</td>
<td>41,675</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Organic Fertilizer (0.5kg/hill), 834 kg</td>
<td>kg</td>
<td>7</td>
<td>5,838</td>
<td>2,940</td>
<td>1,667</td>
<td>11,669</td>
<td>3,334</td>
<td>23,338</td>
</tr>
<tr>
<td>Foliar (Organic) Fertilizer (Based on leaf analysis)</td>
<td>liter</td>
<td>250</td>
<td>4</td>
<td>1,000</td>
<td>4</td>
<td>1,000</td>
<td>8.0</td>
<td>2,000</td>
</tr>
<tr>
<td>Bio-Control repellants</td>
<td>liter</td>
<td>150</td>
<td>3</td>
<td>450</td>
<td>3</td>
<td>450</td>
<td>6</td>
<td>900</td>
</tr>
<tr>
<td>Pruning Shear</td>
<td>pc</td>
<td>250</td>
<td></td>
<td>1</td>
<td>250</td>
<td>3</td>
<td>750</td>
<td></td>
</tr>
<tr>
<td>Knapsack Sprayer</td>
<td>unit</td>
<td>2,700</td>
<td>1</td>
<td>2,700</td>
<td>1</td>
<td>2,700</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plastic Container for Harvesting</td>
<td>pc</td>
<td>50</td>
<td></td>
<td>3</td>
<td>150</td>
<td>3</td>
<td>150</td>
<td>3</td>
</tr>
<tr>
<td>Drying Trays</td>
<td>pc</td>
<td>300</td>
<td></td>
<td>2</td>
<td>600</td>
<td>3</td>
<td>900</td>
<td>3</td>
</tr>
<tr>
<td>Jute Bags for Storing Coffee Berries</td>
<td>pc</td>
<td>50</td>
<td></td>
<td>5</td>
<td>250.00</td>
<td>6</td>
<td>300</td>
<td>3</td>
</tr>
<tr>
<td>Sub-Total</td>
<td></td>
<td></td>
<td>49,182</td>
<td>17,069</td>
<td>28,338</td>
<td>27,438</td>
<td>27,138</td>
<td>27,934</td>
</tr>
<tr>
<td>Net Income</td>
<td></td>
<td></td>
<td>-80,736</td>
<td>-4,939</td>
<td>33,543</td>
<td>71,393</td>
<td>111,793</td>
<td>104,297</td>
</tr>
<tr>
<td>Cumulative Net Income</td>
<td></td>
<td></td>
<td>-80,736</td>
<td>-14,307</td>
<td>19,236</td>
<td>90,629</td>
<td>202,422</td>
<td>306,719</td>
</tr>
</tbody>
</table>

Source: 2017-2022 Philippines Coffee Industry Roadmap
Oil Palm Industry

Basic Facts about Oil Palm

<table>
<thead>
<tr>
<th><strong>Botanical name</strong></th>
<th><em>Elaeis guineensis</em> Jacq.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Common Name</strong></td>
<td>African oil palm</td>
</tr>
<tr>
<td><strong>Species</strong></td>
<td>Tenera (Dura x Pisifera)</td>
</tr>
<tr>
<td><strong>Plant height</strong></td>
<td>20-30 m</td>
</tr>
<tr>
<td><strong>Trunk circumference</strong></td>
<td>350- 400 cm</td>
</tr>
<tr>
<td><strong>Fruond production</strong></td>
<td>24-30 per year</td>
</tr>
<tr>
<td><strong>Fruond length</strong></td>
<td>6 - 8 m</td>
</tr>
<tr>
<td><strong>Leaf color</strong></td>
<td>Green</td>
</tr>
<tr>
<td><strong>Ripe fruit color</strong></td>
<td>Reddish-orange</td>
</tr>
<tr>
<td><strong>Nursery period</strong></td>
<td>8 - 12 months</td>
</tr>
<tr>
<td><strong>Age of harvesting after field planting</strong></td>
<td>30 months</td>
</tr>
<tr>
<td><strong>Harvesting intervals</strong></td>
<td>10-15 days</td>
</tr>
<tr>
<td><strong>Number of bunches per palm</strong></td>
<td>10-12</td>
</tr>
<tr>
<td><strong>Average bunch weight ( 8 yrs &amp; above)</strong></td>
<td>10-25 kg.</td>
</tr>
<tr>
<td><strong>Average number of fruitlets per bunch</strong></td>
<td>1,000</td>
</tr>
<tr>
<td><strong>Yield per year (fresh fruit bunches)</strong></td>
<td>18-25 metric tons per hectare</td>
</tr>
<tr>
<td><strong>Shape of fruitlets</strong></td>
<td>Spherical to oval</td>
</tr>
<tr>
<td><strong>Kernel per bunch (fruit)</strong></td>
<td>3 – 4.5%</td>
</tr>
<tr>
<td><strong>Oil per bunch (fruit)</strong></td>
<td>18 – 25%</td>
</tr>
<tr>
<td><strong>Oil per Mesocarp</strong></td>
<td>20 – 50%</td>
</tr>
<tr>
<td><strong>Average crude oil yield</strong></td>
<td>4.2 MT/hectare/year</td>
</tr>
<tr>
<td><strong>Average palm kernel oil yield</strong></td>
<td>300 – 350 kg/hectare/year</td>
</tr>
<tr>
<td><strong>Plating density</strong></td>
<td>128 – 142 palms per hectare</td>
</tr>
<tr>
<td><strong>Economic life</strong></td>
<td>25– 30 years</td>
</tr>
</tbody>
</table>

*Source: Oil Palm Industry Roadmap 2014-2023*

Investment Cost and Return

**Investment Cost in a 1-hectare Oil Palm Plantation**

<table>
<thead>
<tr>
<th>Year</th>
<th>Items</th>
<th>Cost (Php)</th>
<th>Share</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Planting Materials</td>
<td>32,500</td>
<td>30%</td>
</tr>
<tr>
<td>1st to 3rd Year</td>
<td>Fertilizer</td>
<td>50,000</td>
<td>45%</td>
</tr>
<tr>
<td></td>
<td>Labor</td>
<td>24,000</td>
<td>22%</td>
</tr>
<tr>
<td></td>
<td>Other Supplies</td>
<td>3,500</td>
<td>3%</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>110,000</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

**Income from 1-hectare Oil Palm Production**

<table>
<thead>
<tr>
<th>Year</th>
<th>Measure</th>
<th>Production Volume (MT/hectare) based on Area Suitability Level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>High</td>
</tr>
<tr>
<td>3rd to 5th Year</td>
<td>Production (MT)</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>Price per Ton (Php)</td>
<td>5,000</td>
</tr>
<tr>
<td></td>
<td>Gross Income (Php)</td>
<td>250,000</td>
</tr>
<tr>
<td>6th to 25th Year</td>
<td>Production (MT)</td>
<td>600</td>
</tr>
<tr>
<td></td>
<td>Price per Ton (Php)</td>
<td>5,000</td>
</tr>
<tr>
<td></td>
<td>Gross Income (Php)</td>
<td>3,000,000</td>
</tr>
<tr>
<td><strong>Annual Net Income 6th to 25th Year</strong></td>
<td><strong>116,000</strong></td>
<td><strong>100,000</strong></td>
</tr>
</tbody>
</table>
The Philippine Palm Oil Development Council Inc. (PPDCI) estimated that the establishment and cost of maintaining a 1-hectare farm for oil palm in the first three (3) years is about 110,000 pesos for fertilizer (45%), labor (22%), and planting materials (30%). From 6th to 25th year, the annual average expense for labor and fertilizer is 18,000 to 34,000 pesos.

In terms of profitability, oil palm farmers may recover their investments after five (5) years and continue to harvest every ten (10) to fifteen (15) days in thirty (30) years. The computation will vary depending on the quality of the plant seedlings of oil palm. The income for a 1-hectare farm ranges from 2 to 3 million for a period of 20 years. This figure can be further translated into annual income of 69,000 pesos for low yield, 100,000 pesos for medium yield, and 116,000 for high yield plantation.

In addition, the benefit from oil palm plantation can be augmented through intercropping of mung bean and corn in the first 3 years or during the gestation period. Once fully established, oil palm can provide stable income to investors/farmers. A farmer may also continue to implement intercropping of cacao, coffee, and other crops.

**Rubber Industry**

**Year 1 to Year 4**

<table>
<thead>
<tr>
<th>Establishment Cost for 1 hectare</th>
<th>Materials</th>
<th>Quantity</th>
<th>Unit Cost</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seedlings</td>
<td>500 pcs</td>
<td>35.00</td>
<td>17,500.00</td>
<td></td>
</tr>
<tr>
<td>Round-up (Pesticide)</td>
<td>8 liters</td>
<td>350.00</td>
<td>2,800.00</td>
<td></td>
</tr>
<tr>
<td>Fertilizer (14-14-14)</td>
<td>9 bags</td>
<td>1,400.00</td>
<td>12,600.00</td>
<td></td>
</tr>
<tr>
<td>Spray</td>
<td>1 pc</td>
<td>3,000.00</td>
<td>3,000.00</td>
<td></td>
</tr>
<tr>
<td>Labor</td>
<td>1 worker</td>
<td>150/day</td>
<td>54,000.00</td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL COST OF INVESTMENT FOR THE FIRST YEAR</strong></td>
<td></td>
<td></td>
<td><strong>PhP 89,900.00</strong></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year 5</th>
<th>Harvesting Materials Cost for 1 hectare</th>
</tr>
</thead>
<tbody>
<tr>
<td>Materials</td>
<td>Quantity</td>
</tr>
<tr>
<td>Tapping Knife</td>
<td>1 pc</td>
</tr>
<tr>
<td>Collecting cups (for latex)</td>
<td>500 pcs</td>
</tr>
<tr>
<td>Banyera (Coagulating tank)</td>
<td>10 pcs</td>
</tr>
<tr>
<td>Pail</td>
<td>2 pcs</td>
</tr>
<tr>
<td>Tie Wire #12</td>
<td>20 kg</td>
</tr>
<tr>
<td>Spout</td>
<td>500 pcs</td>
</tr>
<tr>
<td><strong>TOTAL COST OF INVESTMENT</strong></td>
<td></td>
</tr>
</tbody>
</table>

**FARM PRODUCTION AND CONVERSION**

| Daily latex production       | 40 liters/ha/tapping day |
| Tapping days per month       | 15 days                  |
| Monthly latex production     | 600 liters               |
| Conversion of latex to cuplump (50%) | 300 kg cuplamp/ha/month |
| Collection of scrap/cuplump after latex collection | 30 kg/ha/month |
| Price of cuplump/scrap       | PhP 24.00/kg             |
| Price of dry rubber sheet    | PhP 57.00/kg             |
| Maintenance cost/ha/month    | PhP 1,170                |
| Processing cost              | PhP 6.00/kg of dry rubber|
| Tapper’s share               | 30%                      |
| Final Stand of Productive trees | 350 trees/ha            |
The first 4 to 5 years of rubber trees are in the immature phase and 6 to 25 years are productive, this is the stage where the yield of latex is high. When it reaches more than 25 years, the latex collection slows down until it reaches 30 years and above. The average life span of rubber tree is 30 years if standard tapping is being practiced.

Hot season also contributes to the slowdown of latex collection.

Seaweed Industry

Note: The information is generic and may be applicable to all areas engaged in seaweed farming. However, variables may differ depending on the price of planting materials vis-a-vis market price of the product (raw dried seaweed) in a given area/ region.

Investment Cost

<table>
<thead>
<tr>
<th>MATERIAL/DESCRIPTION</th>
<th>QTY.</th>
<th>UNIT COST</th>
<th>COST (Php)</th>
<th>QTY.</th>
<th>UNIT COST</th>
<th>COST (Php)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seedlings</td>
<td>2,560</td>
<td>8</td>
<td>20,480</td>
<td>5,000</td>
<td>8</td>
<td>40,000</td>
</tr>
<tr>
<td>Concrete blocks 30Kg each for anchor</td>
<td>20 pcs</td>
<td>200</td>
<td>4,000</td>
<td>100pcs</td>
<td>5</td>
<td>500</td>
</tr>
<tr>
<td>Rope #14 (for Main support)</td>
<td>3 rolls</td>
<td>785</td>
<td>2,355</td>
<td>2 rolls</td>
<td>785</td>
<td>1,570</td>
</tr>
<tr>
<td>Rope #6 (for longline)</td>
<td>10 rolls</td>
<td>200</td>
<td>2,000</td>
<td>10 rolls</td>
<td>200</td>
<td>2,000</td>
</tr>
<tr>
<td>Rope # 4 (for floaters)</td>
<td>2 rolls</td>
<td>105</td>
<td>210</td>
<td>15 rolls</td>
<td>150</td>
<td>2,250</td>
</tr>
<tr>
<td>Plastic twine (soft type for tie-tie)</td>
<td>10 rolls</td>
<td>150</td>
<td>1,500</td>
<td>1 pc</td>
<td>500</td>
<td>500</td>
</tr>
<tr>
<td>Floats (plastic bottles, styropor balls)</td>
<td>25 pcs</td>
<td>30</td>
<td>750</td>
<td>1 pc</td>
<td>300</td>
<td>300</td>
</tr>
<tr>
<td>Cutting Knife (for seedlings)</td>
<td>5 pcs</td>
<td>25</td>
<td>125</td>
<td>5 pcs</td>
<td>25</td>
<td>125</td>
</tr>
<tr>
<td>Seedling baskets/containers</td>
<td>3 pcs</td>
<td>100</td>
<td>300</td>
<td>3 pcs</td>
<td>100</td>
<td>300</td>
</tr>
<tr>
<td>Diving goggles/mask</td>
<td>2 pcs</td>
<td>300</td>
<td>600</td>
<td>2 pcs</td>
<td>300</td>
<td>600</td>
</tr>
<tr>
<td>Motorized banca/boat (capacity: 1,000kg)</td>
<td>1 unit</td>
<td></td>
<td></td>
<td>1 unit</td>
<td></td>
<td>50,000</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>82,320</strong></td>
<td><strong>98,145</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
# Productivity of Seaweed (Cottonii) Farm by method used (½ Hectare)

<table>
<thead>
<tr>
<th>Particular</th>
<th>Floating Method</th>
<th>Fixed-off Bottom Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of Monolines of 6.5-meter length</td>
<td>800</td>
<td>1,250</td>
</tr>
<tr>
<td>No. of plants per line</td>
<td>45</td>
<td>45</td>
</tr>
<tr>
<td>Weight of seedlings</td>
<td>80 grams</td>
<td>60 grams</td>
</tr>
<tr>
<td>Average Daily Growth Rate (%)</td>
<td>5%</td>
<td>5%</td>
</tr>
<tr>
<td>Days of Culture</td>
<td>45-60</td>
<td>45-60</td>
</tr>
<tr>
<td>Losses on breakage, grazing, diseases</td>
<td>20%</td>
<td>20%</td>
</tr>
<tr>
<td>Average weight of plants upon harvest</td>
<td>256 grams</td>
<td>256 grams</td>
</tr>
<tr>
<td>Total Fresh weight Production</td>
<td>9,216 kg</td>
<td>14,400 kg</td>
</tr>
<tr>
<td>Seedling allocation for succeeding cropping</td>
<td>2,560 kg</td>
<td>5,000 kg</td>
</tr>
<tr>
<td>Total Weight for drying</td>
<td>6,656 kg</td>
<td>9,400 kg</td>
</tr>
<tr>
<td>Ration of Fresh to Dry at 38% Moisture Content</td>
<td>7:1</td>
<td>7:1</td>
</tr>
<tr>
<td>Total Dry Weight Production</td>
<td>951 kg</td>
<td>1,343 kg</td>
</tr>
</tbody>
</table>

Source: SIAP/R. Simbajon/Seaweed Producers Cooperative, Tongsibalo, Sibutu/ A. Nahul

## Return of Investment

<table>
<thead>
<tr>
<th>ITEM</th>
<th>FLOATING METHOD</th>
<th>FIXED-OFF BOTTOM METHOD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales of Harvest</td>
<td>309,075.00</td>
<td>436,475.00</td>
</tr>
<tr>
<td>Initial Investment Cost/Materials</td>
<td>82,320.00</td>
<td>98,145.00</td>
</tr>
<tr>
<td>Labor (seedlings: cutting and tying; tying to monolines @ P5.50/monoline)</td>
<td>22,000.00</td>
<td>34,375.00</td>
</tr>
<tr>
<td>Maintenance Cost</td>
<td>25,000.00</td>
<td>30,000.00</td>
</tr>
<tr>
<td>Total Cost</td>
<td>129,320.00</td>
<td>162,520.00</td>
</tr>
<tr>
<td>Annual Net Profit</td>
<td>179,755.00</td>
<td>273,955.00</td>
</tr>
<tr>
<td>Return of Investment (ROI)</td>
<td>139%</td>
<td>168%</td>
</tr>
<tr>
<td>Gestation Period</td>
<td>45-60 days</td>
<td>45-60 days</td>
</tr>
</tbody>
</table>

Assumptions:
- Annual production at 5 croppings per year
- Average farmgate price of Php 65 per kilo as of January-March 2018
### List of Technical Manuals on the Clustered Industries

#### A. Abaca Industry

<table>
<thead>
<tr>
<th>Title of Manual/Handbook/Publications</th>
<th>Author/Publisher/Sponsor</th>
<th>Source/Link</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abaca Techno-Guide</td>
<td>PhilFIDA</td>
<td><a href="http://www.philfida.da.go.ph">www.philfida.da.go.ph</a> email to <a href="mailto:esd.fida@yahoo.co">esd.fida@yahoo.co</a></td>
</tr>
<tr>
<td>Actual Farmer’s Field and abaca Technoguide, The Philippine Abaca Industry Roadmap 2014-2020</td>
<td>PhilFIDA</td>
<td><a href="http://www.philfida.da.go.ph">www.philfida.da.go.ph</a> email to <a href="mailto:esd.fida@yahoo.co">esd.fida@yahoo.co</a></td>
</tr>
<tr>
<td>Abaca Sustainability Manual</td>
<td>PhilFIDA</td>
<td>3rd Floor, PCAF Building Department of Agriculture Diliman, Quezon City</td>
</tr>
</tbody>
</table>

#### B. Coconut Industry

<table>
<thead>
<tr>
<th>Title of Manual/Handbook/Publications</th>
<th>Author/Publisher/Sponsor</th>
<th>Source/Link</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coconut Check</td>
<td>Cocolink in Davao City</td>
<td><a href="http://cocolinkph.org/know-your-coconut">http://cocolinkph.org/know-your-coconut</a></td>
</tr>
<tr>
<td>Other manuals</td>
<td>Philippine Coconut Authority</td>
<td>Respective Region/Province</td>
</tr>
</tbody>
</table>

#### C. Coffee Industry

<table>
<thead>
<tr>
<th>Title of Manual/Handbook/Publications</th>
<th>Source/Link</th>
</tr>
</thead>
<tbody>
<tr>
<td>Code of Good Agricultural Practices (GAP) for Coffee</td>
<td>Code of Good Agricultural Practices (GAP) for Coffee 1</td>
</tr>
</tbody>
</table>

#### D. Oil Palm Industry

Technical Manuals on Oil Palm production is available at Department of Trade and Industry-BARMM. You can also contact Philippine Palm Oil Development Council, Inc. (PPDCI) through their Facebook page for technical trainings and industry news updates: https://www.facebook.com/ppdci/.

#### E. Rubber Industry

<table>
<thead>
<tr>
<th>Title of Manual/Handbook/Publications</th>
<th>Author/Publisher/Sponsor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nursery Management, Production Technology and Integrated Farming System Manual (AICCEP)</td>
<td>DTI-ARMM Basilan and City Agriculture Office of Lamitan City</td>
</tr>
<tr>
<td>Rubber Production Manual</td>
<td>DTI-ARMM, JICA</td>
</tr>
</tbody>
</table>
### F. Seaweed Industry

<table>
<thead>
<tr>
<th>Title of Manual/ Handbook/ Publications</th>
<th>Author/ Publisher/ Sponsor</th>
<th>Source/ Link</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic Manual - Seaweed Farming, Post-Harvest Improvement and Marketing</td>
<td>Capacity Building for Community Development in Conflict-Affected Areas in Mindanao (CD-CAAM, JICA)</td>
<td>Ministry of Agriculture, Fisheries, and Agrarian Reform ORG Compound, Cotabato City Bangsamoro Development Agency Diversion Road, Purok Islam, Brgy. Datu Balabaran (MB Tamontaka), Cotabato City</td>
</tr>
<tr>
<td>The farming of the seaweed Kappaphycus</td>
<td>Hurtado, A. Q., &amp; Agbayani, R. F./ Aquaculture Department, Southeast Asian Fisheries Development Center</td>
<td><a href="https://repository.seafdec.org.ph/handle/10862/2402">https://repository.seafdec.org.ph/handle/10862/2402</a></td>
</tr>
<tr>
<td>Name of Office/Address/Contact details</td>
<td>Type of Certification, Application, Accreditation</td>
<td>Requirements</td>
</tr>
<tr>
<td>----------------------------------------</td>
<td>-----------------------------------------------</td>
<td>--------------</td>
</tr>
</tbody>
</table>
| Department of Trade and Industry-ARMM | Business Name Registration (BNR) For Proprietorship | 1. Applicants must be a Filipino citizen and 18 years old and above.  
2. Prepared with a list of business names. (at least 3 Business)  
3. Filled up BNR form Fees apply depending on the scope of your business:  
Barangay – Php 200; City/Municipality – Php 500; Regional – Php 1,000; and National – Php 2,000.  
(Note that some businesses, such as services, brokers, dental clinics, hospitals, may need other requirements.) |
| Frontline Services available at Provincial Offices:  
DTI-Maguindanao  
DTI-Lanao del Sur  
DTI-Basilan  
DTI-Sulu  
DTI-Tawi-Tawi | | |
| Securities and Exchange Commission (SEC)  
Provincial Offices:  
1. Davao City  
2. Cagayan de Oro City  
3. Zamboanga City | Certificate of Registration for Partnership and Corporation (stock and non-stock) | 1. Name verification slip  
2. Registration Form (Online)  
3. Articles of incorporation and by-laws  
4. Cedula of Incorporators  
5. Minutes of Meeting of Incorporators  
6. Joint affidavit of two incorporators to chance corporate name  
7. For nonstock only: List of members certified by the corporate secretary and list of the names of contributors or donors and the amounts contributed or donated certified by the treasurer. |
| | | SEC Online Company Registration System: https://crs.sec.gov.ph/  
Download Application Form: https://crs.sec.gov.ph/ |
| Local Government Units | Business Permit | 1. DTI Business Name Registration (BNR) Certificate (for sole proprietorship)  
2. SEC Registration Certificate for Corporations and Partnerships (for partnership and corporations)  
3. Social Security System (SSS)  
4. Zoning Clearance (City Engineers Office)  
5. Sanitary Work Permit (DOH)  
6. PhilHealth for Employees (PhilHealth)  
7. Fire Safety Clearance (BFP)  
8. Community tax certificate or Cedula  
9. Lease contract or tax declaration  
10. Barangay clearance |
<p>| | | <em>If the nature of your business is similar to that of cinemas, malls, restaurants, then public liability insurance is needed.</em> |</p>
<table>
<thead>
<tr>
<th>Name of Office/Address/Contact details</th>
<th>Type of Certification, Application, Accreditation</th>
<th>Requirements</th>
</tr>
</thead>
</table>
| Cooperative Development Authority    | Certificate of Registration                   | 1. Must have at least fifteen (15) or more members who are Filipino citizens of legal age with a common bond of interest and are actually residing or working in the intended area of operation;  
2. Must have completed a Pre-Membership Education Seminar (PMES)  
3. Must submit the following documents to CDA (standard forms are available at CDA offices):  
- Economic Survey  
- By-laws  
- Treasurer’s Affidavit  
- Surety Bond of Accountable Officer  
- Approved Cooperative Name Reservation Slip/Notice (CNRS/N)  
- Registration Fee (Php 700)  
- Certification of PMES |
| Provincial Offices:  
1. Cotabato City  
2. Marawi City  
3. Lamitan City  
4. Jolo  
5. Bongao | For TIN and Certificate of Registration, Authority to print O.R, monthly taxes | Requirements:  
- BNR from DTI  
- Business Permit from LGU |
| BIR  
Revenue District Office No. 107 - Cotabato City, Maguindanao  
Office Address: BIR, Building SK Pendatun St., Cotabato City  
email: rdo_107css@bir.gov.ph  
Revenue District Officer: SATAR T. LAGUINDAB  
direct no.:  
fax: (064) 421-53-42  
Assistant Revenue District Officer:  
NORA R. MACARAMBON (OIC)  
direct no.: (064) 421-42-42 | | |
| BIR  
Revenue District Office No. 102 - Marawi City, Lanao del Sur  
Office Address: Alic Usman Building, Quezon Ave., Marawi City  
email: rdo_102@bir.gov.ph  
Revenue District Officer: MONIB Y. DIMALOMPING (OIC)  
cell no.: 0917-887-2159  
fax:  |
| BIR  
Revenue District Office No. 94 - Isabela City, Basilan  
Office Address: Aniceto G. Mon Bldg. N, Valderosa St., Isabela City, Basilan  
email: rdo_94@bir.gov.ph  
Revenue District Officer: GARY M. CATALAN (OIC)  
direct no.: (062) 200-34-06  
fax:  |

For TIN and Certificate of Registration, Authority to print O.R, monthly taxes
<table>
<thead>
<tr>
<th>Name of Office/Address/Contact details</th>
<th>Type of Certification, Application, Accreditation</th>
<th>Requirements</th>
</tr>
</thead>
</table>
| Revenue District Office No. 95 - Jolo, Sulu  
Office Address: 2/f Hadji Sabtirul Building, Travis St., Jolo, Sulu  
email: rdo_95@bir.gov.ph  
Revenue District Officer: ZHATRRA  
Assistant Revenue District Officer: MAHMOUDRAID S. ASGALI (OIC)  
direct no.: (085) 341-89-11  
tax: (085) 341-89-11  
Assistant Revenue District Officer: AYESHA A. UTTOH (OIC) | APPLICATION FOR REGISTRATION UNDER BOOK I OF THE OMNIBUS INVESTMENTS CODE OF 1987 AS AMENDED (EXECUTIVE ORDER NO. 226) | - General BOI Application form  
- SEC Registration/ DTI Business Registration (include amendments, if any)  
- Latest Audited Financial Statements (for existing corporations)  
- For projects applying as Expansion/ Modernization, last three years’ AFS and ITR.  
- Latest General Information Sheet (GIS) submitted to SEC  
- Board Resolution Authorizing Officer to represent the company (see format)  
- Publisher’s Affidavit of Publication of ‘Notice’  
- Other documents as may be required in the Specific Guidelines  
Download Application Form: http://www.rboi.armm.gov.ph/programs/registration |
| - Revenue District Office No. 96 - Bongao, Tawi-Tawi  
Office Address: AMT Tamburani Bldg. Pag-asa St., Tawi-Tawi  
email: rdo_96css@bir.gov.ph  
Revenue District Officer: ROGELIO C. DIZON  
direct no.: (062) 268-10-00  
tax: (062) 268-13-42  
Assistant Revenue District Officer: AYESHA A. UTTOH (OIC) | | |
| - Regional Board of Investments (RBOI) - ARMM  
ARMM Compound, Gov. Gutierrez Ave., RH 7, Cotabato City  
APPLICATION FOR REGISTRATION UNDER BOOK I OF THE OMNIBUS INVESTMENTS CODE OF 1987 AS AMENDED (EXECUTIVE ORDER NO. 226) | | |
| - Philippine Board of Investment (BOI)  
An attached agency of Department of Trade and Industry (DTI), responsible for the promotion of investments in the Philippines.  
Investing in the country depends on the type of business an investor is interested in. Below is the link to know more about the steps in setting up the business in the Philippines.  
<table>
<thead>
<tr>
<th>Name of Office/Address/Contact details</th>
<th>Type of Certification, Application, Accreditation</th>
<th>Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Department of Labor and Employment-ARMM</td>
<td>Certificate of Registration for Rural Workers Organization (RWO)</td>
<td>1. Application for Registration duly filled-up  2. List of Officers and Members with their ADDRESSES.  3. MINUTES of Organizational/Reorganizational Meeting with ATTENDANCE SHEET.  4. MINUTES of Ratification of Constitution and By-Laws (CBL), its date of ratification with the ATTENDANCE SHEET. (Note: This document is not required if the ratification is done simultaneously with the organizational meeting and the same is reflected in the minutes of organizational meeting.  5. Constitution and By-Laws duly ratified by the members.  6. Financial Report/Statement is the association has been in existence for one (1) year or more unless it has not collected any amount from the members in which case a STATEMENT to this effect be included in the application.  7. REGISTRATION FEE - P70.00 plus P15.00 documentary stamp = P85.00  NOTE: Documents 1 to 6 to be notarized. All documents shall be certified under oath by the Secretary or Treasurer as the case may be and attested by the President. All documents supporting the application for registration shall be prepared in 4 copies; 1 original and 3 duplicate copies. (The original copy and 2 duplicate copies shall be submitted to DOLE and 1 duplicate copy for the association.)</td>
</tr>
<tr>
<td>Philippine Coconut Authority-ARMM  3rd Floor, Department of Agriculture-XII Office, Sinsuat Avenue, Cotabato City</td>
<td>Certificate of Registration</td>
<td>Registration Requirements and Procedures for Coco Product and By-product Traders and Processors: <a href="http://www.pca.da.gov.ph/pdf/disclosure/tradersprocessors.pdf">http://www.pca.da.gov.ph/pdf/disclosure/tradersprocessors.pdf</a></td>
</tr>
</tbody>
</table>
**Directory of Prominent Industry Players in ARMM**

Industry players in AICCEP/MDLIP target province are listed below and the players in other provinces are not included.

**A. Abaca Industry (Lanao der Sur)**

<table>
<thead>
<tr>
<th>Name</th>
<th>Contact Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>LANAO DEL SUR CLASS A * Trader</strong></td>
<td></td>
</tr>
</tbody>
</table>
| AL-FAHAD ABACA ENTERPRISES | PUNDATO A. ALUG  
Pindolonan, Calanogas, Lanao del Sur  
Proprietor: PUNDATO A. ALUG  
Cell No.: 0928-458-1806 |
| J & A ABACA ENTERPRISES | ASMEN A. EBRAHIM  
Baya, Ganassi, Lanao del Sur  
Proprietor: ASMEN A. EBRAHIM  
Cell No.: 0946-260-0867 |
| DATUMULOK BODEGA | ABDULMOEN M. AMPASO  
Ngingir, Calanogas, Lanao del Sur  
Proprietor: ABDULMOEN M. AMPASO  
Cell No.: 0907-327-5254 |
| **LANAO DEL SUR CLASS D* Trader** | |
| JN-RAFFY AGRI PRODUCT & ENTERPRISES | JUNAIR MACARAMPAMPAT  
Poblacion, Balabagan, Lanao del Sur  
Proprietor: JUNAIR MACARAMPAMPAT  
Cell No.: 0907-122-5153 |
| AMER ABACA TRADING | AMER A. MACASIRA  
Poblacion, Balabagan, Lanao del Sur  
Proprietor: AMER A. MACASIRA  
Cell No.: 0907-676-8669 |
| ASNAWI R. GANDAMASIR | ASNAWI R. GANDAMASIR  
Tuka, Pualas, Lanao del Sur  
Proprietor: ASNAWI R. GANDAMASIR  
Cell No.: 0907-676-8669 |
| CALIBAO ABACA TRADERS | DAGAR S. CALIBAO  
Paigoay Coda, Marogong, Lanao del Sur  
Proprietor: DAGAR S. CALIBAO  
Cell No.: 0930-881-4412 |
| DISIMBAN ABACA ENTERPRISES | BAMER M. DISIMBAN  
Calalanuan, Calanogas, Lanao del Sur  
Proprietor: BAMER M. DISIMBAN  
Cell No.: 0907-677-5526 |
| AJMAL ABACA ENTERPRISES | JOMAR I. DISIMBAN  
Tamabac, Calanogas, Lanao del Sur  
Proprietor: JOMAR I. DISIMBAN  
Cell No.: 0907-677-5526 |
| GANASSI ABACA ENTERPRISES | MASTOR D. MAROHOMBSAR  
Pindolonan, Ganassi, Lanao del Sur  
Proprietor: MASTOR D. MAROHOMBSAR  
Cell No.: 0907-677-5526 |
| PIPARASAN M. MACAPODI | PIPARASAN M. MACAPODI  
Panggawalupa, Ganassi, Lanao del Sur  
Proprietor: PIPARASAN M. MACAPODI  
Cell No.: 0907-677-5526 |
| NAILA BODEGA and ENTERPRISES | WAIDA B. OMA  
Punud, Calanogas, Lanao del Sur  
Proprietor: WAIDA B. OMA  
Cell No.: 0948-748-6069 |
| MMM ABACA ENTERPRISES | MOCTAR M. MACAPODI  
Calalanuan, Calanogas, Lanao del Sur  
Proprietor: MOCTAR M. MACAPODI  
Cell No.: 0907-677-5526 |
| NAIF H.SALIM MABABAYA | NAIF H. SALIM MABABAYA  
Tambac, Calanogas, Lanao del Sur  
Proprietor: NAIF H. SALIM MABABAYA  
Cell No.: 0907-677-5526 |
| ALDIMAR ABACA ENTERPRISES | ALDIMAR M. ALUG  
Pindolonan, Ganassi, Lanao del Sur  
Proprietor: ALDIMAR M. ALUG  
Cell No.: 0907-677-5526 |
| HAMIN ABACA ENTERPRISES | HAMIN M. ALUG  
Pantaon, Calanogas, Lanao del Sur  
Proprietor: HAMIN M. ALUG  
Cell No.: 0907-677-5526 |
| JABBAR ABACA ENTERPRISES | JABBAR M. ABDULCADER  
Tambac, Calanogas, Lanao del Sur  
Proprietor: JABBAR M. ABDULCADER  
Cell No.: 0907-677-5526 |
| BENASING ABACA ENTERPRISES | COSARIE A. BENASING  
Danugan, Pualas, Lanao del Sur  
Proprietor: COSARIE A. BENASING  
Cell No.: 0907-677-5526 |
| AL-AMIN ABACA ENTERPRISES | AL-AMIN M. ALUG  
Pagalongan, Calanogas, Lanao del Sur  
Proprietor: AL-AMIN M. ALUG  
Cell No.: 0907-677-5526 |
**B. Coconut Industry (Maguindanao)**

<table>
<thead>
<tr>
<th>Name</th>
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<tr>
<td><strong>COCONUT SEEDLINGS PRODUCER</strong></td>
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<tr>
<td>UPIAN AGRI PINOY FARMERS PRODUCERS</td>
<td>EDGAR PAREÑO</td>
</tr>
<tr>
<td>COOPERATIVE</td>
<td><a href="mailto:upianagripinoy@yahoo.com">upianagripinoy@yahoo.com</a></td>
</tr>
<tr>
<td>Darugao, Upi, Maguindana</td>
<td>0921-656-6967</td>
</tr>
<tr>
<td><strong>AL-MANI FARMERS MARKETING COOPERATIVE</strong></td>
<td>BAGIYAN M. ANGELES</td>
</tr>
<tr>
<td>Guinibon, Datu Abdullah Sangki</td>
<td><a href="mailto:angel_mayan12@yahoo.com">angel_mayan12@yahoo.com</a></td>
</tr>
<tr>
<td></td>
<td>0926-191-9398</td>
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<tr>
<td><strong>COCONUT PROCESSORS</strong></td>
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<tr>
<td>ORGANIX SOLUTION</td>
<td>REYNALDO R. PACHECO</td>
</tr>
<tr>
<td>Tenorio, Awang, Datu Odin Sinsuat, Maguindana</td>
<td><a href="mailto:info@cocosource.com">info@cocosource.com</a></td>
</tr>
<tr>
<td></td>
<td>(02)- 706-0773</td>
</tr>
<tr>
<td>EKAYEN BUKO JUICE</td>
<td>VALDER BAINÉ A. YAP</td>
</tr>
<tr>
<td>12 Pastor Kimpo Subdivision, Cotabato City</td>
<td>064-421-9707</td>
</tr>
<tr>
<td><strong>ACH CORPORATION (Fresh Buko Manufacturer)</strong></td>
<td>MANCHANG C. ANG</td>
</tr>
<tr>
<td>10 Makakuka St., Cotabato City</td>
<td><a href="mailto:manchangang@gmail.com">manchangang@gmail.com</a></td>
</tr>
<tr>
<td></td>
<td>064-421-2423</td>
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<tr>
<td><strong>BABAÉ MABUHAY KAI PANDAG WOMEN’S ASSOCIATION (Coconut Sap Sugar Manufacturer)</strong></td>
<td>MOKALIDEN P. KIDO</td>
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<tr>
<td>Pandag, Maguindana</td>
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<tr>
<td><strong>AMIRSON PALAPA IRANUN (Coconut Condiment/Seasoning)</strong></td>
<td>ZAINODIN S. LIDASAN SR.</td>
</tr>
<tr>
<td>Luna St., Rosary Heights IV, Cotabato City</td>
<td><a href="mailto:zainodinlidasan@gmail.com">zainodinlidasan@gmail.com</a></td>
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<tr>
<td></td>
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<tr>
<td><strong>BADAK MPC BUY &amp; SELL</strong></td>
<td>MAKALANGKONG P. SILO</td>
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<tr>
<td>Bulod, Gen. Salipada K. Pedatun, Maguindana</td>
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<td><strong>COPRA BUYERS/TRADERS</strong></td>
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<tr>
<td>TNC ENTERPRISES</td>
<td>TEOFILO N. CHIO</td>
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<td>Poblacion, Shariff Aguak, Maguindana</td>
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<tr>
<td>JOE ENTERPRISES</td>
<td>JOSE G. ABELLANA SR</td>
</tr>
<tr>
<td>Jose Lim Sr. St., Cotabato City</td>
<td>552-2839</td>
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<tr>
<td>GOLDEN HMP AGRI TARDERS</td>
<td>GONZALO R. YU SR.</td>
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<tr>
<td>COFICO Compound, Cotabato City</td>
<td>0917-707-7016</td>
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<tr>
<td>ECK ENTERPRISE</td>
<td>JESSIE U. CHIO</td>
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<tr>
<td>Rajah Tabunaway Blvd., Cotabato City</td>
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<td>GREEN TRADERS</td>
<td>JAMES CHRISTOPHER D. YAP</td>
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<td>Jose Lim Sr. St., Cotabato City</td>
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<td>DRAGON COPRA ENTERPRISES</td>
<td>ALALI C. LIM</td>
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<tr>
<td>HADJI OMAR BUY AND SELL</td>
<td>HJI. OMAR OSMEÑA 0917-316-3185</td>
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<tr>
<td>NASRUDIN FERMIN COPRA BUY AND SELL</td>
<td>OTENG FERMIN 0917-316-3185</td>
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<td>GUIAMBLANG U. BUCA</td>
<td>GUIAMBLANG BUCA 0926-951-2543</td>
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<td>AL-RAHMAN FARMERS MULTI PURPOSE COOPERATIVE</td>
<td>MODRIKA MASUKAT 0917-626-1430</td>
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<tr>
<td>COTABATO MMZ ENTERPRISES</td>
<td>MUKAMAD LAGUINDO <a href="mailto:Mrvetiligo2@gmail.com">Mrvetiligo2@gmail.com</a> 064- 552-2787</td>
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<td>AL-MANI FARMERS MARKETING COOPERATIVE</td>
<td>BAGIYAN M. ANGELES <a href="mailto:angel_mayan12@yahoo.com">angel_mayan12@yahoo.com</a> 0926-191-9398</td>
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<td>GAPOR BULANAN</td>
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<tr>
<td>RPM COCONUT BUY AND SELL</td>
<td>NORAIJA P. MATALAM 0916-286-8538</td>
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<tr>
<td>STAMBO BUY &amp; SELL</td>
<td>BADRUDIN A. BANDILA 0916-286-8538</td>
</tr>
<tr>
<td>ROPIA COCO BUY AND SELL</td>
<td>ROPIA I. TAMAMA 0926-250-5919</td>
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<tr>
<td>AL-HAIR COCONUT BUYER</td>
<td>SAIMA G. AMBA <a href="mailto:Nasino.umbi@gmail.com">Nasino.umbi@gmail.com</a> 0926-376-1507</td>
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<tr>
<td>MMM BUY &amp; SELL</td>
<td>MAMA M. MASULOT <a href="mailto:masulot@yahoo.com">masulot@yahoo.com</a> 0935-826-1698</td>
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<td>DUMA SAULAMA SALIK</td>
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<td>H &amp; F ABID COCONUT BUY AND SELL</td>
<td>HARON KHALID ABID 0926-422-2251</td>
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<tr>
<td>MUSA COCONUT BUT &amp; SELL</td>
<td>KHALID A. MUSA <a href="mailto:Khalidmusa0820@gmail.com">Khalidmusa0820@gmail.com</a> 0995-871-4090</td>
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C. Coffee Industry (Sulu)

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<tr>
<td>Dennis Coffee Shop</td>
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<td>Abdusali Ahalul</td>
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<tr>
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<tr>
<td>Herman 1866 Kauman Sulu Coffee</td>
<td>Patikul, Sulu</td>
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<tr>
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<td>Nurhatab D. Saddarani</td>
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<td>Kankitap Consumer Cooperative</td>
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<td>Muddazer Hailanie</td>
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<td>OSAMA Cooperative</td>
<td>Lahing-Lahing, Omar, Sulu</td>
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<td>Jadjeera Cooperative</td>
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<td>Abdulgais Ustol</td>
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<td>0936-294-9951</td>
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<td>Peoples Alliance for Progress Cooperative</td>
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<td>Princess Kumalah Elardo</td>
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<td>0977-426-1377</td>
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D. Oil Palm Industry (Maguindanao)

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<td>AGUMIL PHILIPPINES INCORPORATED</td>
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<td></td>
<td>Jaena cor. AP Cortes Sts., Tipolo,</td>
</tr>
<tr>
<td></td>
<td>Mandaue City</td>
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<tr>
<td>PHIL ROY MALANA</td>
<td><a href="mailto:mpinocando@agusanplantations.com">mpinocando@agusanplantations.com</a></td>
</tr>
<tr>
<td></td>
<td>Tel. no.: +6332 2363435/3436</td>
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E. Rubber Industry (Basilan)

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<tr>
<td>Raw Rubber Local Traders in Basilan</td>
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<tr>
<td>MR. EFREN NEW EJN Copra Rubber and Coffee</td>
<td>09209191478</td>
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<tr>
<td></td>
<td>Dealer</td>
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<tr>
<td></td>
<td>09173105301</td>
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<tr>
<td>MR. ABDULHUSIN INSANA Lamitan Copra,</td>
<td>09973944988</td>
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<tr>
<td>Rubber Traders Assoc.</td>
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<tr>
<td>MR. EDILBERTO MARTINEZ LARBECO</td>
<td>09477824564</td>
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<tr>
<td>MR. SABINIANO CANTAY UWARBMPC</td>
<td>09171370451</td>
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<tr>
<td>MS. CARLITO SUELA TARBAMC</td>
<td>09755545396</td>
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<tr>
<td>MR. JOEL ENRIQUEZ SCARBIDC</td>
<td>09354370284</td>
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## F. Seaweed Industry (Tawi-Tawi)

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<tr>
<td><strong>Local Buyers/Traders</strong></td>
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<tr>
<td><strong>JOLLY C. AHAJA</strong></td>
<td>ABDULAJID J. JAJI</td>
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<tr>
<td>Sitangkai Seaweed Export</td>
<td>Royal Marketing</td>
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<tr>
<td>Sitangkai, Tawi-Tawi</td>
<td>Bongao, Tawi-Tawi</td>
</tr>
<tr>
<td>Mobile No.: 0908-8971553</td>
<td>Tel. No.: (068) 268-1059</td>
</tr>
<tr>
<td><strong>NANAR M. AKMAD</strong></td>
<td>JIMUEL S. QUE</td>
</tr>
<tr>
<td>AK Seaweeds and Marine Products Trading</td>
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</tr>
<tr>
<td>Sitangkai, Tawi-Tawi</td>
<td>JJ Trading</td>
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<tr>
<td><strong>SITTI DELNES H. BALAIS</strong></td>
<td>RICK M. SAMSUYA</td>
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<tr>
<td>Isla Seaweeds and Dried Fish Dealer</td>
<td>Bongao Fish Trading</td>
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<tr>
<td>Sitangkai, Tawi-Tawi</td>
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<tr>
<td><strong>AKMAD M. ABRAHAM</strong></td>
<td>RAMIL J. BALADJI</td>
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<tr>
<td>AA Seaweeds and Marine Products Trading</td>
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<tr>
<td>Sitangkai, Tawi-Tawi</td>
<td>Shalom Seaweeds Trading</td>
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<tr>
<td>Mobile No.: 0920-7964020</td>
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<tr>
<td><strong>JULMIN S. SALAHUDDIN</strong></td>
<td>WANGPI K. LEONSUL</td>
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<tr>
<td>NJ Seaweed and Marine Products Trading</td>
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<tr>
<td>Sitangkai, Tawi-Tawi</td>
<td>Wangpi Seaweeds Trading</td>
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<tr>
<td>Mobile No.: 0997-5180675</td>
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<tr>
<td><strong>AL-HASIL B. NAHUL</strong></td>
<td>JULHATTA LADJA</td>
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<tr>
<td>Integrated Farmers and Seaweed Marketing Cooperative</td>
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<tr>
<td>Sibutu, Tawi-Tawi</td>
<td>Hats Trading</td>
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<tr>
<td>Mobile No.: 0949-1516882</td>
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<tr>
<td><strong>YUSA T. TAIB</strong></td>
<td>ABUBAKAR SAWAE</td>
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<tr>
<td>Buan Seaweed Farmers Marketing Cooperative</td>
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<tr>
<td>Panglima Sugala, Tawi-Tawi</td>
<td>Sitti Bahasa Seaweeds Dealer</td>
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<tr>
<td>Mobile No.: 0909-4238107</td>
<td>Bongao, Tawi-Tawi</td>
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<tr>
<td><strong>PERSA A. NASALUDDIN</strong></td>
<td>ABDULATIF A. MUDAH</td>
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<tr>
<td>Swerte Fisherfolks and Farmers Producer Cooperative</td>
<td>Kasambuhan Mal Ungus-Ungus Association</td>
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<td>Sibutu, Tawi-Tawi</td>
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<tr>
<td>Mobile No.: 09099678200</td>
<td>Mobile No.: 0948-3153194</td>
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<tr>
<td><strong>KUYOH H. PAJIJI</strong></td>
<td>ABDULKARIM M. JOE</td>
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<tr>
<td>HK Seaweed Buyer</td>
<td>Abdulkarim Joe Marketing</td>
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<td>Sibutu, Tawi-Tawi</td>
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<tr>
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<td><strong>ELMER A. KALON</strong></td>
<td>ABDULAJID J. JAJI</td>
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<td>Elmer Kalon Seaweed Buyer</td>
<td>Alfaibash Trading</td>
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<td>Tel. No.: (068) 268-1059</td>
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<tr>
<td><strong>SHEREDE T. PIONAH</strong></td>
<td>RUMAL BUNSUAN</td>
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<td>Sam &amp; Sheh Trading</td>
<td>230 Seaweeds Buying Station</td>
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<tr>
<td>Sitangkai, Tawi-Tawi</td>
<td>Chinese Pier, Bongao, Tawi-Tawi</td>
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<tr>
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<td>Mobile No.: 0997-4411211</td>
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<tr>
<td><strong>HJI. TUTOH S. AJAM</strong></td>
<td>REEMA SEAWEEDS TRADING</td>
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<tr>
<td>JR Seaweeds &amp; Copra</td>
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<td>Chinese Pier, Bongao, Tawi-Tawi</td>
<td>Sitangkai, Tawi-Tawi</td>
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<tr>
<td>Mobile No.: 0915-1373149</td>
<td>Mobile No.: 0906-5585714</td>
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*Source: DTI-ARMM Tawi-Tawi BNR and Industry Profile*
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<tr>
<td>1. Sipangkot Fisherfolks and Seaweeds Marketing Cooperative</td>
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<td>2. Larap Seaweeds Farmers Marketing Cooperative</td>
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<td>4. Tawi-Tawi Farmers and Fisherfolks Producers Cooperative</td>
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<td>5. One Basulta Seaweed Producers Cooperative</td>
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<td><strong>SIBUTU</strong></td>
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<td>6. Integrated Farmers and Seaweed Traders Marketing Cooperative</td>
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<td>7. Seaweeds Industry Producer Cooperative</td>
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<td>8. Swerte Fisherfolk’s and Farmers Producer Cooperative</td>
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<td>9. Usaha Seaweeds Farmers and Fisherfolks Marketing Cooperative</td>
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<td>11. Tatabangan Farmers Producers Cooperative</td>
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<td>18. Tando Owak Farmers and Fisherfolks Producer Cooperative</td>
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<td>33. New Himbah Marketing Cooperative</td>
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<tr>
<td>34. Tandubato Integrated and Development Marketing Cooperative</td>
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<tr>
<td><strong>BONGAO</strong></td>
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<tr>
<td>35. Sumangat Seaweeds Farmers Marketing Cooperative</td>
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<tr>
<td>36. Badjao Village Multi-Purpose Cooperative</td>
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<tr>
<td>37. Boheh Basag Farmers and Fisherfolks Producers Cooperative</td>
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<tr>
<td><strong>SIMUNUL</strong></td>
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<tr>
<td>38. Tong-gusong Seaweeds Farmers and Fisherfolks Marketing Coop.</td>
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<tr>
<td>40. Barangay Panglima Mastul Marketing Cooperative</td>
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<tr>
<td>41. Bakong Sahaya Farmers Marketing Cooperative</td>
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<tr>
<td>42. Panglima Haji Farmers and Fisherfolks Producers Cooperative</td>
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<td>43. Bohe Indangan Farmers Marketing Cooperative</td>
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<td>44. Manuk Mangkaw Kasilasa Producer Cooperative</td>
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</tbody>
</table>

*Source: CDA-ARMM Tawi-Tawi*
## Directory of Industry Enablers in ARMM

<table>
<thead>
<tr>
<th>Office</th>
<th>Address</th>
<th>Contact Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Department of Trade and Industry – ARMM</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regional Office</td>
<td>BARMM Compound, Gov. Gutierrez Ave., Cotabato City</td>
<td>(064) 557-2819 <a href="mailto:dtiarmm@gmail.com">dtiarmm@gmail.com</a> <a href="mailto:dti@armm.gov.ph">dti@armm.gov.ph</a></td>
</tr>
<tr>
<td>Maguindanao PO</td>
<td>3rd Flr. Romeo Ma Bldg., Sinsuat Ave. Cor Pansacala St., Cotabato City</td>
<td>Datu Khalikuzaman Baraguir, Provincial Director <a href="mailto:dtimaguindanao@yahoo.com">dtimaguindanao@yahoo.com</a> (064) 557-2474</td>
</tr>
<tr>
<td>Lanao del Sur PO</td>
<td>3/F RLM Bldg. Amaipakpak, Bo. Green, Marawi City</td>
<td>Moh. Aquil Mamainte, Provincial Director <a href="mailto:dtilds@gmail.com">dtilds@gmail.com</a></td>
</tr>
<tr>
<td>Basilan PO</td>
<td>N.Valderoza St., Isabela City</td>
<td>Nonito Manuel, OIC Provincial Director <a href="mailto:dtiarmm_basilan@yahoo.com">dtiarmm_basilan@yahoo.com</a></td>
</tr>
<tr>
<td>Sulu PO</td>
<td>Capitol Site, Jolo, Sulu</td>
<td>Salem Tayong, Acting Provincial Director <a href="mailto:salemtayong@gmail.com">salemtayong@gmail.com</a></td>
</tr>
<tr>
<td>Tawi-Tawi PO</td>
<td>2nd Flr. BARNs Bldg., Tubig Boh, Bongao, Tawi-Tawi</td>
<td>Nazrullah Masahud, Provincial Director <a href="mailto:dtiarmm_twt@yahoo.com">dtiarmm_twt@yahoo.com</a> 0908-820-8098</td>
</tr>
<tr>
<td><strong>ARMM Agencies</strong></td>
<td></td>
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<tr>
<td>Ministry of Agriculture, Fisheries and Agrarian Reform– BARMM</td>
<td>BARMM Compound, Gov. Gutierrez Ave., Cotabato City</td>
<td>Agriculture: (064) 421-1233/552-3166 Fisheries: (064) 421-9788 Agrarian Reform: (064) 552-1486/ Telefax: (064) 390-1461</td>
</tr>
<tr>
<td>Regional Board of Investments</td>
<td>BARMM Compound, Gov. Gutierrez Ave., Cotabato City</td>
<td>Eshan Karl Mabang, Executive Director <a href="mailto:rboi@armm.gov.ph">rboi@armm.gov.ph</a> Tel.no. (064) 421-9202 Telefax: (064) 421-1591</td>
</tr>
<tr>
<td><strong>National Agencies</strong></td>
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<tr>
<td>Philippine Coconut Authority – ARMM</td>
<td>3rd Flr. Department of Agriculture-Bldg, Sinsuat Ave., Cotabato City</td>
<td>Marina Wahab, Regional Manager <a href="mailto:pcapivarmm@yahoo.com.ph">pcapivarmm@yahoo.com.ph</a> Telfax: (064) 421-6680 Tel No. (064) 421-8973</td>
</tr>
<tr>
<td>PhilFIDA Region 9</td>
<td>National Highway, Tuburan District, Pagadian City</td>
<td>Alex A. Jaducana Regional Director <a href="mailto:fida_region9@yahoo.com">fida_region9@yahoo.com</a> 0917-6264171</td>
</tr>
<tr>
<td>PhilFIDA Lanao Sur</td>
<td>Lao Bldg., Cadayonan II, Marawi City</td>
<td>Armalia R. Abdulmanan Provincial Fiber Officer</td>
</tr>
<tr>
<td><strong>Academia</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MSU Marawi City</td>
<td>Marawi City</td>
<td>Dr. Habib W. Macaayong MSU System President</td>
</tr>
<tr>
<td>MSU Tawi-Tawi</td>
<td>Bohev Sallang, Sanga-Sanga, Bongao, Tawi-Tawi</td>
<td>Chancellor Mary Joyce Z. Guinto-Sali, Ph.D. <a href="mailto:chancellor.tcto@msu.edu.ph">chancellor.tcto@msu.edu.ph</a> 0917.310.7843</td>
</tr>
<tr>
<td>UAS</td>
<td>Brgy. Mirab, Upi, Maguindanao</td>
<td>Engr. Sukarno Datukan, School Administrator <a href="mailto:sbdatukan@yahoo.com">sbdatukan@yahoo.com</a></td>
</tr>
</tbody>
</table>
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