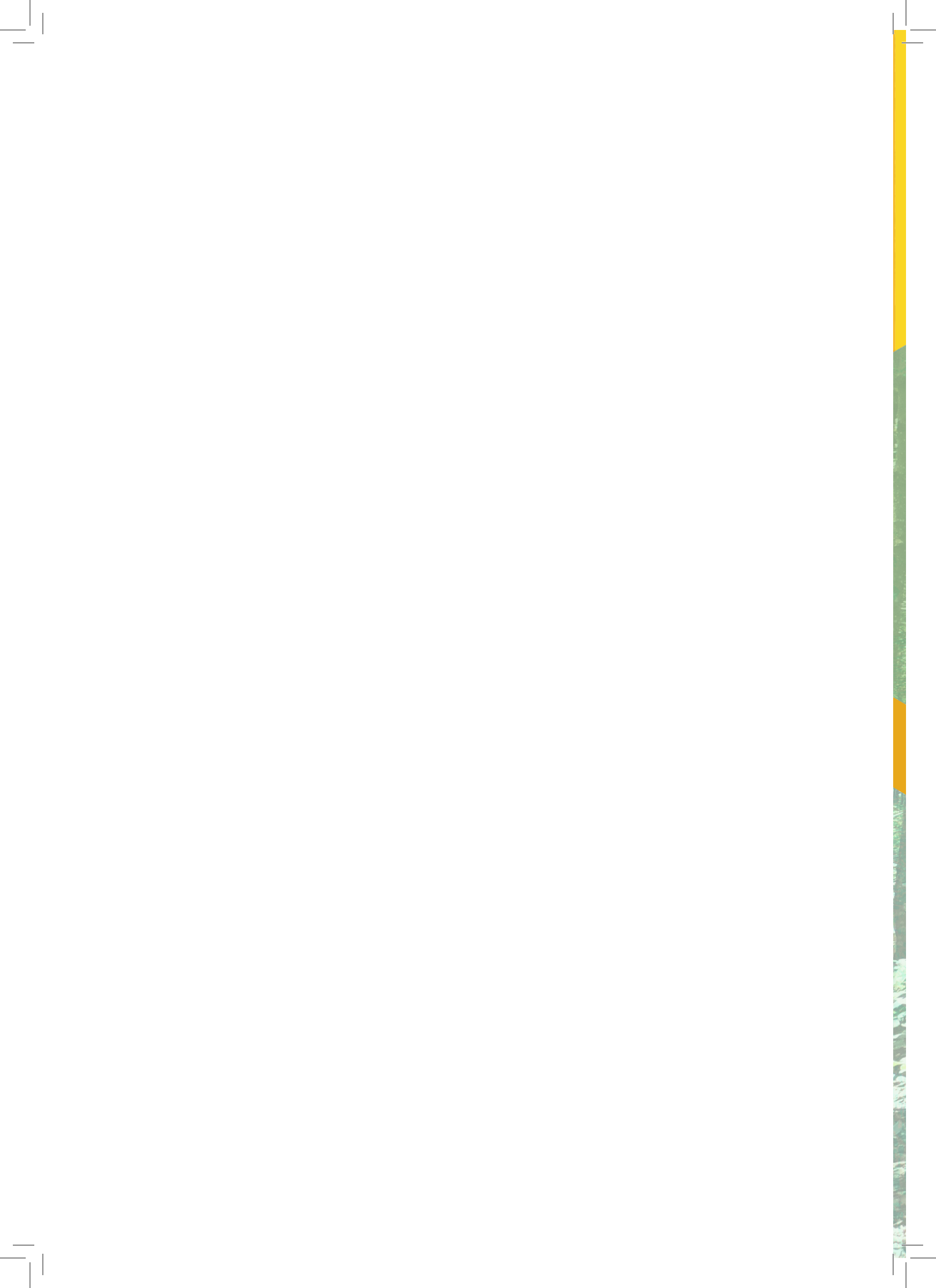


PHILIPPINE RUBBER INDUSTRY ROADMAP 2023-2028







PHILIPPINE RUBBER INDUSTRY ROADMAP

2023-2028

EXECUTIVE SUMMARY

The Philippine Rubber Industry Roadmap 2023-2028 is a result of various consultations and dialogues with the rubber industry stakeholders from the private and government sectors. This is a successor plan of the Philippine Rubber Industry Roadmap 2017-2022. One of the key initiatives in the roadmap is the creation of the Philippine Rubber Industry Board that would oversee the implementation of the various programs of government agencies and private sector organizations in the development of the rubber industry.


The Philippine Rubber Industry consists of key players from upstream, mid-stream, and downstream sectors. Upstream sector is composed of suppliers of inputs, rubber planters producing latex and cup lumps. Midstream sector includes processors of Technically Specified Rubber (crumb rubber and air-dried sheets), latex concentrate, traders and exporters of TSR/SPR. The downstream sector includes manufacturers of tires, automotive parts, sports products particularly tennis balls, and footwears. There is an untapped industry in manufacturing of health and medical devices, like gloves, condoms, baby feeding nipples and other products from latex concentrate. There is also a potential in producing rubberized asphalt and other innovative and emerging rubber-based products.

The upstream and mid-stream activities are mostly located in Mindanao while downstream is in Luzon and Visayas. Mindanao will soon host the biggest tennis ball manufacturer in the world. With the existence of Dunlop in Bataan, the Philippines will become the largest tennis ball supplier in the world.

The rubber industry is envisioned to be inclusive, globally competitive and resilient industry providing sustainable benefits to all stakeholders by developing a cost-competitive, quality-driven, supply-reliable, innovative products-diversified value chain from primary production to manufacturing and marketing of rubber-based products under sustainable practices.

The goal is to increase the benefits of all the stakeholders in the rubber industry thereby spreading the gains down to the smallholders in the remote barangays in all rubber-producing provinces in the regions. By the end of 2028, the industry shall have established the Philippine Rubber Industry Development Board; increased the number of accredited plant nurseries and budwood gardens (government and private owned); expanded total area planted using certified planting materials under NSIC registered varieties; improved farm productivity; increased investments in rubber plantation, processing plants and rubber products manufacturing resulting in increased export of processed and manufactured rubber products and reduced import of natural rubber by major rubber-based manufacturers.

The plan outlines the development strategies in achieving the goals of the Philippine Rubber Industry including the creation of an institution that will orchestrate, coordinate and



oversee the implementation of programs and projects of the government and private sector, and ensure a unified direction for the industry. The development of the industry requires the certification of new rubber clones and use of NSIC certified planting materials from accredited nurseries and certified budwood gardens. Likewise, it focuses on the adoption of Good Agricultural Practices (GAP) and transfer of new and innovative technologies for midstream and downstream sectors. The plan gives priority to intensified research, development and extension services to improve technology in production, processing and manufacturing. It gives emphasis on the provision of support to farmers through farm mechanization and modernization, and product quality improvement conformant to national and international standards.

The roadmap advocates for the active promotion of investment opportunities in the manufacture of rubber-based products for domestic and international markets. The plan pushes for sustained membership to and linkages with national international industry organizations to facilitate seamless exchange of information to keep abreast with developments across the global rubber value chain. The plan strongly pushes for the creation of new financial facilities to farmers and other industry stakeholders.

This document includes the Philippine Rubber Industry Cluster Action Plan (2023-2028) providing in details various programs, projects, and activities of government agencies allied to the development of the industry. The PHLRUBBER which was created by the Department of Trade and Industry on June 22, 2012 as a Technical Working Group serves as an anchor organization that coordinates and monitors the implementation of the cluster action plan and submit progress reports to the top management of the member-agencies and institutions.

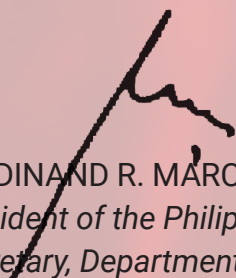
My warmest greetings to the **Department of Trade and Industry** and the **Philippine Rubber Technical Working Group** as you publish the **Philippine Rubber Industry Roadmap 2023-2028**.

Our country's rubber industry has the potential to supply, develop, and distribute various rubber-based products not only in the country but also to the rest of the world. I welcome the timely publication of this roadmap that identifies key elements relevant to the development of this important sector and the revitalization of our economy.

I trust that this material will serve as a guide in developing strategies to advance the rubber industry in a manner that is responsive to the needs of various stakeholders. I hope that this resource will also strengthen our engagements with one another as we craft policies that will redound to the resilience and sustainability of our rubber-based enterprises.

As President, urge you to join me as we usher in a new era of growth for both the agricultural and manufacturing industries, of which the rubber sector is a part. May you continue to embody excellence in your endeavors as we strive to attain a stronger and brighter future for all.

I wish you all the best.


FERDINAND R. MARCOS, JR.
President of the Philippines
Secretary, Department of Agriculture





ALFREDO PASCUAL

Secretary

Department of Trade and Industry

I commend the leadership of the Philippine Rubber Technical Working Group (PHLRUBBER) for the crafting of the Philippine Rubber Industry Roadmap 2023-2028. The timely completion of this roadmap will sustain our ongoing initiatives to foster the continuous advancement of the industry.

As we collectively work to transform the industry to produce world-class, competitive, and high-quality rubber products, this roadmap will serve as a tangible guide to all industry stakeholders with specific objectives and clear development plans for the next six years.

Beyond roadmaps, our goal is to actively pursue initiatives and implement strategies that will engage strong commitment from the private sector to work with us for the accelerated growth of the industry and propel rubber products to become a key contributor to Philippine economic development.

The Department of Trade and Industry (DTI), as the lead agency in implementing the Industry Cluster Enhancement Program, remains steadfast in ensuring that appropriate support will be laid down to complement the programs, projects, and activities reflected in this roadmap. We envision a prosperous economy driven by competition and productivity with dynamic industry ecosystems as the foundation for generating quality jobs, creating new products and services, improving environmental sustainability, and ensuring shared prosperity for all.

Congratulations and mabuhay!



RENATO U. SOLIDUM, JR.

Secretary

Department of Science and Technology

The Department of Science and Technology (DOST) wish to congratulate the Department of Trade and Industry (DTI) and its Philippine Rubber Technical Working Group for successfully crafting the Philippine Rubber Industry Roadmap 2023-2028. The Philippines currently ranks 10th among the rubber producing countries in the world. Rubber, being one of the country's most valued agricultural crops, I must say we are on the right direction.

The DOST and DTI have always been constant partners in transforming our country's local industry and services sector into globally competitive and innovative players that contribute to inclusive growth and employment generation. This initiative will create a long-term sustainable system for our local rubber industry. We at the DOST complements DTI by developing methods and technologies on how to maximize the yield and utilization of rubber which is among the priorities of the DOST. The DOST - Philippine Council for Agriculture, Aquatic, and Natural Resources Research and Development (DOST-PCAARRD) supports and guides the implementation of the Science and Technology Community-based Farm (STCBF) on rubber production. The STCBF concept is a new technology transfer and commercialization modality and a component of DOST-PCAARRD's "Piney S&T Services for Farmers and Entrepreneurs" which enjoins stakeholders such as state universities and farmers associations to collaborate and streamline their efforts. The DOST - Forest Products Research and Development Institute (DOST-FPRDI) conducted capacity-building for rubber-farmer-tappers to improve competencies in establishing a rubber budwood and seedlings nursery, planting rubber trees and seedlings, doing a budding operation, and harvesting latex yield. Both DOST agencies have showcased the effectiveness of science and technology (S&T) interventions to empower rubber farmers by improving their productivity.

As we move forward with the new Administration, the DOST remains steadfast in its commitment to uphold the local rubber industry. We fully support the Philippine Rubber Industry Roadmap 2023-2028, a strategic tool and a solid plan. With this and a whole-of-government approach, we are optimistic that we can uplift the Philippine Rubber industry for the development of cost-competitive, quality-driven, supply-reliable, innovative products-diversified chain from primary production to manufacturing and marketing of rubber-based products under sustainable practices.

Maraming Salamat. Mabuhay ang industriya ng Rubber!



A handwritten signature in black ink, appearing to read 'Conrado M. Estrella III', written over a light blue background.

CONRADO M. ESTRELLA III
Secretary
Department of Agrarian Reform

I would like to convey my congratulations to the Department of Trade and Industry, Philippine Rubber Technical Working Group, and to the rubber industry stakeholders for the completion of our industry roadmap.

From mere latex sap came an essential product that has been part of our everyday lives. Rubber is an important material used to create various sorts of merchandise, and both its raw and semi-processed forms can become economic boosters to the Philippines. This is enough reason for us to foster the farming, development, and production in this industry.

The creation of a road map signifies the meticulous yet rewarding pathway to reaching the goals of our rubber industry. It is about time that we showcase to the world our quality rubber and rubber-based products. Nevertheless, it is my personal prayer that the realization of this road map will truly trickle the benefits from huge manufacturers down to our beloved farmers.

Like rubber, may we continue to be robust with our conviction to advance the Philippine rubber industry, and may we be flexible in adapting to whatever challenges that could come our way.

On behalf of the Department of Agrarian Reform, I wish the Philippine Rubber Industry more power and success.



The Blueprint for Growth...

The pace of growth of economic activities across the entire value chain of the natural rubber industry in the Philippines depends largely on the strength of convergence among the key players both the government and the private sector. The government must ensure that appropriate business environment, support policies and institutions are in place. The Philippine Rubber Industry Roadmap is a blueprint laying out the requirements of the industry in response to mounting challenges faced most particularly by the small holders. The roadmap likewise identifies various opportunities that can bring economic benefits to rubber-producing regions and the country as well.

I congratulate the men and women who exerted so much efforts to review the 2017-2022 roadmap and worked on the successor plan. These are incredibly dedicated government workers and committed industry leaders whose relentless belief on the potentials of the natural rubber industry has driven the PhIRubber to finally publish the 2023-2028 Philippine Rubber Industry Roadmap. It is therefore my fervent prayer that the government will allocate resources to ensure that the goals and objectives of the industry are achieved.

Crafting this roadmap has not been an easy journey particularly for the PhIRubber Secretariat and the Department of Trade and Industry. So I hope the member-agencies will implement all the programs and projects reflected in this document and the private sector will continue to live up to its commitment as we work together to ultimately attain our vision for the industry.

SITTI AMINA M. JAIN, PhD
Chairperson
PHLRUBBER TWG

RUBBER FARMING : Is it a SUNSET or a SUNRISE INDUSTRY?

Growing up with the rubber trees planted by my parents some 50 years ago was indeed an amazing journey. It gave me more meaningful insights on how it affects the lives of the different stakeholders of the supply chain and especially the Filipino rubber farmers. I have witnessed rubber cuplumps bought from farmers for as low as P2.00 to as high as P100.00 per kilo. I saw different ways and farming methods of growing rubber trees from monocropping, intercropping and multi-cropping using seedlings, bud grafted and as well as large planting materials.

The collaborative effort of our government led by the Department of Agriculture, other agencies, researchers from different State Universities and the private sectors to find technical solutions not only in farming but also providing support by distributing post-harvest facilities. All these efforts were to address the low productivity resulting to low income faced by the smallholders. Low productivity has always been a major concern through the years and more so today where the living cost is much higher than it was 50 years ago. It has come to a critical point that if our current traditional rubber farming system continues, the poverty issue which our rubber farmers currently face will not be addressed. This is because the monthly income per household will remain way below the poverty threshold set by our government. Planting a perennial crop like rubber is very challenging as the farmers cannot afford to make a mistake today, since this mistake will be carried over in the next 30 years.

I would like to acknowledge the efforts of the Chairperson Dr. Sitti Amina Jain and all the members of the PHLRUBBER Technical Working Group for spearheading the crafting of the Philippine Rubber Industry Roadmap which highlights the recommended solutions to help the Rubber Industry withstand and overcome these challenging times. This roadmap, if properly implemented, will ensure sustainable higher productivity, improved processed rubber quality and will have a greater positive impact in the lives of our farmers.

Furthermore, I am very optimistic that the convergence of all stakeholders and its respective initiatives will promote inclusive growth across the whole supply chain. Together, we will positively make the Rubber Industry a SUNRISE Industry.

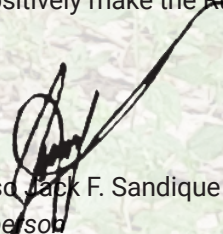

Alfonso Jack F. Sandique
Chairperson
PCAF NBPC on HVC - Rubber



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ACRONYMS

ACCSQ-RBPWG	ASEAN Consultative Committee on Standards and Quality – Rubber Based Products Working Group
ADS	Air-dried sheet
ANRPC	Association of Natural Rubber Producing Countries
BARMM	Bangsamoro Autonomous Region in Muslim Mindanao
CMU	Central Mindanao University
DA	Department of Agriculture
DA-BAFS	DA-Bureau of Agriculture and Fisheries Standards
DA-BAR	DA-Bureau of Agricultural Research
DA-BPI	Department of Agriculture-Bureau of Plant Industry
DA-PhilMech	DA-Philippine Center for Postharvest Development and Mechanization
DAR	Department of Agrarian Reform
DBP	Development Bank of the Philippines
DENR	Department of Environment and Natural Resources
DENR-NGP	DENR-National Greening Program
DILG	Department of the Interior and Local Government
DLSU	De La Salle University
DOLE	Department of Labor and Employment
DOST	Department of Science and Technology
DOST-ITDI	DOST-Industrial Technology Development Institute
DOST-FPRDI	DOST- Forest Products Research and Development Institute
DOST-PCAARRD	DOST-Philippine Council for Agriculture, Aquatic and Natural Resources Research and Development
DOST-PCIEERRD	DOST-Philippine Council for Industry, Energy and Emerging Technology Research and Development
DR	Dry Rubber
DRC	Dry Rubber Content
DTI	Department of Trade and Industry
DTI-BPS	DTI-Bureau of Philippines Standards

DTI-EMB	DTI-Exports Marketing Bureau
GAP	Good Agricultural Practices
IEC	Information, Education and Communication
IMF	International Monetary Fund
IRRDB	International Rubber Research and Development Board
IRSG	International Rubber Study Group
ISO	International Organization for Standardization
ISP	Industry Strategic Plan
ISU	Isabela State University
ITRC	International Tripartite Rubber Council
JICA	Japan International Cooperation Agency
JRMSU	Jose Rizal Memorial State University
LBP	Landbank of the Philippines
LGU	Local Government Units
LSM	Local Study Mission
MRE	Malaysian Rubber Exchange
MT	Metric Tons
NC	North Cotabato
NC II	National Certificate II
NR	Natural Rubber
PCAF	Philippine Council for Agriculture and Fisheries
PEZA	Philippine Economic Zone Authority
PPRPC	Philippine Pioneer Rubber Products Corp.
PHIRMA	Philippine Rubber Manufacturers' Association
PHLRUBBER	Philippine Rubber Technical Working Group
PNS	Philippine National Standard
PPA	Projects, Programs and Activities
PRDI	Platinum Rubber Development, Inc
PRIA	Philippine Rubber Industries Association, Inc.
PRIME	Philippine Rubber Investment and Market Encounter

PRFA	Philippine Rubber Farmers' Association
PRRI	Philippine Rubber Research Institute
PRTC	Philippine Rubber Testing Center
PSA	Philippine Statistics Authority
RDE	Research Development and Extension
RIAP	Rubber Industries Association of the Philippines
RICG	DTI-Rubber Industry Cluster Group
RPMC	Rubber Price Management Committee
RPMS	Regional Price Management System
RSS	Ribbed Smoked Sheets
SBCorp	Small Business Corporation
SET-UP	Small Enterprise Technology Upgrading Program
SLSU	Southern Luzon State University
SPR	Standard Philippine Rubber
SSF	Shared Service Facilities
TESDA	Technical Education and Skills Development Authority
TSR	Technically Specified Rubber
USM	University of Southern Mindanao
UWARBMPC	United Workers Agrarian Reform Beneficiaries Multi-Purpose Cooperative
WESMAARRDEC	Western Mindanao Agriculture and Aquatic Resources Research and Development Consortium
WMSU	Western Mindanao State University
WPU	Western Philippine University
YTPI	Yokohama Tire Philippines, Inc.
ZamPen	Zamboanga Peninsula
ZamPen RUBBER	Zamboanga Peninsula Rubber Industry Cluster Team
ZDN	Zamboanga del Norte
ZSP	Zamboanga Sibugay Province
ZSP-RIDB	Zamboanga Sibugay Provincial Rubber Industry Development Board

A photograph showing a rubber tree trunk with a diagonal cut for tapping. A clear latex sap is flowing down the trunk and into a small, dark, cup-shaped collection container attached to the tree. The background is a lush green forest with many trees and undergrowth.

Rubber Industry Situationer

I. RUBBER INDUSTRY SITUATIONER

A. THE WORLD RUBBER INDUSTRY

1. WORLD RUBBER PRODUCTION

The Covid-19 Pandemic has adversely affected almost all industries worldwide including the rubber industry most particularly the production of natural rubber indicating reduction in the volume of supply during the last two (2) years albeit still higher compared to previous years. Based on the report of the Association of Natural Rubber Producing Countries (ANRPC), the world natural rubber (NR) production recorded at 14.107 million metric tons in 2022 which is 1.9% higher compared to 2021 production.

Table 1
Production of Natural Rubber ('000 MT)

Countries	Quantity					Annual Growth Rate (%)			
	2018	2019	2020	2021	2022	2019	2020	2021	2022
Thailand	4,974	4,851	4,863	4,673	4,682	-2.5	0.2	-3.9	0.2
Indonesia	3,630	3,301	3,037	3,122	3,248	-9.1	-8.0	2.8	4.0
Viet Nam	1,138	1,183	1,226	1,203	1,255	3.9	3.7	-1.9	4.3
Cote d' Ivoire	624	808	950	965	980	29.4	17.6	1.6	1.6
China	818	813	693	851	865	-0.7	-14.8	22.9	1.6
India	660	702	685	793	766	6.4	-2.4	15.8	-3.4
Malaysia	603	640	515	520	540	6.1	-19.6	1.0	3.8
Cambodia	220	288	349	368	401	30.7	21.5	5.4	9.0
Myanmar	227	260	267	291	300	14.7	2.9	8.8	3.2
Brazil	186	189	191	200	201	1.6	1.1	4.7	0.5
Laos	101	130	154	155	160	28.1	18.6	0.5	3.2
Guatemala	100	102	109	109	110	2.0	6.9	-0.3	1.2
Philippines	106	108	106	137	109	2.0	-2.1	29.6	-20.5
Sri Lanka	83	75	78	78	89	-9.5	4.6	-0.3	13.5
Bangladesh	23	23	22	25	25	2.2	-4.8	11.9	2.0
Papua New Guinea	6	6	6	6	6	0.1	-3.2	3.6	5.3
All Others	341	361	344	348	371	5.9	-4.7	1.1	6.7
World Total	13,8389	13,838	13,594	13,842	14,107	0.0	-1.8	1.8	1.9

ANRPC Natural Rubber Trends and Statistics, January-February 2022

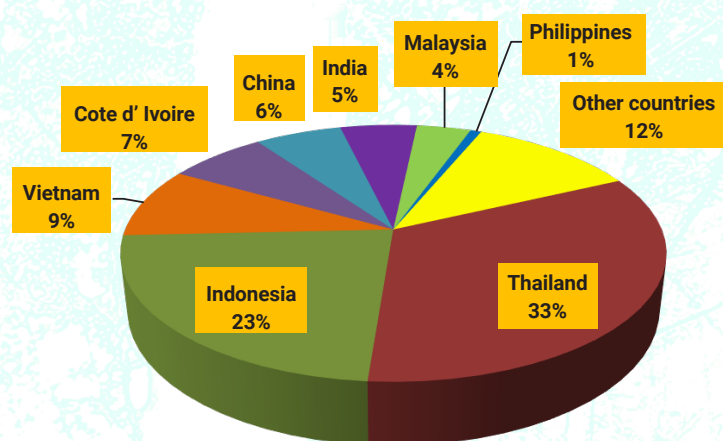


Figure 1: World NR Share per Country

ANRPC Natural Rubber Trends and Statistics, January-February 2022

Analysis of world NR production released by ANRPC, shows that Thailand is still the major supplier of NR contributing 4.682 million metric tons which represents 33% of the world production. While Indonesia and Vietnam shared 23% and 9%, respectively. Other countries have less than a million MT production (Figure 1).

2. WORLD ANNUAL PRODUCTIVITY TREND

Viet Nam has been consistently the first in terms of annual yield among rubber producing countries for the past ten years. As of 2022, Viet Nam has recorded an annual productivity of 1.719 metric tons followed by India and Thailand with 1.465 metric tons and 1.434 metric tons, respectively. On the other hand, Philippines is one of the countries with the lowest annual production yield among rubber producing countries. In fact, from 2017 to 2021, the annual yield of the Philippines ranged from 0.70 to 0.715 metric tons showing practically no improvement on productivity over the last five years. Worst more, ANRPC projected that the annual productivity of the Philippines in 2022 will even go down to as low as 0.685 metric tons as reflected in Table 2.

Table 2
Average Annual Yield (in MT)

Year	Cambodia	China	India	Indonesia	Malaysia	Myanmar	Philippines	Sri Lanka	Thailand	Viet Nam
2013	1.086	1.261	1.675	1.082	1.400	0.763	1.121	1.645	1.499	1.728
2014	1.073	1.208	1.576	1.052	1.37	0.765	0.942	1.182	1.488	1.696
2015	1.14	1.117	1.471	1.036	1.410	0.755	0.851	0.978	1.517	1.676
2016	1.143	1.075	1.402	1.104	1.40	0.768	0.694	0.817	1.471	1.666
2017	1.136	1.073	1.498	1.205	1.45	0.776	0.700	0.809	1.449	1.676
2018	1.09	1.07	1.473	1.161	1.43	0.849	0.710	0.761	1.553	1.66
2019	1.148	1.055	1.439	1.025	1.46	0.797	0.710	0.658	1.483	1.669
2020	1.194	0.93	1.381	1.018	1.415	0.785	0.710	0.649	1.477	1.682
2021	1.186	1.099	1.571	1.040	1.42	0.685	0.715	0.633	1.434	1.682
2022	1.212	1.095	1.465	1.061	1.435	-	0.685	0.719	1.434	1.719

3. WORLD RUBBER CONSUMPTION

The same report released by the ANRPC indicates that the world consumption of NR has registered a growth of 1.2% in 2022 due to a better-recovery observed in major consuming countries such as India, USA and Japan which resulted in the growth of the world demand for rubber.

Table 3
Consumption of Natural Rubber ('000 MT)

Countries	Quantity					Annual Growth Rate (%)			
	2018	2019	2020	2021	2022	2019	2020	2021	2022
China	5,692	5,674	5,647	5,949	5,950	-0.3	-0.5	5.4	0.0
India	1,220	1,144	1,040	1,240	1,300	-6.3	-9.0	19.2	4.8
EU-27 & UK	1,231	1,191	1,029	1,150	1,160	-3.2	-13.6	11.7	0.9
USA	987	1003	806	925	962	1.7	-19.7	14.8	4.0
Japan	706	714	581	666	677	1.1	-18.7	14.7	1.7
Thailand	627	774	692	662	654	23.5	-10.6	-4.3	-1.2
Indonesia	626	640	598	615	630	2.3	-6.6	2.8	2.4
Malaysia	542	545	543	528	537	0.5	-0.3	-2.7	1.7
Brazil	399	404	352	398	400	1.4	-12.9	13.2	0.3
Korea	367	354	298	333	343	-3.5	-16.0	11.9	3.0
Viet Nam	225	230	247	330	315	2.2	7.6	33.4	-4.5
Turkey	200	198	200	243	248	-0.9	0.8	21.5	2.1
Canada	139	140	101	128	133	0.6	-27.7	26.2	3.9
Russian Fed	125	127	112	125	128	1.2	-11.3	11.4	2.4
Others	832	790	710	764	796	-0.05	-0.1	0.07	4.2
World	13,918	13,928	12,957	14,057	14,232	0.1	-7.0	8.5	1.2

ANRPC Natural Rubber Trends and Statistics, January-February 2022

Consumption of NR by country, reflects the dominance of China as it continues to be the top user of natural rubber in the world garnering 42% of the total global consumption as shown in Figure 2. It is followed by India and EU-27 & UK at 9% and 8%, respectively. Other countries consume less than 8% of the global consumption.

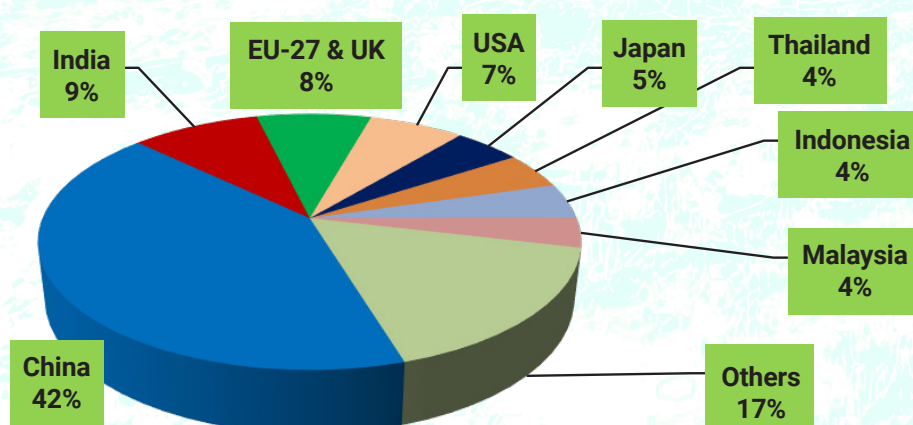
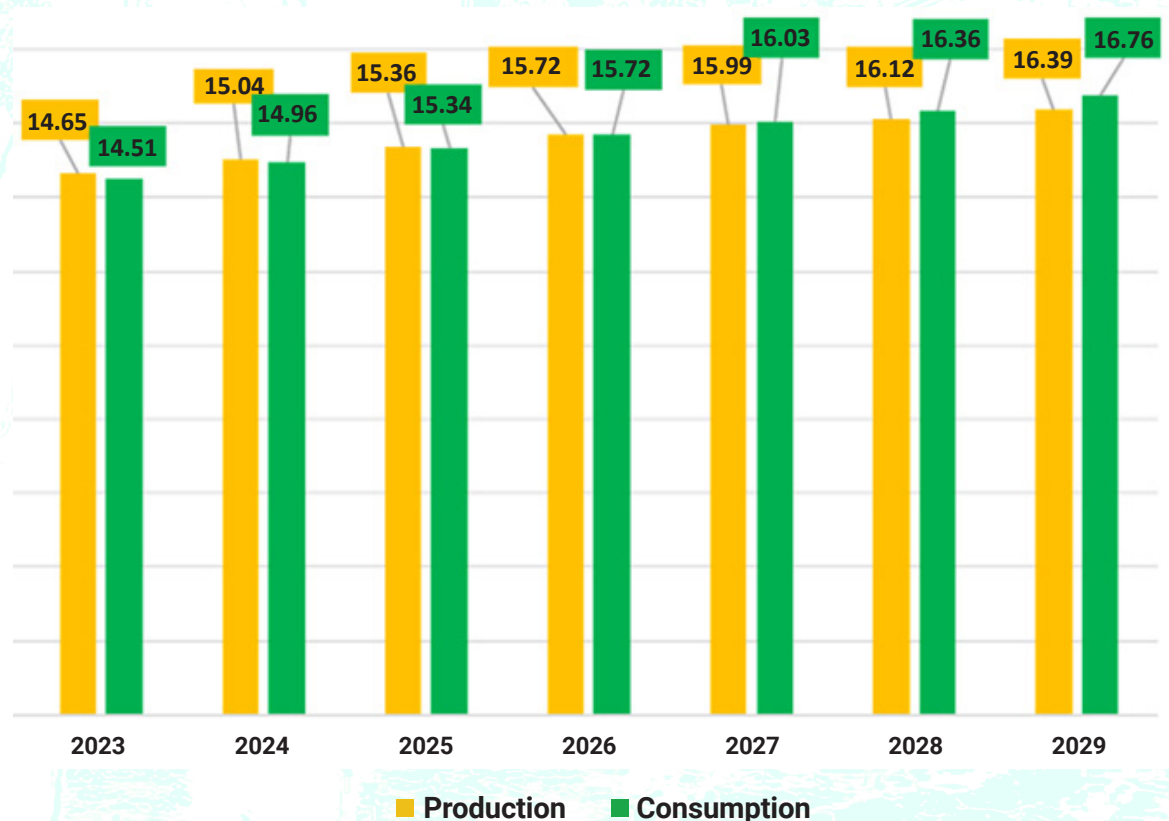


Figure 2: Global Consumption of NR

ANRPC Natural Rubber Trends and Statistics, January-February 2022

4. WORLD PROJECTED PRODUCTION & CONSUMPTION

Based on the 2020 report of International Rubber Study Group (IRSG), there will be a surplus in NR production of an average of 83,333 metric tons annually from 2023 to 2025. It is projected that by 2026, production and consumption will equal at 15.72 million metric tons. Shortage of NR supply is expected starting 2027 to 2029 due to projected increase in global rubber market size propelled by heavy demands from the automotive industries and increasing application of NR in footwears, industrial goods, construction, textiles, and other consumer products.



**Figure 3: World Project Trends in Production and Consumption
(in million MT)**

International Rubber Study Group (IRSG)

However, based on the analysis of Mr. Jom Jacob, Rubber Industry Analyst, the projected demand of rubber will start to increase in 2025 by 260,000 metric tons or an annual average increase of 870,000 metric tons over 4 years. The increase in consumption forecast is due to the improvement in the world economic outlook projected by IMF and improvement of GDP of individual countries.

5. SHORT TERM MARKET PROSPECT

The ANRPC recently identified some factors that may positively influence the NR market despite uncertainties of post-pandemic economic recovery. The organization reported that based on the latest updates given by member-governments, the world supply of NR is expected to grow by 1.9% to 14.107 million tons in 2022 while demand is projected to hit 14.232 million tons exhibiting a moderate increase of 1.2% this year. The ANRPC observed the following factors:

- a) The industry will experience a tight supply of NR in the coming months due to off-tapping season.
- b) The market improvement is driven by recovering global manufacturing activities, as well as positive growth in auto sales in major economies, and anticipated strong demand for gloves and other healthcare related products.
- c) Post-pandemic economic recovery may be triggered by the decisions of some countries like Thailand and Malaysia to reopen its borders to boost its economy.
- d) Chinese government's implementation of measures to prop up its slowing economy by reducing further its loan prime rate to 3.7% in January 2022 after a 5-point cut in December 2021.
- e) Surge in the price of crude oil prices due to several factors such as war in Ukraine and the OPEC+ decision may influence the NR market.
- f) Despite the increase in the average weekly inventory level at Shanghai Futures Exchange during the first two months of 2022 compared to the same period in 2021, the inventory of 240,000 tons is still lower than the pre-pandemic level of around 435,000 tons.

The reports of ANRPC claimed however, some factors may affect the recovery of the NR industry in short-term such as:

- a) The Ukraine-Russia crisis has led to a further soar in global commodity prices. The crisis may consequently weaken global economic recovery following the sanctions imposed on Russia.
- b) Rising inflation driven by substantial spike in the prices of crude oil could subsequently influence economic growth.
- c) The lower projection of economic growth by International Monetary Fund (IMF) and World Bank for 2022.
- d) The expectation of interest rates hike by Federal Reserve in March 2022 could influence the market.
- e) The increase in infectious rate of Covid-19 from Omicron variant may hinder national or global economic recovery.

B. PHILIPPINE RUBBER INDUSTRY PROFILE

1. INDUSTRY STRUCTURE

The Philippine Rubber Industry consists of key players from upstream, mid-stream, and downstream sectors. Upstream sector is composed of suppliers of inputs, rubber planters producing latex and cup lumps. Midstream sector includes processors of TSR/SPR (crumb rubber & air-dried sheets) and latex concentrates, traders and exporters of TSR/SPR. Downstream sector includes manufacturers of tires, automotive parts, sports products particularly tennis balls, and footwears. There are however untapped opportunities in manufacturing of health and medical devices like gloves, condoms, baby feeding nipples and other products from latex concentrates. There are likewise potentials in producing rubberized asphalt and other innovative and emerging rubber-based products.

The upstream and mid-stream activities are mostly located in Mindanao while downstream is in Luzon and Visayas. Mindanao will soon host the biggest tennis ball manufacturing in the world. With the existence of Dunlop in Bataan, the Philippines might become the largest tennis ball supplier in the world.

Figure 4 maps out various operators and enablers in all the operational nodes of the entire industry value chain.

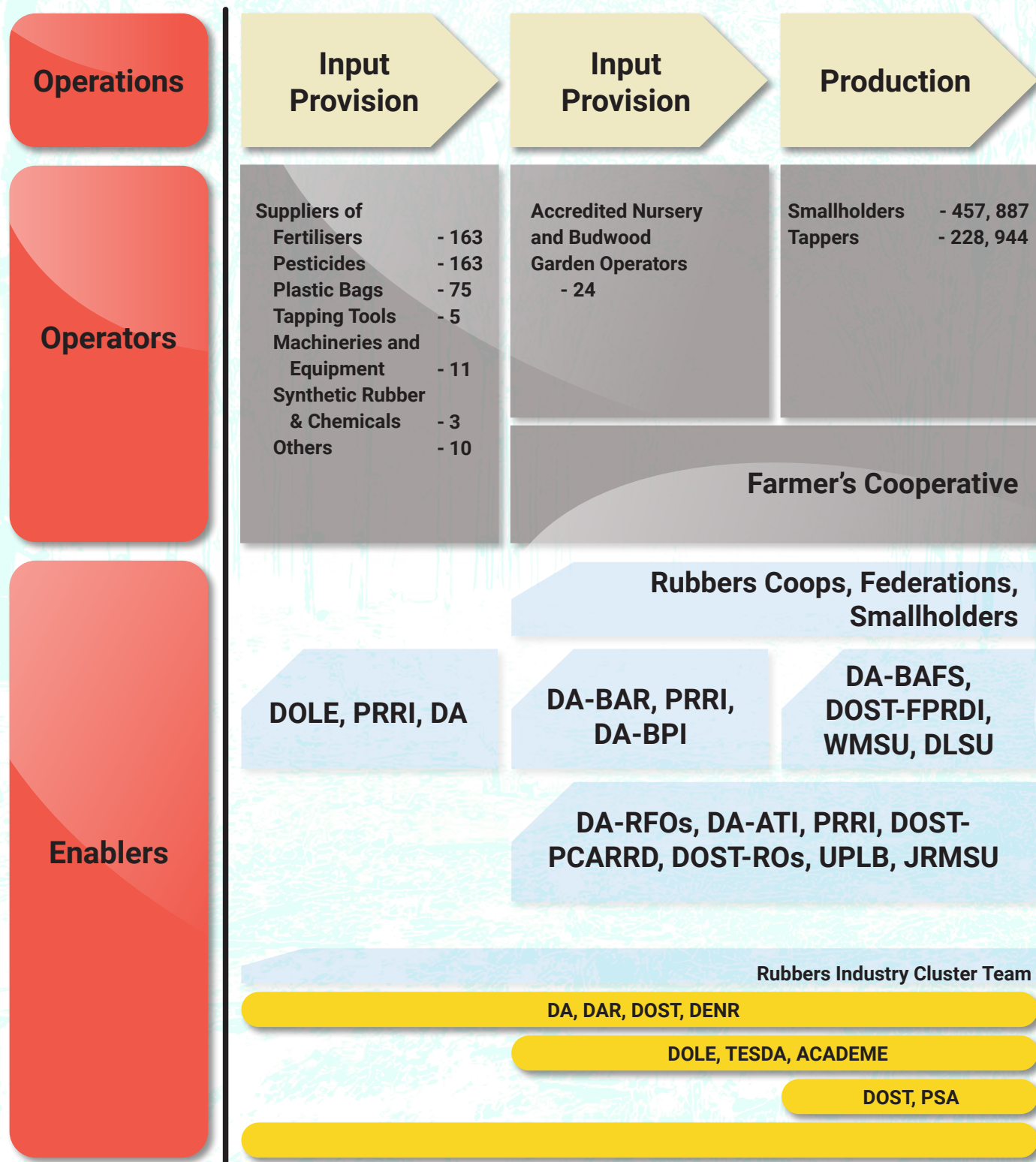
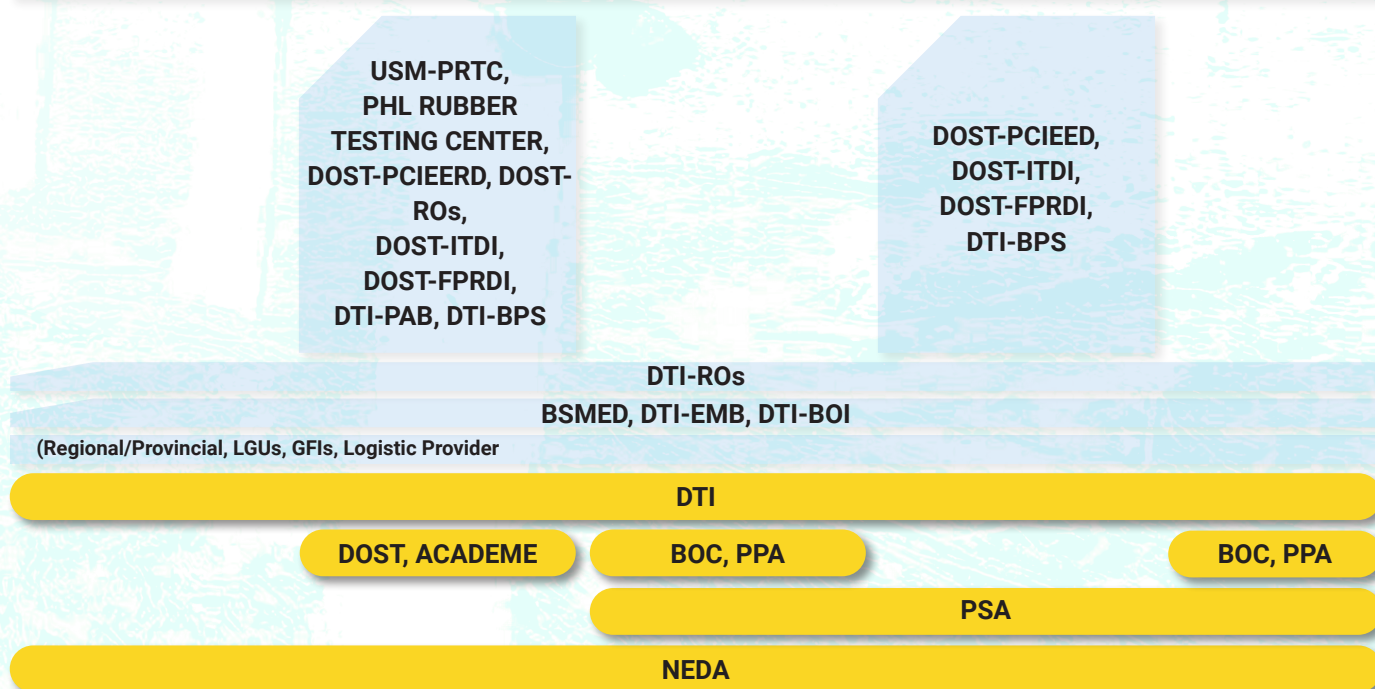


Figure 4: Value Chain Map of Rubber and Rubber-based Products



Rubber Industries, Philippine Rubber Farmers Association (PRFA) and Philippine Rubber Industries Association, Inc. (PRIA)



2. AREA PLANTED TO RUBBER

Based on the Philippine Statistics Authority (PSA) data, area planted to rubber in the Philippines continuously increased from 2018 to 2021 by a total of 12,855.85 hectares or an annual average growth rate of 1.4%, as shown in Table 3.

Table 4
Area Planted to Rubber by Region (in hectares)

Regions	2018	2019	2020	2021
1. Zamboanga Peninsula	91,195.18	91,312.00	91,669.00	99,088.00
2. SOCCSKSARGEN	63,423.00	63,543.00	63,961.00	64,908.00
3. Bangsamoro Autonomous Region in Muslim Mindanao (BARMM)	38,815.00	38,830.00	39,087.00	39,095.00
4. CARAGA	12,666.00	12,851.00	13,111.00	13,186.00
5. Davao Region	10,442.00	10,502.00	10,502.00	10,449.60
6. Northern Mindanao	8,797.45	8,818.00	8,818.01	8,816.90
7. MIMAROPA	1,879.00	1,879.00	1,879.00	1,867.00
8. Central Visayas	966	966	966	1,000.00
9. CALABARZON	435	435	435	435.00
10. Cagayan Valley Region	305.00	275.00	275.00	275.00
11. Cordillera Administrative Region	12	12	12	12
12. Bicol Region	4	4	4	4
13. Eastern Visayas	4	4	4	4
PHILIPPINES	228,943.63	229,431.00	230,723.01	239,140.50
Percentage Increase	1.18%	0.21%	0.56%	3.65%

Philippine Statistics Authority (PSA), July 2022

Mindanao is home to 98% of the rubber plantation in the country. Figure 5 indicates that the top rubber producing region is Zamboanga Peninsula recording the largest area planted to rubber in 2021 with 99,088 hectares or 41% of the total area of 239,140.50 hectares. SOCCSKSARGEN comes second with 64,908 hectares (27%), and BARMM with 39,095 hectares (16%). Other regions in Mindanao registering significant increase in areas planted to rubber are CARAGA with 13,186 hectares (6%), and Davao Region with 10,449.60 (4%) hectares. The rest of the regions identified in Table 4 registered an area of less than 10,000 hectares or less than 4% of the total area planted to rubber in the Philippines.

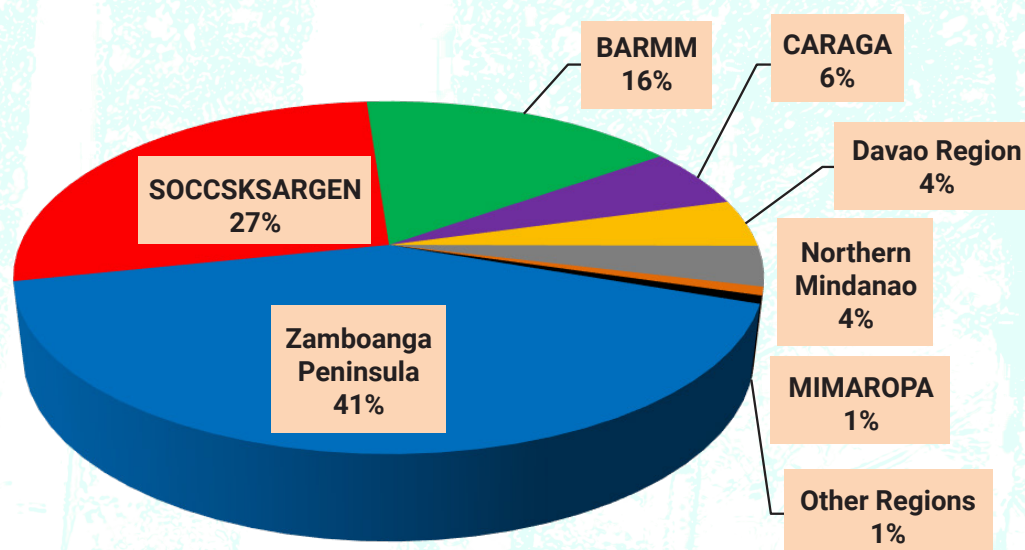


Figure 5: Percentage Share of Regions in Area Planted to Rubber

Philippine Statistics Authority (PSA), July 2022

Local industry players and international organizations questioned the accuracy of the data presented by PSA. In the absence of an industry study or primary data on the actual hectares planted to rubber, this document relies plainly on the official statistics published by PSA. This is also for consistency purposes since the same data is also being supplied by PSA to international organizations like ANRPC and IRSG.

3. AREA HARVESTED/TAPPED

The percentage of area harvested represents the actual area tapped for each year excluding new plantation and areas that are no longer productive and senile. For the past five years the percentage of the total area harvest/tapped is continuously increasing from 71% in 2018 to 86% in 2022 as reflected in Table 5.

Table 5
Area Harvested (in hectares)

Year	**Total Area Harvested	Total Area Planted	% of Area Harvested/Tapped
2018	162,000	228,943.63	71%
2019	171,800	229,431.00	75%
2020	176,900	230,723.01	77%
2021	186,400	239,140.50	78%
*2022	202,000	234,600.00	86%

*Philippine Statistics Authority (PSA), July 2022 and,
**ANRPC Natural Rubber Trends and Statistics, January-February 2022*

4. NATURAL RUBBER PRODUCTION

The data on production volume reported by PSA is in cuplump. However, to conform with international statistics on the production of natural rubber, it is converted to dry rubber and for purposes of discussion it is assumed that the country's average dry rubber content (DRC) is at 50%. Thus the data presented in this document already applied the 50% DRC per PSA Board Resolution No.9 series of 2021.

Philippines has a total NR production of 215,317.87 metric tons in 2021 which was 1.95% higher than the output in 2020 (Table 6). As shown in Figure 6, Zamboanga Peninsula is still the biggest producer of NR in 2021 contributing 38% to the country's output. It is followed by SOCCSKSARGEN at 34% or 72,207.29 metric tons of NR and BARMM with 18% or 39,088.77 metric tons. CARAGA, Northern Mindanao, Davao Region, MIMAROPA, Central Visayas, CALABARZON, and Eastern Visayas produce less than 10,000 metric tons.

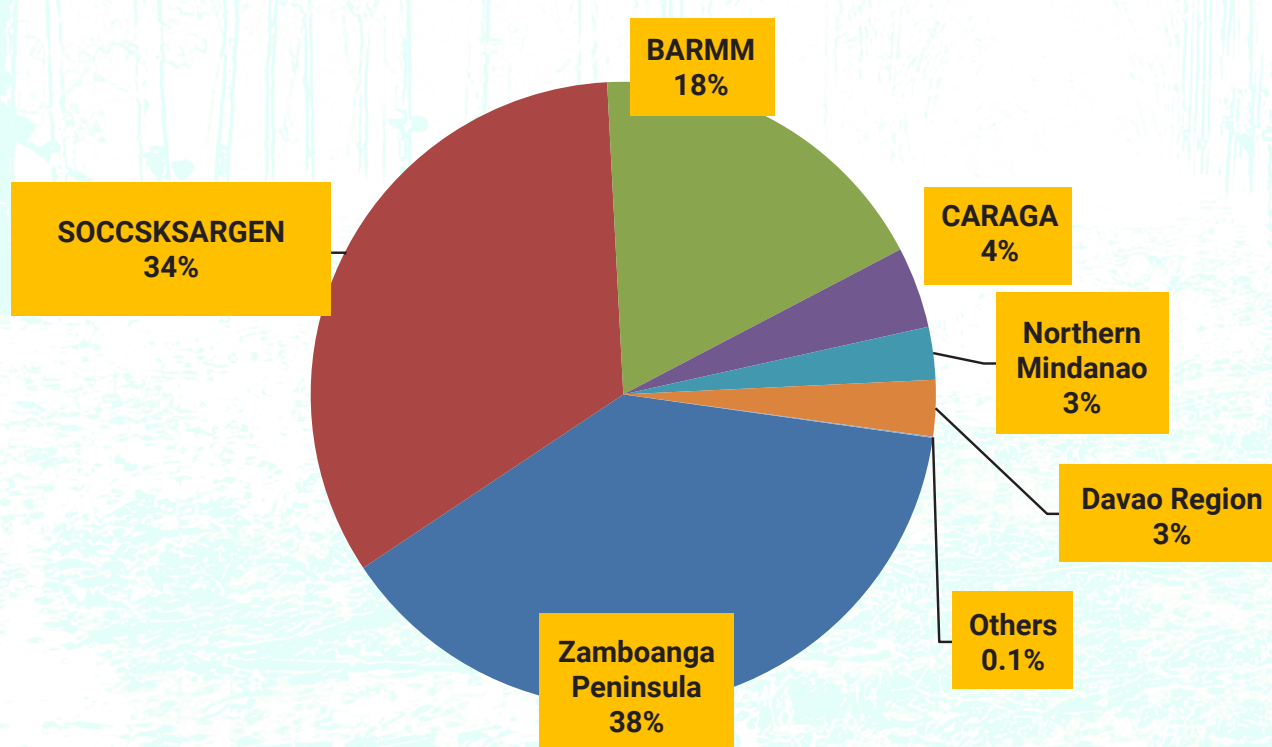


Figure 6: Percentage Share of Regions in NR Production Volume

Philippine Statistics Authority (PSA), July 2022

Table 6 indicates that from 2018 to 2019, there was an increasing trend in the country's production but dropped in 2020 by 2.15% due to the outbreak of COVID-19.

Table 6
Production Volume of NR by Region (in MT DR)

Regions	2018	2019	2020	2021
1. Zamboanga Peninsula	78,746.69	80,915.06	82,847.70	82,717.35
2. SOCCSKSARGEN	77,335.98	76,362.25	68,363.08	72,207.29
3. BARMM	35,269.52	37,309.83	38,801.42	39,088.77
4. CARAGA	7,808.26	8,375.55	8,814.22	9,039.12
5. Davao Region	5,731.68	5,882.94	6,052.63	6,257.43
6. Northern Mindanao	6,688.90	6,880.30	6,207.89	5,870.04
7. MIMAROPA	69.95	72.51	73.40	81.41
8. Central Visayas	15.22	18.89	24.39	37.21
9. CALABARZON	6.60	6.37	6.20	7.64
10. Eastern Visayas	12.67	13.69	12.65	11.63
PHILIPPINES		215,837.38	211,203.55	215,317.87
Percentage Increase (Decrease)	4.03%	1.96%	-2.15%	1.95%

Philippine Statistics Authority (PSA), July 2022

5. MARKET PERFORMANCE

1) Supply Chain of Philippine Natural Rubber

In 2015, Dr. Rolando Dy of the University of Asia and the Pacific (UA&P) presented an analysis on the flow of natural rubber from the processors to the end market. Figure 7 tracks down the movement of Philippine NR products both in the domestic and export markets. NR as an intermediate raw material to both industrial products and consumer goods is either marketed locally to rubber-based product manufacturers located in industrial areas and export processing zones in Luzon or exported in raw (cuplump) to Malaysia and in processed form (TSR/SPR) to China, Taiwan, Japan, Korea, India and other countries.

The rubber manufacturers in the country produce tire and non-tire products which are sold locally and exported. Meanwhile, only three (3) rubber processing plants in the country are able to market its products to Yokohama Tire Philippines (YTPI). This is so because currently only five (5) NR processors are ISO certified which is the minimum requirement for supplying YTPI and the export market. YTPI is the single biggest user of SPR and the only car tire manufacturer in the country. Located in an export processing zone in Central Luzon, YTPI exports 93% of Yokohama Tires while only 7% of its production is distributed to dealers in the Philippines. While there are various processors and traders of cuplumps in the country, industry source claimed that more than 50% of the country's NR production is exported in raw to Malaysia leaving some processing plants to operate at 50% to 60% capacity utilization. Although recently there has been a shift to processing of NR for export as SPR which could favorably translate to bigger utilization of processing plants production capacity.

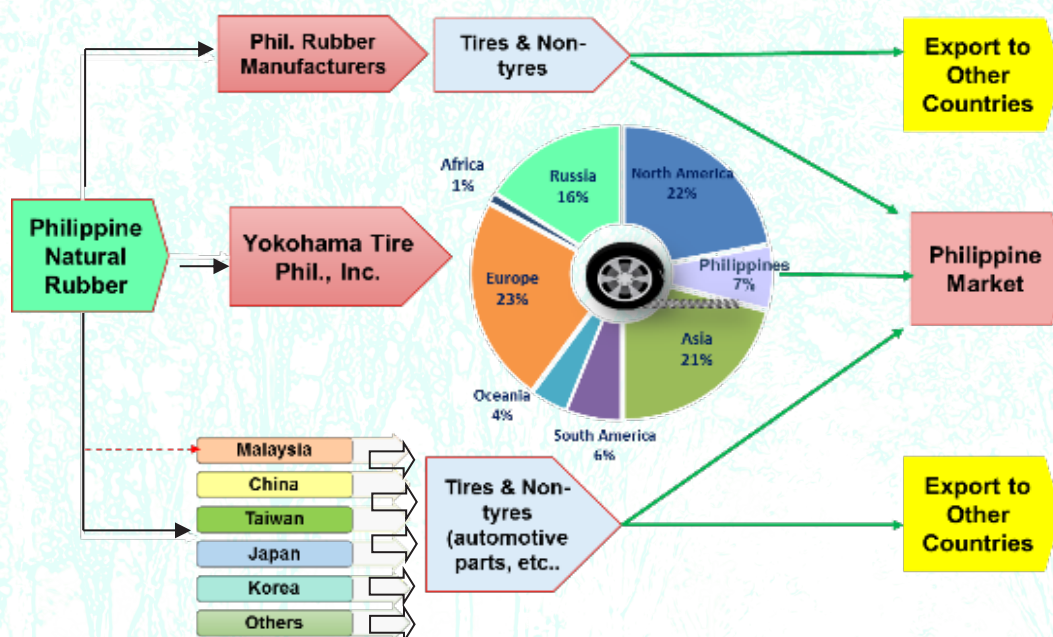


Figure 7: Philippine Natural Rubber Global Link

Dr. Rolando Dy, PRIME 2015

2) Domestic Market

Currently, the total estimated domestic consumption of natural rubber of local manufacturers amounts to 35,000 metric tons. Yokohama Tires Philippines, Incorporated (YTPI) remains to be the biggest user of natural rubber sourcing 51% of its total consumption locally, while the remaining percentage is utilized by PRIA members and manufacturers located in the export processing zones.



QUICK FACTS

NR Annual Estimated Consumption of Local Manufacturers (MT)

Particulars	Est. Annual Consumption
Yokohama Tires Phil. Inc	18,000
PRIA Members	8,500
Non-PRIA Members	8,500
Total	35,000

Figure 8: Estimated Consumption of Local Manufacturers (MT)

Mr. Elpidio Carlota of Philippine Rubber Industries Association, Inc. (PRIA)

Given the statistics released by PSA (2022) on production of NR in 2021 of 215,317.87 metric tons, where more than 50% is reportedly exported in cuplump form to Malaysia, there should have been 107,658.94 metric tons assumed to have been processed to TSR/SPR and sold to domestic users and the export market. Since the domestic requirement is estimated to be only 35,000 metric tons or only 33%, so it is further assumed that 67% of TSR/SPR production is exported.

3) Rubber Trading & Auction Centers

Rubber Trading and Auction Centers (RTACs) or locally known as “Bagsakan Centers” serve as a venue for farmers, traders and consolidators to transact business under the supervision of the local government units (LGUs).

Currently, there are fifty-six (56) RTACs in the country of which 17 centers are located in Zamboanga Peninsula and 39 in North Cotabato Province. The establishment of RTACs in North Cotabato is thru the Executive Order No. 42 dated October 24, 2016 by Governor Emmy Lou Taliño- Mendoza – An Order Establishing the Cotabato Rubber Trading Center, Otherwise Known as “Bagsakan ng Rubber Cup lump” In Strategic Areas of Cotabato Province.

Most trading centers are provided with weighing scales by the Department of Trade and Industry through its Shared Service Facility (SSF) Program. The weighing scales are regularly calibrated in coordination with DOST and the concerned local government units to prevent or minimize manipulation of weighing by some unscrupulous traders or buying agents. In some trading centers, price reference is posted to serve as guide for farmers in their decision to sell.



4) Export Market

Export of natural rubber and rubber-based products in 2018 amounted to USD 486.35 million and increased to USD 578.34 million in 2021, recording an average annual growth rate of 7.48%.

Figure 9 indicates a decrease in total exports value in 2020 which could be attributed to the COVID-19 pandemic affecting all rubber producing countries. Majority of the processing and manufacturing plants were temporarily closed due to travel and health restrictions. Thus, stakeholders opted to export raw rubber resulting in the increase of the exports value from USD 79.14 million in 2019 to USD 161.597 million in 2021 registering an increase of more than 100% over a 3-year period.

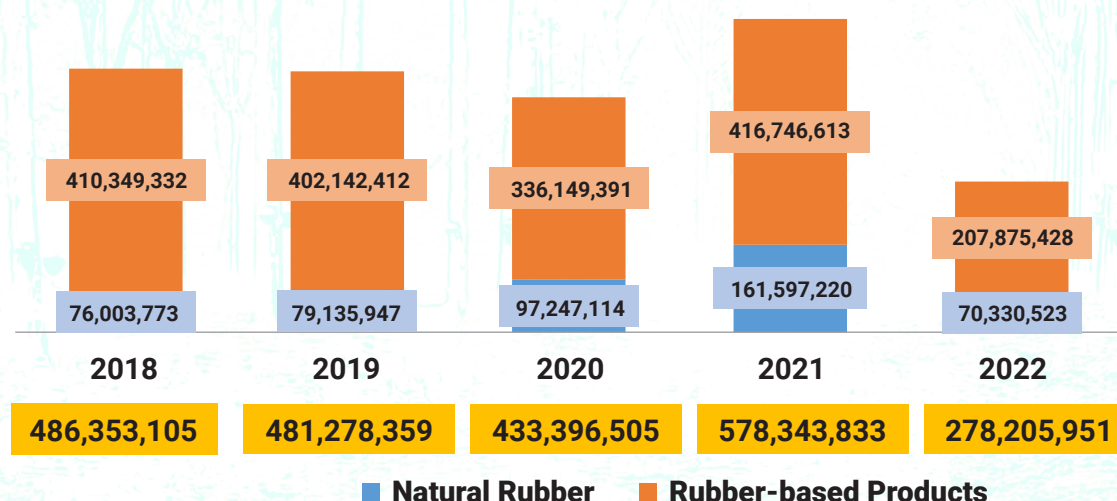


Figure 9: Philippine Export Value of Rubber and Rubber-based Products (in USD)

DTI-Export Marketing Bureau (DTI-EMB), June 2022

Figure 10 shows the export destination of rubber and rubber-based products in 2021. Most of the country's export of rubber products are cornered by United States of America accounting for 32% of the total export value of rubber and rubber-based products. Malaysia and Japan shared 20% and 15%, respectively.

China which is the biggest importer of natural rubber in the world shared only 7% of the total Philippine exports of rubber and rubber products. This is one lucrative international market that local exporters should explore more. China consumes 42% of the total world production of natural rubber. In fact, during the first five (5) months of 2022, China imported a total volume of 2.22 million tons of natural rubber including mixture rubber and rubber compounds, an increase of 5.7% from the same period in the previous year (Jom Jacob, July 2022).

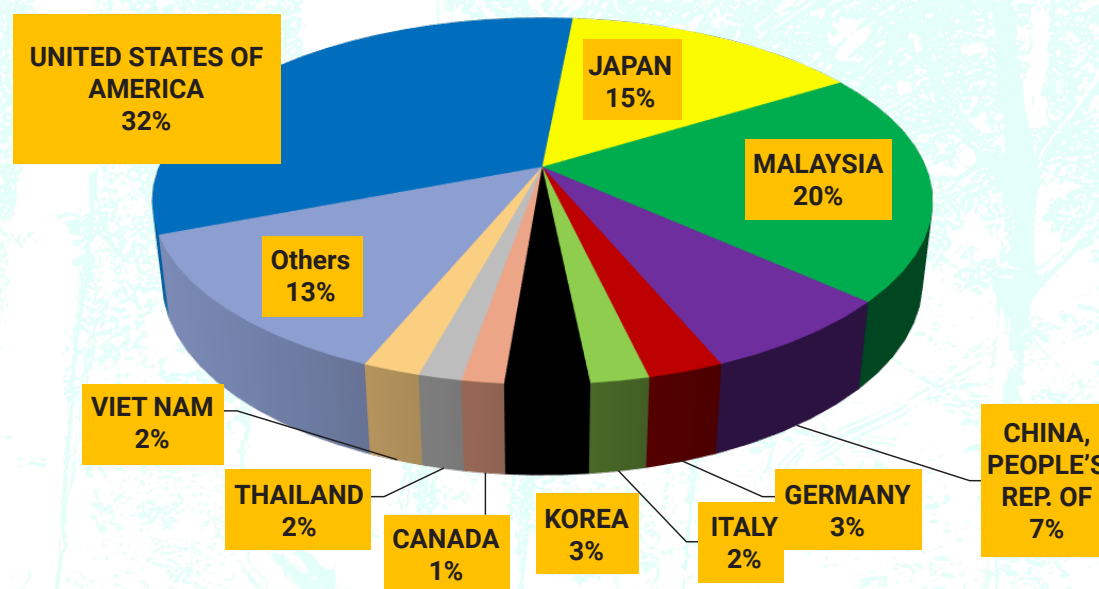


Figure 10: Export Destination of Rubber and Rubber-based Products (2021)

DTI-Export Marketing Bureau (DTI-EMB), June 2022

Other countries contributed less than 10% of the exports value of Philippine rubber and rubber products. Germany and Italy in EU are potential markets that local exporters of natural rubber should consider. The same attention must be done for Korea and Canada to expand market opportunities for natural rubber producers and rubber-based products manufacturers.

6. RUBBER PRICE MANAGEMENT SYSTEM

The Regional Price Management System (RPMS) was institutionalized in 2014 as a major program of the Zamboanga Peninsula Rubber Industry Cluster Team (ZamPen RUBBER). The RPMS has since then been benefiting thousands of small farmers who were taught to calculate the rubber price reference. The price reference serves as basis for farmers to negotiate with the traders and/or buying agents who in the past several years have been allegedly dictating the price taking advantage of farmers' lack of access to market information. Since the calculated price is only for reference purposes, the actual price is still subject to negotiations between buyer and seller and depends largely on the quality of cuplump which is actually one of the major factors in determining the price.

The formula in calculating the price reference was the results of series of meetings, consultations, and agreements with the industry stakeholders. The RPMS is reviewed regularly to address concerns raised by either the traders or the farmers. The price reference is based on the Malaysian Rubber Exchange managed by the Malaysian Rubber Board (SMR 20, Seller's Offer Price) which is accessible at www3.lgm.gov.my/mre.

Considering that natural rubber is a global commodity, various factors usually influence rubber prices such as supply, consumption, weather in the rubber producing countries, foreign exchange rate, crude oil prices, policy changes in major markets, as well as adverse changes in geo-political environment.

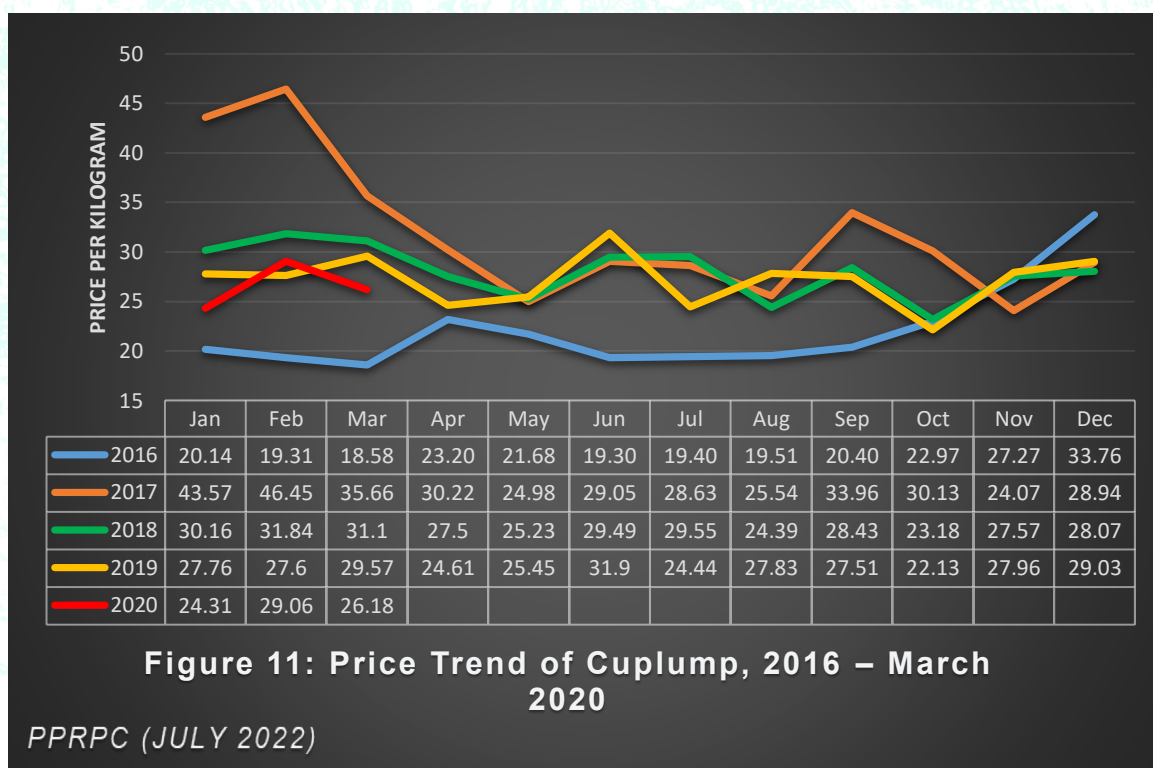


Figure 11 shows the price trend of cuplump from January 2016 to March 2020 in the Philippines. With the surge of COVID-19 cases in 2020, the data source stops its monitoring activities due to lockdown in all areas in the regions. Based on Figure 11, rubber price was low in 2016 due to high inventory in the international market and the decrease in demand in China. As mentioned repeatedly, China is the largest rubber consumer in the world, so a slight downward movement in the manufacturing activities in the country in most instances adversely affects the global consumption of natural rubber.

However, there was a spike in prices of natural rubber in the early part of 2017 due probably to the growth of China's automobile sector during the year. Likewise, during the same period, Thailand experienced extensive flooding resulting in damage to infrastructure that significantly hampered rubber production. Considering that Thailand is one of the major rubber-producing countries, this phenomenon resulted in a shortage of NR supply triggering an increase in prices.

C. VALUE CHAIN OPERATORS

This portion discusses various industry operators and their corresponding contributions in the entire value chain of rubber and rubber products.

The industry is composed of key players ranging from suppliers of inputs for production and maintenance to manufacturers of rubber-based products. As reflected in the value chain map, industry players include nursery and bud wood garden operators, planters who are more than 90% small farmers, traders of cuplumps and operators of trading centers in strategic areas, processors of TSR/SPR (crumb rubber and ADS), traders and exporters of natural rubber (TSR/SPR), and manufacturers of tires, automotive parts, sports products, and footwear.

The upstream sector of the industry is composed of different rubber holdings. Over 90% of rubber farms are small growers and the rest are rubber-based cooperatives (Agrarian Reform Cooperatives), privately-owned and corporate plantations.

1. INDUSTRY ASSOCIATIONS

There are two (2) major national industry associations. The Philippine Rubber Industries Association, Inc. (PRIA) based in Manila, and the newly organized Philippine Rubber Farmers Association, Inc. (PRFA) based in North Cotabato. There are also provincial farmers' associations in most rubber producing provinces in Mindanao and in the Province of Palawan in MIMAROPA Region.

1.1 Philippine Rubber Industries Association, Inc. (PRIA)

Some of the manufacturers in the country are members of the Philippine Rubber Industries Association, Inc. (PRIA). The association has 67 members of which industry players of the rubber value chain are well-represented. The following are the classification of PRIA members:

- a) 6 Tire Manufacturers/Suppliers & Tire Retreaders
- b) 18 Automotive, Industrial Parts & Sporting Goods Manufacturers
- c) 14 Natural Rubber Processors/Traders
- d) 3 Footwear Manufacturers
- e) 3 Latex-based Product Manufacturers
- f) 18 Synthetic Rubber & Chemicals
- g) 5 Other Suppliers

PRIA was formed in 1979 with the merger of the Philippine Rubber Manufacturers' Association (PHIRMA) and the Rubber Industries Association of the Philippines (RIAP) by prominent personalities in the rubber industries. The Philippine Rubber Industries Association, Inc. (PRIA) has become a single voice of the rubber industries in the country since then. The membership of PRIA is composed of companies from diverse fields in the manufacturing, trading, input and chemical suppliers, producers and processors (www.priainc.org).

1.2 Philippine Rubber Farmers Association, Inc. (PRFA)

The PRFA was organized by the Department of Agriculture during the Rubber Farmers' Assembly in Kidapawan, North Cotabato on January 21, 2017. The Department of Agriculture intended to organize the rubber farmers down to the barangay level in all rubber-producing regions nationwide. Existing regional and provincial farmers' associations are expected to affiliate with PRFA creating a stronger and more empowered rubber smallholders' group in the country. The momentum however has slowed down as soon as the leadership of the agency was changed in the later part of 2018.

2. PROCESSORS OF TSR/SPR (CRUMB RUBBER & ADS/RSS)

There are forty-one (41) processors operating mostly in Mindanao. Twenty-two (22) are millers of TSR/SPR (crumb rubber) while nineteen (19) of them are village-type processors of air-dried sheets and/or ribbed smoked-sheet (ADS).

Table 7
No. of Village-type ADS/RSS Processors

Regions	Number of ADS/RSS Processing Plants
Central Visayas	6
Zamboanga Peninsula	1
Northern Mindanao	2
SOCCSKSARGEN	5
MIMAROPA	5
TOTAL	19

DTI, 2022

Table 8 shows that the total annual production capacity of the twenty-two (22) TSR/SPR operating processing plants is 116,496 metric tons. Nine (9) of these processors are located in Zamboanga Peninsula contributing 60% of the total production capacity.

There are also five (5) non-operational processing plants in the country where two (2) are located in Zamboanga Peninsula, two (2) in the Province of Basilan in BARMM and one (1) in Caraga Region. In Basilan, additional processing plants are being established by the provincial government to cater to the milling needs of the small holders in the area.

Table 8
Annual Capacity of TSR/SPR Processing Plants

Regions		Processing Plants	Annual Plant Capacity (MT)
Region IX	1	CTK Asia Rubber Corp	30,000
	2	FJC Agro Industries	3,600
	3	MJ Saha Rubber	3,600
	4	Philippine Pioneer Rubber Products Corporation (PPRPC)	7,200
	5	Standard Rubber Development Corporation	12,000
	6	Tire King Rubber Products	3,600
	7	United Workers Agrarian Reform Beneficiaries MPC (UWARBMPC)	3,600
	8	ZANORTE Palm-Rubber Plantation, Inc.	3,600
	9	New Atlas Rubber Industries	2,400
			69,600
Region X	1	Pioneer Amaresa	2,400
			2,400
Region XI	1	FARMA Rubber Industries, Inc.	7,200
			7,200
Region XII	1	AO Rubber Plant Corporation	2,400
	2	DAVCO Development Corporation	3,600
	3	Kian Tek Rubber Factory Corp	7,200
	4	Pioneer Amaresa	4,800
	5	Platinum Rubber Development Inc.	3,600
	6	Supreme Solutions Strategist, Inc-Olmecs & Co. Devt. Corp	3,600
	7	Banisilan Rubber Farmers Arb Cooperative	2,400
			27,600
Region XIII	1	VPO Rubber Processing Plant	2,400
			2,400
BARMM	1	EJN Processing Plant	3,600
	2	ASL Rubber Processing Plant	1,056
	3	Lumbang Rubber Processing Plant	2,640
			7,296
Total			116,496

Industry Data, May 2022

3. RUBBER-BASED PRODUCT MANUFACTURERS

The processed rubber is either sold to manufacturers in the country or exported. The manufacturing sector in the country consists of four sub-sectors:

- 3.1 Tires – Car, motorcycle, bicycle
- 3.2 Automotive, industrial parts and sporting good, transmission belts, rubber conveyor, radiator and fuel hoses, rubber rings, gaskets, linings, bearing pads, OEM parts, tennis balls
- 3.3 Footwear – Rubber soles, sandals, boots
- 3.4 Latex –baby feeding nipples, balloons, medicine droppers, and hoses

The other sub-sectors are engaged in the manufacturing of synthetic rubber, chemicals and other supplies needed as inputs by the industry.

Based on initial data from PRIA, a total of 23 firms are using natural rubber requiring about 8,500 metric tons annually. The DTI has been however experiencing difficulty in collecting data on domestic consumption not just from the members of PRIA but more so from non-members that are located in the PEZA-accredited export processing zones.

4. YOKOHAMA TIRE PHILIPPINES, INC. (YTPI)

Yokohama Tire Philippines, Inc. (YTPI) is the only car tire manufacturing company in the Philippines. YTPI is considered as the largest individual user of natural rubber in the country. With its expansion from 20,000 tires in 2012 to 50,000 tires per day in 2017, this makes the company the second largest Yokohama tire manufacturing plant in the world.

As part of its commitment to help develop the Philippine Rubber Industry, YTPI declared to support the rubber industry cluster by expanding the use of local NR as raw materials.

Furthermore, as a result of the efforts of the DTI in cooperation with JICA in several meetings with YTPI, the latter increased their local sourcing from 15% in 2012 to 55% and 54% in 2018 and 2019, respectively as shown in Table 9. The increase is attributed to the improvement of the quality of natural rubber supplied by local processors particularly those who took bold steps in seeking ISO certification or alignment to meet the requirements of the market. Local sourcing decreased however, in 2020 and in 2021 to only 49% due to unstable inventory of SPR-20 caused by the late delivery of some local suppliers.

Table 9
Percentage Share of YTPI NR Consumption by Country Source

Sources	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
THAILAND (STR5 CV60)	0%	0%	1%	1%	0%	0%	0%	0%	0%	0%
THAILAND (STR20)	22%	23%	25%	22%	23%	23%	23%	22%	23%	24%
INDONESIA (SIR20)	63%	56%	54%	45%	42%	28%	21%	24%	28%	27%
PHIL (SPR20)	15%	21%	21%	33%	35%	49%	55%	54%	49%	49%
TOTAL	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Yokohama Tire Philippines, Inc. (YTPI), 2021

As shown in Figure 12, the tire production of YTPI is fluctuating, thus, raw material requirements follow the same pattern. As observed, YTPI increased its local NR consumption from 1,316 metric tons in 2010 to 8,979 metric tons in 2019. However, this went down to 6,761 metric tons in 2020 due to the delay in delivery as mentioned earlier. The lifting of some COVID19 restrictions in 2021, saw an improvement in YTPI's consumption of natural rubber as the company recorded a total utilization of 8,777 metric tons.

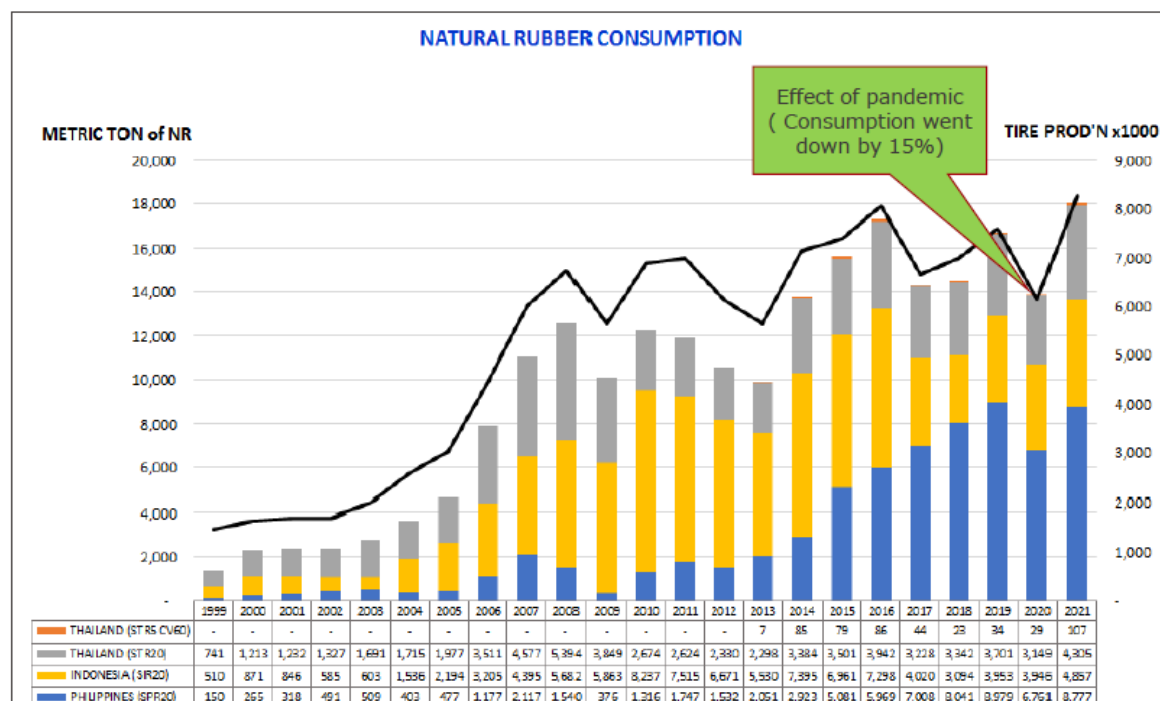


Figure 12: YTPI NR Consumption in MT (1999-2021)

Yokohama Tire Philippines, Inc. (YTPI), 2021

5. RUBBER-BASED MANUFACTURERS LOCATED IN PEZA EXPORT PROCESSING ZONES

There are 36 registered enterprises engaged in the manufacture for export of rubber products that are located in the Philippine Economic Zone Authority (PEZA). The following are the distribution:

Table 10
Number of Registered Enterprises into Manufacturing of Rubber Products located in PEZA

Economic Zone	Number of Registered Enterprises	Location
Carmelray Industrial Park	2	Calamba, Laguna
Cavite Economic Zone	3	Cavite
Daiichi Industrial Park	1	Silang, Cavite
First Cavite Industrial Estate	1	Dasmariñas, Cavite
First Philippine Industrial Park	4	Batangas
Greenfield Automotive Park	2	Santa Rosa, Laguna
Laguna International Industrial Park	1	Biñan, Laguna
Laguna Technopark	3	Biñan, Laguna
Light Industry and Science Park	6	Sto. Tomas, Batangas
Lima Technology Center	6	Batangas
Mactan Economic Zone	3	Lapu-Lapu, Cebu
Pampanga Economic Zone	1	Angeles, Pampanga
People's Technology Complex	2	Carmona, Cavite
Suntrust Ecotown Tanza	1	Tanza, Cavite
Total	36	

Philippine Economic Zone Authority, June 2022

6. RUBBERWOOD PROCESSING FACILITIES

The Forest Product Development and Research Institute (FPRDI) of the Department of Science and Technology (DOST) established a rubberwood processing plant in Naga, Zamboanga Sibugay to serve the needs of the partner-cooperative, the Tamberan Agrarian Reform Beneficiaries Cooperative (TARBEMCO) as well as other rubber cooperatives and individual farmers with rubber plantations where trees aging 35 years and above already considered senile or unproductive. The objective is primarily to process treated and kiln-dried lumber for use in high value furniture products, mouldings and joineries, and other wood-based products.

The project is an offshoot of the DOST-FPRDI's active participation in the PHLRUBBER Study Mission to India in 2014. The group visited one of the biggest

rubberwood processing plants in Kerala with the objective to primarily acquire technology for transfer to interested MSMEs back in the Philippines. The project with a total cost of P57.7 million was launched in November 2018 and started operation in 2021 making products such as beds, chairs, tables, doors, baby cribs, shelves, and other wood-based products. However, the operator reported early this year that the facility stopped its production due to skills deficiency of the workers. The workers also refused to accept wage below the government set minimum wage. Worst more, one of the equipment has been declared unserviceable due to wear and tear of certain parts which require immediate replacement.



7. ENABLERS AND SUPPORTERS

The different programs, projects and activities for the development of the rubber industry are initiated and implemented by the member-agencies of the Philippine Rubber Technical Working Group (PHLRUBBER).

The PHLRUBBER was formed on June 22, 2012 as a convergence of government agencies, local government units, academe, government financing institutions, private sector, and other institutions committed to help promote and sustain the development of the rubber industry. Table 11 shows the industry enablers and supporters and their corresponding functions and roles in the promotion and development of the rubber industry.

Table 11
Philippine Rubber Industry Enablers and Supporters

Industry Functions	Number of Registered Enterprises
Production and Productivity Improvement	<ul style="list-style-type: none"> ➤ Department of Agriculture (DA) <ul style="list-style-type: none"> ○ Bureau of Plant Industry (BPI) ○ Philippine Rubber Research Institute (PRRI) ○ Agricultural Training Institute (ATI) ➤ Philippine Statistics Authority (PSA) ➤ Department of Environment and Natural Resources- Forest Management Bureau (DENR-FMB) ➤ Department of Science and Technology-Philippine Council for Agriculture, Aquatic and Natural Resources Research and Development (DOST-PCAARRD) ➤ Technical Education and Skills Development Authority (TESDA) ➤ Department of Agrarian Reform (DAR) ➤ Local Government Units (LGUs)
Processing and Manufacturing	<ul style="list-style-type: none"> ➤ Department of Trade and Industry (DTI) <ul style="list-style-type: none"> ○ Philippine Accreditation Bureau (PAB) ○ Board of Investments (BOI) ➤ Department of Science and Technology Philippine Council for Industry, Energy, and Emerging Technology Research and Development (DOST-PCIEERD) ➤ Department of Agriculture (DA)
Domestic & Export Marketing	<ul style="list-style-type: none"> ➤ Department of Trade and Industry (DTI) <ul style="list-style-type: none"> ○ Bureau of Philippine Standards ○ Export Marketing Bureau ○ Bureau of Small and Medium Enterprise Development ➤ Department of Agriculture (DA) ➤ Philippine Rubber Industries Association, Inc (PRIA)
Research & Development and Extension	<ul style="list-style-type: none"> ➤ Department of Science and Technology (DOST) <ul style="list-style-type: none"> ○ Philippine Council for Industry, Energy, and Emerging Technology Research and Development (DOST-PCIEERD) ○ Philippine Council for Agriculture, Aquatic and Natural Resources Research and Development (DOST-PCAARRD) ➤ Department of Agriculture (DA) <ul style="list-style-type: none"> ○ Philippine Rubber Research Institute (PRRI) ○ Bureau of Agricultural Research ➤ Philippine Statistics Authority (PSA) ➤ Western Mindanao State University (WMSU) ➤ University of the Philippines-Los Baños (UPLB) ➤ University of the Philippines-Diliman (UP-Diliman) ➤ Jose Rizal Memorial State University (JRMSU) ➤ University of Southern Mindanao (USM) ➤ Central Mindanao University (CMU) ➤ Palawan State University (PSU) ➤ Western Philippines University-Palawan (WPU) ➤ Cotabato Foundation College of Science and Technology (CFCST) ➤ Southern Luzon State University (SLSU) ➤ Agusan del Sur State University (ASSU)
Finance & Investment	<ul style="list-style-type: none"> ➤ Landbank of the Philippines (LBP) ➤ Development Bank of the Philippines (DBP) ➤ Department of Trade and Industry (DTI)- Small Business Corporation (SBCorp) ➤ Local Government Units (LGUs) and Other Financing Institutions
Information/ Policy Formulation and Advocacy	<ul style="list-style-type: none"> ➤ Department of Agriculture (DA) <ul style="list-style-type: none"> ○ Bureau of Agricultural and Fisheries Product Standards (BAFS) ○ Philippine Council for Agriculture and Fisheries (PCAF) ➤ Philippine Statistics Authority (PSA) ➤ Department of Environment and Natural Resources (DENR) ➤ Department of Trade and Industry (DTI) ➤ Department of Science and Technology (DOST) ➤ Technical Education and Skills Development Authority (TESDA) ➤ Mindanao Development Authority (MinDA) ➤ Department of Labor and Employment (DOLE) ➤ Department of Agrarian Reform (DAR) ➤ Department of Interior and Local Government (DILG) ➤ Local Government Units (LGUs) and Academe



Industry Performance 2018-2022

II. INDUSTRY PERFORMANCE

The Philippine Rubber Technical Working Group (PHLRUBBER) was formally organized in June 2012 as an AdHoc team to oversee and coordinate the development of the industry. The group which is attached to the Department of Trade and Industry, is composed of government agencies, private industry organizations, academe, and R&D institutions. The PHLRUBBER is a convergence of public and private stakeholders committed to help promote and sustain the development of the rubber industry, enhance its competitiveness and ensure sustainable practices for inclusive growth.

The PHLRUBBER is chaired by a private sector, and co-chaired by Department of Agriculture (for upstream sector) and Department of Trade and Industry (for downstream sector). The latter serves also as the national secretariat. The group created six (6) Action Teams responsible for the effective implementation of the programs and projects under the six (6) major development strategic agenda.

The Consolidated Rubber Industry Performance is the product of the collective initiatives and implementations of the 2018-2022 Philippine Rubber Industry Roadmap by the members of the PHLRUBBER and other support organizations. The performance covers the six major development strategic agenda namely: 1) Production & Productivity Improvement; 2) Processing & Manufacturing; 3) Domestic & Export Marketing; 4) Research, Development and Extension; 5) Finance & Investment Promotion; and 6) Information/Policy Formulation and Advocacy.

A. FIVE-YEAR MILESTONES

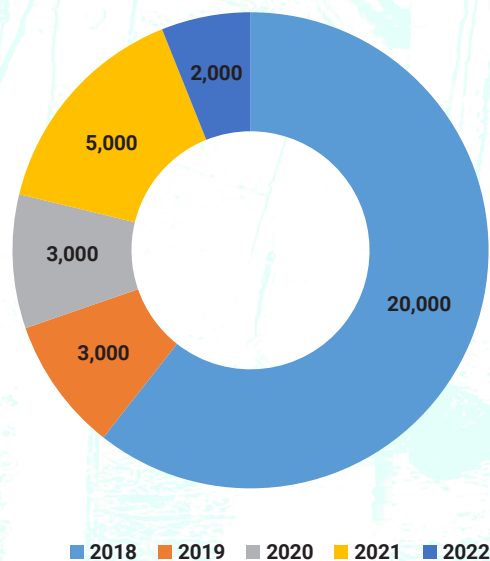
Since the creation of the PHLRUBBER, various projects, programs and activities (PPAs) were initiated and conducted by its members that have resulted to the performance of the industry as shown on Table 12.

For the period covering 2018 to 2022, the industry was able to generate a total of 16,500 jobs, PhP 3.3 billion in investments, PhP 17.91 billion in domestic sales and an export value of USD 2.26 billion. Export of rubber-based products hit USD1.77 billion about 78% of the total industry exports, while export of natural rubber amounted to a five-year total of USD0.48 billion or 22% of the total exports of rubber and rubber-based products.

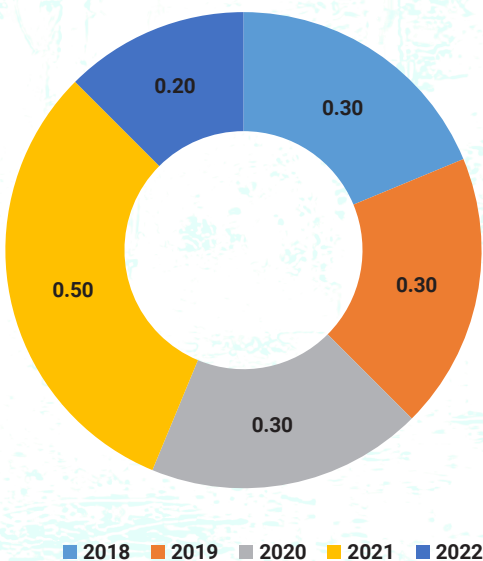
As shown in Table 12, the average productivity of the rubber farms in the country is slowly increasing from 0.71 metric tons in 2018 to 0.715 metric tons in 2021 which may be attributed to the various assistance of the PHLRUBBER Member-agencies. However, for 2022, the country is projected to have a yield of 0.69 metric tons which is 3.50% lower compared to 2021 yield. On the accumulated area planted to rubber, the industry was able to accomplish 234,600 hectares which is 6% lower than the target of 236,799 hectares in 2022.

On the other hand, the industry failed to achieve the target on volume of production and area tapped/harvested which the percentage of accomplishment ranged only from 79% to 89% over the past-five years. With this, the Production and Productivity Action Team shall increase the projects and activities that will contribute to the performance of these indicators.

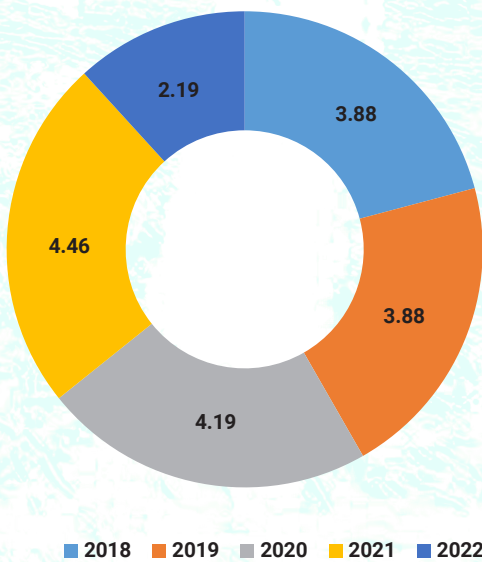
In terms of the farmer’s income, which is the most vital indicator, the industry was not able to alleviate rubber farmers from the poverty which is evident in Table 12. The rubber farmers generated only an average monthly income of PhP 7,783.08 which is below by 47% of the poverty threshold of PhP 14,498.00. Thus, to be able to alleviate the farmers from poverty, the industry must concentrate on providing programs or assistance that would increase the productivity of their farms since the government does not have control over the price of NR.



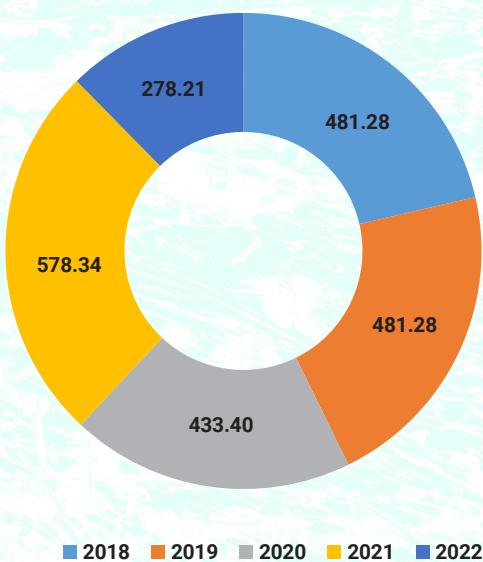
33,000
Jobs Created



PhP 3.3 B
Investment



PhP 17.91 B
Domestic Sales



USD 2.25 B
Exports Sales

Table 12
Rubber Industry Performance Milestones

Item / Year	2018			2019		
	Target	Accomp	% Accomp	Target	Accomp	% Accomp
¹ Yield (MT/ha)	0.8	0.71	89%	0.8	0.71	89%
¹ Volume of Production ('000 MT)	148.38	105.84	71%	174.15	108	62%
¹ Area Harvested/ Tapped (hectares)	185,476	162,000	87%	217,687	171,800	79%
Area Planted	235,603	228,943.63	97%	245,123	229,431	94%
¹ Increment in primary production areas	6,720	10,000	149%	9,520	1,500	16%
² New Jobs Created	13,440	20,000	149%	19,040	3,000	16%
Farmers' Income (PSA 2015-Poverty Threshold @ PhP 9,064.00 per month)	9,064 per month	PhP 6,192.33 per month ✓ If farmer is also the tapper (650 kg/ha, 2 has, average price for the year is PhP57.16 kilo of DR) PhP 3,715.40 per month ✓ 60:40 sharing (farmer:tapper)	68%	9,064 per month	PhP 6,228.08 per month ✓ If farmer is also the tapper (650 kg/ha, 2 ha, average price for the year is PhP57.49 kilo of DR) PhP 3,736.85 per month ✓ 60:40 sharing (farmer:tapper)	69%
³ Investments (in PhP B)	1.9 B	0.30 B	16%	1.9 B	0.30 B	16%
Domestic Sales (in PhP B)	1.77	3.88	220%	1.77	3.88	220%
Exports Sales (in USD M)	179.80	481.28	268%	179.80	481.28	268%

*Revised 2020 and 2021 based on the agreement in the PHLRUBBER 2019 Assessment and 2020 Planning Workshop

¹Accomplishments were derived from the submitted report of the Philippines to Association of Natural Rubber Producing Countries

² Per World Bank Study, one hectare of rubber will generate two jobs

³Per World Bank Study, one hectare of rubber will require PhP 200,000.00 investments

Note: Accomplishment Report of 2022 is only as of July except for Export Sales which is as of April 2022

*2020			*2021			2022			TOTAL
Target	Accomp	% Accomp	Target	Accomp	% Accomp	Target	Accomp	% Accomp	
0.65	0.71	109%	0.70	0.715	102%	0.75	0.69	92%	
144.69	106	73%	156.30	136.9	88%	169.71	102.72	61%	
222,602	176,900	79%	223,283	186,400	83%	226,285	202,000	89%	
231,861	230,723	99%	234,317	239,140	102%	236,799	234,600	99%	
2,430	1,500	62%	2,456	2,500	102%	2,482	1,000	40%	16,500
4,860	3,000	62%	4,912	5,000	102%	4,964	2,000	40%	33,000
9,064 per month	PhP 6,378.61 per month ✓ If farmer is also the tapper (586 kg/ha, 2 has, average price for year is PhP65.31 kilo of DR) PhP 3,827.17 per month ✓ 60:40 sharing (farmer: tapper)	61%	9,064 per month	PhP 9,936.12 per month ✓ If farmer is also the tapper (715 kg/ha, 2 has, average price for the year is PhP83.38 kilo of DR) PhP 5,961.67 per month ✓ 60:40 sharing (farmer: tapper)	95%	14,498	PhP 10,180.24 per month ✓ If farmer is also the tapper (685 kg/ha, 2 has, average price for the year is PhP89.17 kilo of DR AO July) PhP 6,108.14 per month ✓ 60:40 sharing (farmer: tapper)	70%	
0.48	0.30	62%	0.49 B	0.50	102%	1.98	0.20	10%	3.3
4.17	4.19	101%	4.59	4.46	97%	5.05	2.19	43%	17.91
529.41	433.40	82%	582.35	578.34	99%	640.58	278.21	43%	2,257.58

B. PERFORMANCE HIGHLIGHTS

1. PRODUCTION AND PRODUCTIVITY IMPROVEMENT

The Production and Productivity Improvement Action Team has achieved remarkable performance in responding to issues and concerns related to low productivity of rubber plantation particularly those that are operated by the smallholders. Efforts of the team were focused on seeds selection and distribution, certification of bud wood gardens, establishment and accreditation of rubber nurseries, expansion of areas, and distribution of planting materials giving priority as much as possible to high yielding clones.

Various trainings and seminars on production and productivity improvement were also conducted. Local benchmarking missions were also done to facilitate transfer of new and improved production technology and replicate good agricultural practices of regions and countries visited.

The Production and Productivity Improvement Action Team is composed of DA, DENR, DAR, DOST, LGUs, Academe, PRFA, rubber producers, and other support institutions. DA is represented by PRRI, ATI, BAR, and BPI. DA serves as the lead agency ensuring that all programs and projects under the Production and Productivity Improvement Strategy are duly implemented.

1.1 Budwood Garden and Nurseries

The Department of Agriculture through Bureau of Plant Industry (DA-BPI) accredited fifteen (15) rubber nurseries. Of this, 11 are privately owned and 4 are operated by the government. Table 13 shows the distribution of nurseries per region. With these accredited nurseries, farmers, either smallholder or corporate are assured that the procured seedlings are high yielding clones.

Table 13
Accredited Rubber Nurseries

Particulars	Number of Accredited Nurseries		
	Private Owned	Government	Total
Zamboanga Peninsula	-	2	2
Northern Mindanao	2	1	3
Davao Region	1	-	1
SOCCKSARGEN	7	1	8
BARMM	1	-	1
Total	11	4	15

DA-Bureau of Plant Industry (DA-BPI), November 2020

1.2 Distribution of Planting Materials and Supplies

Various government agencies distributed budded planting materials to rubber farmers, cooperatives, associations, and Peoples Organizations. A total of 886,627 planting materials were distributed during the last five (5) years. The Department of Agrarian Reform (DAR) aside from giving planting materials to rubber coops and individual beneficiaries, the agency also provided fertilizers and other input materials under its Project ConVerge.



Hauling of rubber budded clones to different beneficiaries

1.3 Good Agricultural Practices (GAP) for Natural Rubber

Philippine National Standard for Good Agricultural Practices (GAP) for Natural Rubber was developed by the Bureau of Agriculture and Fisheries Product Standards (BAFPS) and had been approved by the Secretary of the Department of Agriculture in 2019.

The development of GAP for Natural Rubber aims to assist farmers and processors to provide assurance on the quality of raw and semi-processed rubber products that will enhance competitiveness of natural rubber for domestic use and international trade. It also aspires to help increase productivity and income, and ensures compliance to relevant national legislations, proper use of natural resources and promotion of sustainable agriculture.

PHILIPPINE NATIONAL STANDARD

PNS/BAFS 286:2019
ICS 65.020

Non-food crops – Natural rubber – Code of Good Agricultural Practices (GAP)



BUREAU OF AGRICULTURE AND FISHERIES STANDARDS
BPI Compound Visayas Avenue, Diliman, Quezon City 1101 Philippines
Trunkline: (632) 526-8741 to 64 loc. 3301-3319
E-mail: info.dabafs@gmail.com
Website: www.bafs.da.gov.ph

1.4 Capability Building

Convergence of resources and commitment among support institutions and agencies resulted in the conduct of various trainings and seminars on production and productivity improvement. These activities benefited a total of 4,545 individual farmers in rubber-producing regions in the country.

These initiatives inculcated the needed knowledge, skills and desirable attitudes geared towards the increase in production and productivity transforming into best practices.



(Productivity and Quality Improvement Training on Rubber Bark Management and Latex Harvesting in Perez, Kidapawan City and Kibudoc, Matalam on December 15 and 16, 2020)



(Rubber Tapping Upgrading Training on March 21-23, 2018 in Bayawan City benefitting 22 rubber farmer tappers)



NC II Rubber Production Training of in Misamis Occidental in February 2019



(Training On Rubber Production & Tapping Technology on Aug. 31-Sept. 1, 2021 (1st Batch) and Sept. 6-7, 2021 (2nd Batch) in Surigao del Sur)

Table 14. Trainings Conducted by various PHLRUBBER Members

Training Title	Agency	Number of Participants
Agri-Productivity and Rubber Product Diversification	DTI-Zamboanga Peninsula	30
Training and Trading Advocacy Caravan		1,018
Skills Training on Rubber Tapping cum Production		42
Refresher Course on Rubber Tapping	DTI-Central Visayas	20
Skills Training on Rubber Tapping		102
Rubber Tapping and Bark Management Training		65
Rubber Industry Production Technical Updating Form and the Rubber Investors' Briefing and Orientation		85
Skills Training on Rubber Tapping, and Pests and Diseases Control on Rubber Trees	DTI-MIMAROPA	63
Skills Training on Rubber Tapping		45
Rubber Management for Rubber Farmers - Proper Tapping methods	DA-ATI	30
Training in Rubber Production NC II	TESDA	1,364
Skills Training on Rubber Production	DTI-Northern Mindanao	44
Skills Training on Rubber Production & Rubber Tapping		113
NC II Rubber Production Training		14
Skills Enhancement Training on Rubber Tapping		30
Basic Skills Training on Rubber Tapping & Bark Management		279
Rubber Production Protocols and Industry Clustering		17
Rubber Stakeholders Forum and Ceremonial Tapping of Serbisyong Totoo Rubber Development Program	DTI-SOCCSKSARGEN	150
Rubber Forum and Quality Advocacy Training/Seminar		40
Training on Rubber Bark Management		223
Training on Rubber Productivity and Tapping Management		16
Training on Rubber Tapping and Market Opportunity Session		14
Productivity and Quality Improvement Training on Rubber Bark Management and Latex Harvesting		50
Training on Rubber Field Quality Control, Production Consolidation and Marketing	DAR	40
Hands On Training on Rubber Farm Development and Good Production Practices		52
Skills Training on Rubber Tapping	DTI-Davao Region	30
Training on Rubber Tapping and Bark Management		54
Seminar on GAP on Rubber Plantation Management		54
Rubber Industry Stakeholders Forum w/ Rubber Plantation Management		55
Strengthening of Rubber Farmers Association and Cooperatives	PRRI	225
Productivity Improvement on Post Harvest Handling of Rubber Cuplumps	DTI-Caraga	14
NR Product Quality Improvement Seminar		42
Quality Improvement: Techno Training on How to Detect, Identify and Manage Pests & Diseases of Rubber Plantations		40
Training On Rubber Production & Tapping Technology		85
TOTAL		4,545

1.5 Local Study Missions

There was various local benchmarking activities or local study missions (LSM) conducted by rubber enrolled regions. These LSMs exposed participants to a more advanced rubber production plantation, observed/learned market system and encourage producers/traders to establish market linkages to other regions/provinces.



(DTI-Bukidnon initiated a Benchmarking mission in Platinum Rubber Development Inc on May 18, 2018)



(Rubber Plantation Visit at Platinum Rubber Development Inc in North Cotabato on April 24, 2019 and in Bebeladan, Palawan on May 2, 2019)

1.6 Distribution of Tools and Facilities/Gadgets

To improve the quality of products of rubber farmers, the following tools and facilities/gadgets were provided which may have an impact on their rubber price.

- a) 500 rubberized coagulating tanks were provided by DTI-Zamboanga Peninsula in Zamboanga del Sur last 2018; and
- b) 23 nano sensor known as Surface Toughness Analyzer for Rubber (STAR) were distributed to selected farmer organizations, LGUs in Zamboanga del Norte and Zamboanga Sibugay to be used in Bagsakan Centers, and processors. This gadget is developed by De La Salle University and funded by DOST-PCAARRD.



(Testing of Nano-Sensor or STAR)



(Distribution of tapping cups in Zamboanga Sibugay)

2. PROCESSING AND MANUFACTURING

Rubber processing involves the transformation of latex and cup lumps to rubber sheet, crumb or crepe rubber for use as intermediate raw materials in the manufacturing of various rubber-based products. Semi-processed products are pale crepe and crumb rubber are generally classified as Standard Philippine Rubber (SPR 5L, SPR 10 & SPR 20) pressed into bales at 33.33 or 35 kilograms and packed in a translucent plastic to protect the product from dirt and other contaminants. Market requirement dictates that processed natural rubber should be compliant to ISO 2000:2015, standards for Technically Specified Rubber (TSR) or PNS/ISO 2000.2015, product standards for Standards Philippine Rubber (SPR).

The downstream sector concentrates on the manufacturing of processed rubber into finished products such as tires, automotive rubber-based parts, footwear, sports items and other industrial manufactures.

Campaign for ISO certification for the existing rubber processing plants and rubber testing laboratories are being conducted to comply with the requirements of the market and to improve the competitiveness of the rubber industry in the country.

The Processing and Manufacturing Action Team is composed of the PRIA, PRFA, Traders, Processors, DTI, DOST, DA- PhilMech and other support institutions.

2.1 Conduct of ISO 9001:2015 Orientation

To encourage rubber processing to certify their plant to ISO 9001:2015, DTI-Zamboanga Peninsula conducted Orientation Seminar on ISO 9001:2015 on August 10-12, 2021 via zoom.

The screenshot displays a Zoom meeting interface. On the left, a presentation slide titled 'A. QMS Fundamentals' is visible. The slide content includes:

- What is QMS?**
- Key Definitions**
 - System** – set of interrelated or interacting elements
 - Management Systems** - system to establish policies, objectives and processes to achieve those objectives
 - Quality Management Systems** – part of a management system with regard to quality.
 - Quality** – degree to which a set of inherent characteristics of an object fulfills requirements
 - 1. Customer Requirements
 - 2. Statutory & Regulatory Requirements
 - 3. Organizational Requirements

The slide also features a process flow diagram with 'Inputs', 'Activity', 'Monitoring & Measurement', 'Controls', and 'Output' stages. A red circle highlights the 'Product Service' output. To the right of the slide, a table titled 'ELEMENTS' lists 'PEOPLEWARE', 'HARDWARE', and 'SOFTWARE'. On the far right, a grid of 12 participant video feeds is shown, with names like 'Danna Jamila- I...', 'ZSP - Mj Saha r...', and 'DTIZSP Bryann...' visible.

(Distribution of tapping cups in Zamboanga Sibugay)

2.2 Upgrading of Processing Plants

In order to increase the capacity of the existing rubber processing plants, to improve quality of products and to produce new product line, DTI and DOST provided assistance through provision of equipment and updating of rubber processing plants.

- a) DOST-FPRDI approved the Rubber Wood Processing Project for TARBEMCO in Zamboanga Sibugay amounting to PhP 57.70 Million. The project is expected to produce 5,000 cu. meters/year of rubber wood.



(Rubberwood Processing Plant in TARBEMCO, Zamboanga Sibugay)

Aside from the establishment of the said wood processing plant, DOST-FPRDI also provided trainings to the cooperative. These were the trainings conducted for the said project:

- o Training on Sawmilling which includes modules on harvesting, sawmilling, and non-pressure wood treatment using soaking and spraying last 23-24 April 2018 at TARBEMCO Board Room, Tambanan, Naga, ZSP;
- o Training on Rubberwood Lumber Treatment on Jan 15-16, 2020;
- o Training Kiln Drying and Furniture Making Training on Feb 11-19, 2020; and
- o Training on Operations of the Lumber Dryer and Furniture Making on 15 March 2020



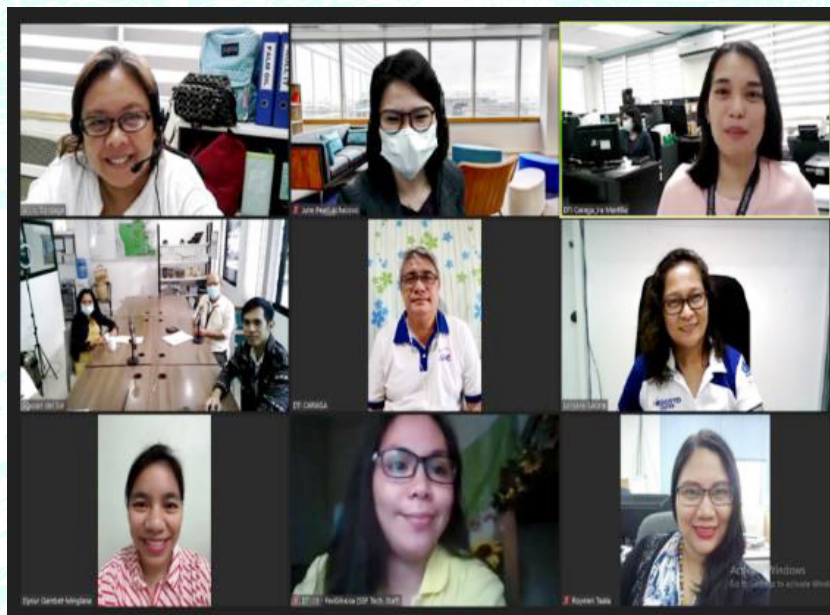
(Training on Sawmilling in Zamboanga Sibugay on April 23-24, 2018)

- b) Under the Innovation System Support (Technology Needs Assessment) of DOST-Zamboanga Peninsula, the Centrifuge Latex Processing Facility of FJC Agro-Industries - Phase II project located in Zamboanga Sibugay was given one-unit Rubber Latex Centrifuge Separator Machine worth PhP1.750 Million.



(Rubber Latex Centrifuge Separator Machine provided by DOST to FJC Agro-Industries)

- c) DTI-Northern Mindanao delivered three equipment to Central Mindanao University for their rubber processing plant under the Shared Service Facility (SSF) Program on September 17, 2020. The equipment are: Shredder Machine, Rubber Crumb Dryer/Oven and single Rubber Bailing Press Machine; and,
- d) DTI-Caraga approved the “SSF on Upgrading of Crumb Rubber Processing Plant” on September 28, 2020 of DTI-Caraga amounting to PhP 31.25M of which PhP 5.00 M were funded by DTI.



(SSF TWG approving the Upgrading of Crumb Rubber Processing Plant)

2.3 Rubberized Asphalt Road

During the 2nd Meeting of Expert Group on Natural Rubber Price Stabilization conducted on March 15-17, 2016 in, Krabi, Thailand, member-countries were unanimous in the decision to intensively promote the use of rubberized bitumen to increase domestic consumption of natural rubber.

The initial step done by the Philippines in introducing the use and benefits of rubberized bitumen in road construction was the conduct of Rubberized Asphalt Technology Mission and Field Visits in Thailand and in Malaysia on November 20-24, 2017. Thailand and Malaysia are two of the few countries which pioneered the use of the said technology. Thailand is using latex and Ribbed Smoked Sheet (RSS) while Malaysia is using cuplumps.

During the 20th PHLRUBBER Meeting on July 4, 2018 in Makati City, the Committee on Rubberized Asphalt was created. It is composed of DTI, PLGUs, DOST PCIEERD and ITDI, DPWH, DA, PRRI and USM, PRIA, MinDA, and Sunshine Rubber Technology Resources Company.

Currently, the University of Philippines-Los Banos Rubbers is conducting a study on Waste Plastics as Reinforcement Additives for Asphalt Binder-based Pavement Infrastructures of which pilot testing will be implemented.



(Philippines participated to the Seminar on Economics of Rubberized Road on August 26-28, 2019 in Malaysia which was organized by the Association of Natural Rubber Producing Countries)



2.4 International Benchmarking Activity

DTI-Zamboanga Peninsula organized an international Benchmarking on Best Practices for Rubber Marketing, Processing and Manufacturing on July 20-21, 2018 in Hat Yai, Songkhla Province, in Thailand. It was attended by 13 participants composed of Mayors from Matalam, North Cotabato, Zamboanguita, Neg. Oriental, Buenavista Agusan del Norte, Agriculturist and DRRM Officer from Mabinay, Neg. Oriental, Consultant of PLGU Basilan, Zamboanga Ecozone, and staff of DTI-Zamboanga Peninsula and DTI-SOCCSKSARGEN.

The objective of the said benchmarking activity was to learn new technologies and explore the best practices of Thailand for possible application in the Philippines particularly in the following areas:

- Central Rubber Market, a sophisticated trading center where business transaction is done online during auction day;
- Good Manufacturing Practice (GMP) Certified Rubber Bale Facility and Rubber Smoked Sheet Factory; and
- Rubber City, a large industrial park dedicated to locators investing in rubber-based products manufacturing.



(Benchmarking on Best Practices for Rubber Marketing, Processing and Manufacturing on July 20-21, 2018 in Hat Yai, Songkhla Province, Thailand)



2.5 Harmonization of Standards for Rubber and Rubber-based Products

The Philippines is an active member of the ASEAN Consultative Committee on Standards and Quality – Rubber Based Products Working Group (ACCSQ-RBPWG). The group meets twice a year to discuss and decide on the adoption and harmonization of various standards for rubber and rubber products. Currently, Philippines is 87.5% harmonized to International Standards identified by the RBPWG for harmonization with ASEAN Region

Table 15
International Standards on Rubber and Rubber Products for Harmonization

Standards	No. of Identified Standards	PH Harmonized	Not Yet Harmonized
Test Methods	40	38	2
Hoses	17	16	1
Non-Hoses	13	9	4
New and Innovative	2	-	2
TOTAL	72	63	9

Bureau of Philippine Standards, July 2022

3. DOMESTIC AND EXPORT MARKETING

Traditionally, the market structure of the natural rubber industry in the Philippines allows local rubber traders, middlemen, and consolidators to dictate and manipulate the rubber price resulting farmers with no other market options and a loss or decrease of possible income.

With the various interventions of the PHLRUBBER such as establishment of bagsakan centers, formulation of Regional Price Management System (RPMS) and introduction of NR Price computation, and provision of calibrated weighing scales, farmers were: educated on proper calculation of NR resulting to a transparent trading system in bagsakan centers; reduced transportation cost for remote-based rubber farmers; and eradicated the manipulation of traders/middlemen.

Furthermore, selling missions and other market development initiatives have made it possible for rubber farmers and processors to establish themselves both in the local and international markets have greatly accelerated the growth of their rubber businesses.

The Domestic and Export Market Action Team is composed of DTI, DA, LGUs, PRIA, Producers, Processors and other support institutions.

3.1 Establishment of Rubber Trading & Auction Centers (RTAC)

Rubber Trading and Auction Centers (RTACs) or locally known as “Bagsakan Centers” serve as a venue for farmers, traders and consolidators to transact business under the supervision of the local government units (LGUs).

Currently, there are fifty-six (56) RTACs in the country of which 17 centers are located in Zamboanga Peninsula and 39 in North Cotabato Province.

The establishment of RTACs in North Cotabato is thru the Executive Order No. 42 dated October 24, 2016 by Governor Emmy Lou Taliño- Mendoza-“An Order Establishing the Cotabato Rubber Trading Center, Otherwise Known As “Bagsakan ng Rubber Cup lump” In Strategic Areas of Cotabato Province”.



Rubber trading day (every Thursday) at Titay Bagsakan Center

3.2 Benchmarking Activities to Rubber Trading/Bagsakan Centers

Other rubber enrolled regions witnessed the advantage of having a rubber trading and auction center (RTAC) or bagsakan center in the region. Thus, to be able to replicate the said practice, benchmarking activities were initiated by DTI:

- a) DTI-North Cotabato facilitated field Visit and Benchmarking of Sultan Kudarat and Sarangani Rubber Industry Cluster to RTACS – Singao, Kidapawan City and Kisanite, Makilala on March 12 & 19, 2018;
- b) The Basilan Rubber Cluster Team joined the study mission organized by DTI-BARMM Basilan to Matalam and Kidapawan, North Cotabato on August 2, 2018;
- c) Benchmarking Activity to Rubber Bagsakan Centers, Processing Plants and PRRI on November 21-23, 2018; and,
- d) DTI-North Cotabato initiated the Benchmarking of Rubber Smallholders from Sultan Kudarat Province to the RTAC – Pangao-an, Magpet and KAMASI Village Level Processing Plant on March 3, 2021.



(DTI-North Cotabato facilitated the field Visit and Benchmarking of Sultan Kudarat and Sarangani Rubber Industry Cluster to RTACS – Singao, Kidapawan City and Kisante, Makilala on March 12 & 19, 2018)



(Basilan Rubber Cluster Team joined the study mission organized by DTI-BARMM Basilan to Matalam and Kidapawan, North Cotabato on August 2, 2018)



(Benchmarking Activity to Rubber Bagsakan Centers, Processing Plants and PRRI on November 21-23, 2018)

3.3 Regional Price Management System

The Regional Price Management System (RPMS) was institutionalized in 2014 as a major program of the Zamboanga Peninsula Rubber Industry Cluster Team (ZamPen RUBBER). The RPMS was benefiting thousands of small farmers who were taught to calculate the rubber price reference using their smart phones. The rubber price reference serves as basis for the farmers to negotiate with the traders and buying agents who in the past several years were the ones dictating the price offered to the farmers, thus, taking advantage of the latter's lack of access to market information

DTI-MIMAROPA, Central Visayas, Northern Mindanao, Zamboanga Peninsula, Davao Region, SOCCSKSARGEN and CARAGA have adopted the Regional Price Management System. The daily computed NR Price Reference is posted in Price Reference Board in all Negosyo Centers of rubber producing municipalities, bagsakan centers and DTI-Provincial Offices located in rubber-producing provinces in Zamboanga Peninsula.



(Price Reference Board in Bagsakan Center/RTAC in Zamboanga Sibugay)

3.4 Accreditation of Laboratory Testing Centers

There are two rubber testing laboratories in the countries accredited to ISO 17025:2005:

- a) DOST-Zamboanga Peninsula Rubber Laboratory Testing Center in Zamboanga City; and
- b) DOST-ITDI.

These laboratories provide objective evidences on the state and quality of rubber and rubber products. It is a scientific approach to ensure compliance to industry regulations and market requirements.



(Rubber Laboratory Testing Center of DOST 9 in Zamboanga City)

In addition, DTI-Zamboanga Peninsula thru SSF Project provided Philippine Pioneer Rubber Products Inc a NR Testing Laboratory Equipment worth PhP8.0M which was launched in July 2018.



Some of the equipment in NR Testing Laboratory of PPRPC in Region 9

3.5 Market Matching Activities

To connect the local manufacturers and processors with big companies, market matchings were conducted:

- a) DTI-Export Marketing Bureau (DTI-EMB) conducted a Focus Group Discussion (FGD) titled, “Consultative meeting on Market Opportunities for Philippine Rubber” on February 7, 2018 in Makati. It was attended by 23 participants composed of private and government sectors.
- b) DTI-Zamboanga Peninsula coordinated with the Office of Asec. Rafaelita Aldaba thru the office of Director Romulo V. Manlapig, CARS-PMO and facilitated a meeting between Philippine Rubber Industries Association (PRIA), Toyota Motor Philippines, Mitsubishi Motor Philippines Corporation, and JICA. The meeting was held on March 22, 2018 at the Board Room, Penthouse, BOI. The meeting discussed market linkage between the local rubber-based products manufacturers and the two major car manufacturers in the country.
- c) DTI-EMB matched rubber companies to 2 Korean importers during the KOIMA (Korean Importers Association) Business Activity on July 11, 2019 at Conrad Hotel, Pasay City; and
- d) DTI- Zamboanga Peninsula conducted the Zamboanga Peninsula Exposition (ZAMPEX) 2019 at SM Megamall on August 1-5, 2019 of which one of the exhibitors is a rubber stakeholder, FJC Agro Industries. The said MSME contributed around 60% of the total sales of PhP 86.15 M of the fair which includes the sales in business matching to local manufacturers.



(Market Matching with Korean Importers on July 11, 2019 in Pasay City)



(Zamboanga Peninsula Exposition (ZAMPEX) 2019 at SM Megamall on August 1-5, 2019)

3.6 Support Facilities

- a) DTI-SOCCSKSARGEN through the Shared Service Facility Project distributed 36 Units Foldable Beam Platform Scales for RTACs in North Cotabato which amounted to Php658,800.00. This would omit the manipulation of traders to rubber smallholders;
- b) DA-PRPD in CARAGA approved the construction of the rubber cup lump Consolidation Warehouse of KM7 Farmers Producers Cooperative amounting to Php 4.47 M;
- c) DA-PRPD in CARAGA funded the acquisition of vehicle for hauling and collection of cup lump amounting to Php2.24M to KM7 Farmers Producers Cooperative and Php9.39M to Bayugan Rubber Producers Cooperative; and,
- d) Turned-over of DA-PRDP Integrated Rubber Production and Marketing Project to KM. 7 Farmers Producers Cooperative (KFPC) in Agusan del Sur amounting to Php 8.22 M on June 25, 2020.



(Blessing of the vehicle provided by DA-PRDP to KM7 Farmers Producers Cooperative)



(On-site construction of the Rubber Cup Lump Consolidation Warehouse)



(Turned Over of the 36 Units Foldable Beam Platform Scales for RTACs in North Cotabato)



(Turned Over Ceremony of the Integrated Rubber Production and Marketing Project to KM. 7 Farmers Producers Cooperative (KFPC) on June 25, 2020)

4. RESEARCH AND DEVELOPMENT EXTENSION

The Research, Development and Extension initiatives are handled by different research institutions. The Department of Agriculture (DA) implements its RDE programs through the Bureau of Agricultural Research (BAR), the Bureau of Plant Industry (BPI), the Philippine Rubber Research Institute (PRRI), and its regional field offices and research centers.

R & D projects implemented by the Academe are funded by the Department of Science and Technology (DOST) through the Philippine Council for Agriculture, Aquatic and Natural Resources Research Development (PCAARRD). Rubber is one of the priority commodities under the Industry Strategic S&T Plan (ISP). The DOST - Rubber ISP is aimed to address the supply chain problems of the industry through S&T solutions. Other support institutions are the Philippine Council for Industry, Energy and Emerging Technology Research and Development (PCIEERD), Forest Products Research and Development Institute (FPRDI) and Industrial Technology Development Institute (ITDI).

Extension services are provided by the Local Government Units (LGUs) through the Offices of the Provincial, City and Municipal Agriculturist with coordination and assistance from the Department of Agriculture and other support organizations.

Research, Development and Extension Action Team is composed of DA (PRRI, BAR, & BPI), DOST (PCAARRD, FPRDI, ITDI, PCIERRD), Academe (USM, JRMSU, WMSU/WESMAARRDEC), PRFA, PLGU, other state universities & colleges), LGUs of rubber-producing regions and provinces, and the private sector.

4.1 Innovation of Root Trainer Technique and Precision Grafting Technology for Rapid Production of Quality Planting Materials of Rubber

Modern rubber nursery establishment using root trainer planting technique is being introduced in the country as an alternative to the traditional rubber nursery which used polybag. Rubber seedlings produced in root trainer produce large number of lateral roots into the well-aerated potting medium. The vertical ridges provided in the container wall direct these lateral roots downwards and thus prevent their circular growth within the container. As a result, the enhanced production of lateral roots influences growth of the rubber plant positively during the juvenile phase.



This research project was funded by DOST-PCAARRD and have won “Best Research Paper Award 3rd place” during National Symposium for Agriculture, Aquatic and Natural Resources Research and Development.

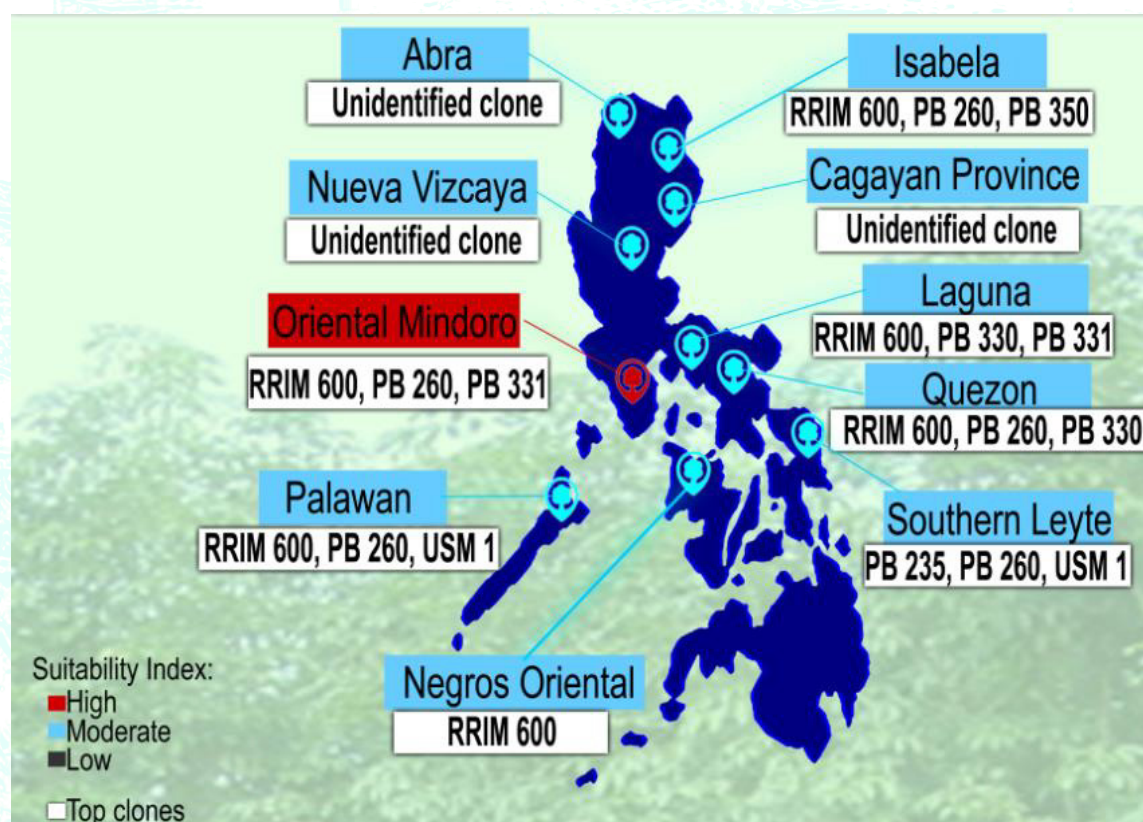
4.2 Technology Adaptation and Performance Trial of Different Rubber Clones in Zamboanga Peninsula

This project is funded by DA-BAR amounting to PhP 1M. It has won “2nd Runner Up” during the 2019 Regional Research Symposium on Development and Highlights under Research Category, and Best Paper Award during the DA-Agency In House Review. To date, there is a continuous conduct of care and maintenance data gathering on plant girth and morphology.



4.3 Assessment on the Growth and Yield Performance of Rubber Planted in Non-Traditional Areas of the Philippines

This project is funded by DOST-PCAARRD amounting to PhP 4.24M which aims to assess the performance of the rubber plantation in Non-Traditional Areas such as Visayas and Luzon. The result may be used as a strategy to either advocate or not the plantation of rubber in such areas. Moreover, this proposal won “2nd Runner Up” during the 2019 Regional Research Symposium on Development and Highlights, Poster Category and was considered as the “Most Promising Research Award” during the DA-Agency In House Review.



4.4 Multilateral Clone Exchange Trial (IRRDB/PRRI)

As member of the International Rubber Research and Development Board (IRRDB), the Philippines is party to the Multilateral Clone Exchange Program. The country is set to receive 51 Class a Rubber Clones under the Multi-Lateral Clone Exchange Program of the IRRDB.

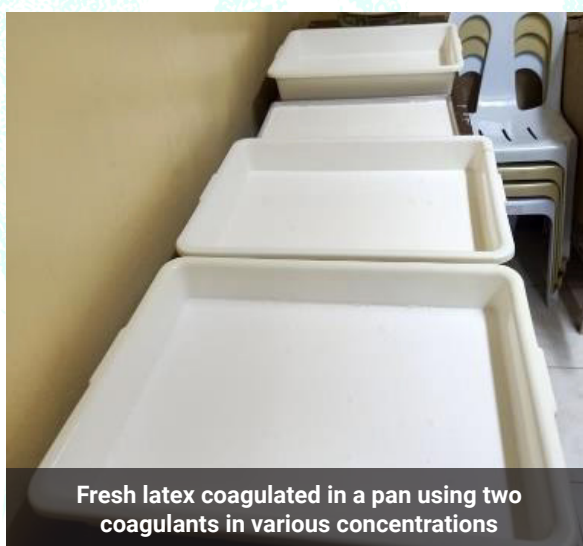
Initially acquired new and high yielding rubber clones for nationwide trials from Thailand (RRIT 251), Malaysia (RRIM 928; RRIM 929; RRIM 2023; RRIM 2027); France (IRCA 331) are planted for multiplication in selected bud wood gardens of DA and its partners in the regions. Established clonal trials plots with ready replicate clones of newly acquired HY clones in ISU, WPU, SLSU, CMU, USM, and DA.

To date, there are evaluation of IRRDB exchange rubber clones under nursery condition taking into account the suitability of each rubber clones against biotic and abiotic stresses as well as the environmental factors of PRRI.



4.5 Influence of Different Coagulants on the Quality of Rubber Sheets

PRRI conducted research on the “Influence of Different Coagulants on the Quality of Rubber Sheets” and prepared rubber sheets using two (2) types of coagulants – formic acid and coconut vinegar. On-going initial observations were made since the sheets will be pre-dried at room temperature for 7 days followed by drying for 48 hours at 50-60 °C in a conventional oven.



Fresh latex coagulated in a pan using two coagulants in various concentrations



Milled coagulated latex turned into sheets allowed to dry for 7 days for the pre-drying

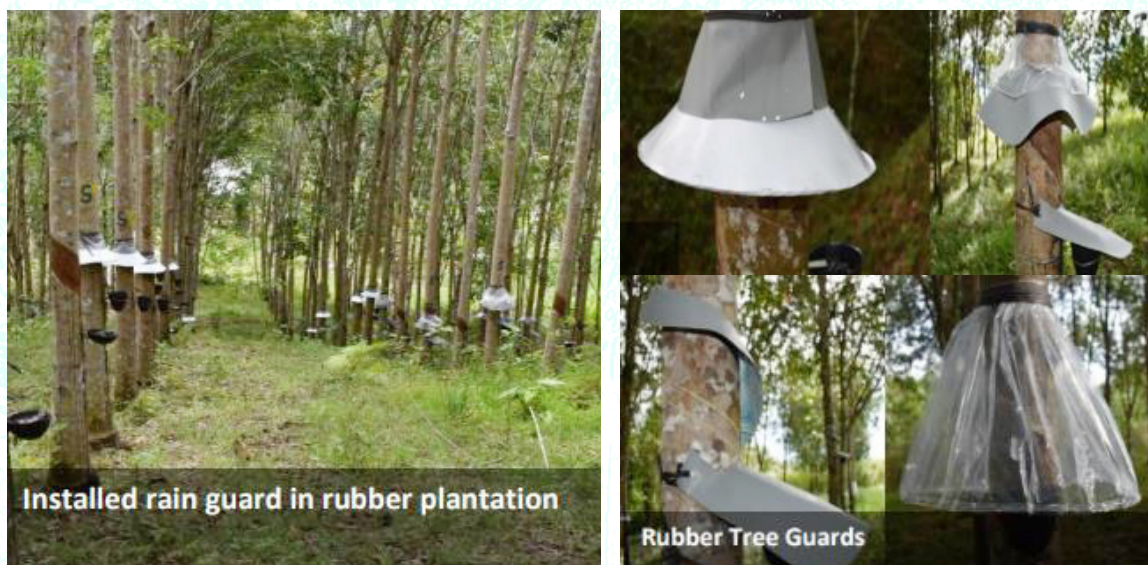
4.6 Evaluation on the Agronomic Performance of Rubber RRIM Series in Luzon And Mindanao For NSIC Registration

DA-RFO9 conducted field visits and identified project sites in Basilan, Cotabato and Zamboanga Sibugay for the Evaluation on the agronomic performance of rubber RRIM Series in Luzon and Mindanao for NSIC registration



4.7 Rainguard Utility Model

PRRI fabricated four (4) rainguards' utility model and installed to nine (9) sites with 180 rubber trees in each location.



4.8 Rubber Based Farming System

PRRI pilot tested the

- Rubber Based Farming System: Crop-livestock Integration in JARBECO, Sulo, Naga, Zamboanga Sibugay and TARBEMCO, Tambanan, Naga, Zamboanga Sibugay
- Technology Demonstration of Rubber – Based Farming System: Rubber+Crop+Livestock Integration Under Mining Areas in Pigbogolalan Nog Subanon Sog Konotoan (PNSSK), Inc, Canatuan, Tabayo, Siocon, Zamboanga del Norte; and Guintolan, Payao, Zamboanga Sibugay



5. FINANCING AND INVESTMENT

One of the major constraints cited by rubber stakeholders particularly the smallholders is to access finance either for additional working capital or acquisition of equipment or machineries. Thus, it hinders the stakeholder's plan to expand their production and increase market penetration both local and abroad.

The PHLRUBBER from its inception already includes government financing institution to address the industry's concerns for lack of financing facilities. The Land Bank of the Philippines (LBP) and Development Bank of the Philippines (DBP) supported the development of the industry by providing specific financing portfolio for rubber business from plantation to manufacturing. The facilities are of course subject to regular loan requirements. With the improved access to financing, it enhances the ability of the industry to expand production capacities, improve productivity, and ultimately increase income. Strong support from the banking sector also contributes to the national government's goal of promoting inclusive growth.

The Financing and Investment Action Team is composed of LBP, DBP, LGUs, DTI – Small Business Corporation (SBCorp), DA and other institutions with financing assistance.

5.1 Loans Assistance

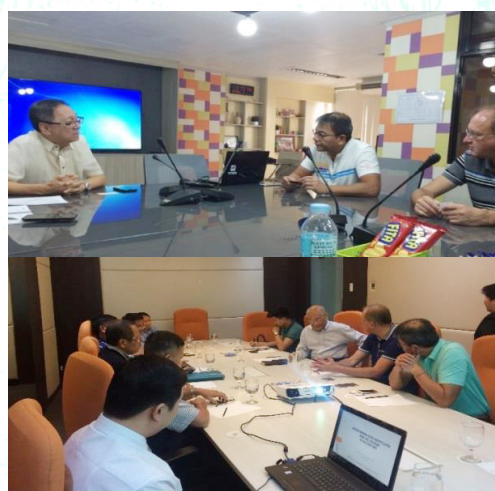
- a) Regional Technical Evaluation Committee, headed by DOST- Zamboanga Peninsula, approved the Truck Scale Proposal of MJ Saha Rubber Processing Plant amounting PhP1.1M.
- b) DBP approved the following:
 - o MJ Saha amounting PhP 60.00M for supply, processing, production and trading of rubber materials;
 - o Mato Rubber Trading amounting PhP15M for rubber plantation and inventory build-up; and
 - o FJC Agri Industries amounting PhP 45M for rubber processing.
 - o Small rubber growers located in Poblacion Antipas, North Cotabato for PhP 5M
- c) LBP approved the following:
 - o Rubber Plantation in Basilan, ComVal, Quezon, South Cotabato, Sultan Kudarat, Zamboanga del Norte and Zamboanga Sibugay amounting to PhP 533.78M
 - o Rubber Processing and Trading in Basilan amounting PhP 17.5 M
 - o Rubber manufacture of other products in Zamboanga Sibugay amounting PhP 7.5 M48775555

- d) DTI-Davao Region facilitated the loan of farmers' cooperative engaged in rubber production located in Laak, Compostela Valley, the Laak MPC. Soft loan granted by LGU Laak amounting to PHP5.00 Million.
- e) DTI-11 facilitated the loan for Antipas, North Cotabato amounting to PHP2.50 million granted by SB Corp.

5.2 Investment Opportunity Seminars, Regional and Financing Fora

Aside from loan assistance, continuous promotion of investment opportunities were also conducted that would eventually lead to additional investments and generate additional employment.

- a) Business Meeting among BOI, DTI rubber industry experts, and Mr. Gerald Skrobanek, COO, Head Group – a Dutch Tennis Balls Manufacturing Company in Davao City on July 20, 2018. Another meeting with Mr. Skrobanek was held in Bukidnon, attended by Bukidnon Rubber Industry Council, BOI, and DTI-Zamboanga Peninsula. The meetings discussed the possible location of the HEAD Tennis Balls manufacturing either in Davao City or Cagayan de Oro. The present company is located in China.



(Business Meeting with BOI, DTI and HEAD Group on July 20, 2018)

- b) DTI-North Cotabato conducted the Rubber Forum with Basak Farmers Association in Magpet, North Cotabato on March 6, 2019 with 40 participants/beneficiaries.



(Rubber Forum on March 26, 2019 in Magpet, North Cotabato)

- c) DTI-MIMAROPA conducted the Investment Opportunity Seminar on Rubber Production and Processing on September 9, 2019 at Provincial Capitol, Puerto Princesa, Palawan.



(Investment Opportunity Seminar in Palawan on Sept 9, 2019)

- d) DTI-Central Visayas conducted Rubber Industry Production Technical Updating Forum and the Rubber Investors' Briefing and Orientation with Tuko Distribution and Motherland Industries with RUBBERCO and LGU-Bayawan on December 8, 2019 in Bayawan City with 85 participants.



(Rubber Industry Production Technical Updating Forum and the Rubber Investors' Briefing of DTI7 on December 8, 2019)

- e) DTI – Davao Oriental initiated the region-wide Rubber Stakeholders Forum with Business Matching on February 5, 2020 in Mati, Davao Oriental



(Rubber Stakeholders Forum with Business Matching on February 5, 2020 in Mati, Davao Oriental)

- f) DTI-Caraga conducted a Virtual Financing Forum last September 15, 2020 which was attended by Agusan Del Norte Rubber IC Stakeholders.



(Virtual Financing Forum last September 15, 2020 of DTI-Caraga)

6. Information & Policy Formulation & Advocacy

Ensuring the maximum awareness and involvement of all stakeholders in each rubber producing regions, industry clusters and sub-clusters were organized. Industry clusters oversee and monitor the implementation of programs and projects and institutionalize convergence among enablers in different regions. This is also to assure that PHLRUBBER can carry out its programs harmoniously with different institutions through policies and advocacies implemented. It allows the five other Action Teams to operate under a supportive and appropriate institutional framework and in an environment of convergence.

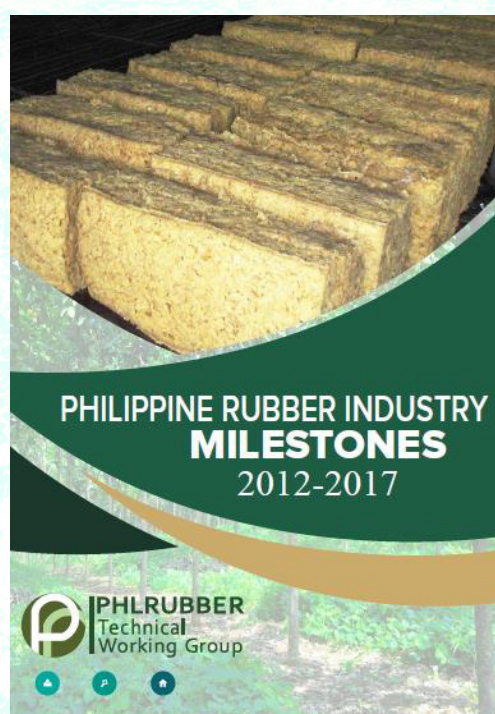
Supporting the Information & Policy Formulation Advocacy Action Team are the LGUs, DTI, DA, TESDA, DOST, DOLE, DILG, DAR, DENR, Academe, PSA, PRIA, PRFA, DKKT, Inc., private sector and other support institutions.

6.1 Information, Education and Communication (IEC)

- a) PRRI distributed 4,652 IECS materials in 2020 on Establishment of Management of Immature Rubber, Establishment and Management of Rubber Nursery, Rubber Insect Pest and its Management, Natural Rubber Processing, Latex Harvesting, Status, Challenges and Prospects of Philippine Rubber Industry, and Intercropping of Immature Rubber Plantation.



- b) PHLRUBBER Secretariat distributed 500 copies of the Philippine Rubber Industry Milestones 2012-2017 to DTI-Secretary, DTI-Functional Groups, DTI-PDs, PHLRUBBER and R9 member agencies



6.2 Planning Workshops, Meetings and Conferences

Various planning workshops and seminars were also conducted. This is to make sure that the organization is clear about the initiatives to be done. It would also help to get all the commitment of members and other stakeholders and to develop concrete plans and directions for achieving organization's purpose and objective.



(PHLRUBBER 2019 Year-End Assessment and 2020 Action Planning on February 13-14, 2020 at Hue Hotel, Puerto)

6.3 Signing of the Joint Statement of Commitment for the Philippine Rubber Industry Roadmap 2017-2022

With the finalization of the Philippine Rubber Industry Roadmap 2017-2022, a Joint Statement of Commitment was signed on April 16, 2018 at BOI Conference Room in Makati by the different Secretaries of various NGAs (DTI, DA, DOST, DAR, DENR, TESDA, MinDA), President of USM, PRIA and PRFA. Other Signatories as witnessed are Usec. Maglaya of DTI-ROG, Usec. Laviña of DA-HVC, Chairperson of PCAF Rubber Sub-Committee, Chairperson of PHLRUBBER, representatives from the processing and manufacturing sectors.



(Signing of Joint Statement of Commitment on April 16, 2018 at Makati City)

6.4 Localization of the Philippine Rubber Industry Roadmap

At least two regions conducted a workshop on the localization of the Philippine Rubber Industry Roadmap 2017-2022.



(Bayawan City on September 28, 2018)



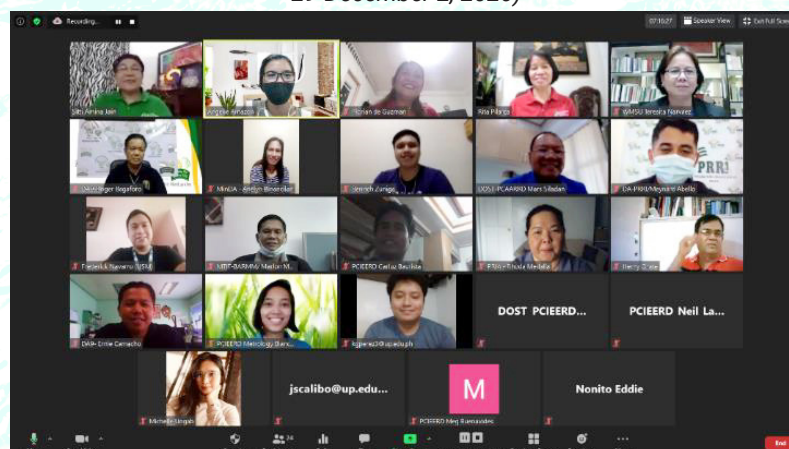
(Puerto Princesa, Palawan in 2019)

6.5 Validation and Finalization of the Philippine Rubber Industry Roadmap 2022-2028

After drafting the Philippine Rubber Industry Roadmap 2022-2028, there was a validation of targets by action team conducted last November 29-December 2, 2020. This was facilitated by RGIP Empowerbiz Consultancy, Ms. Rita Pilarca.



(Philippine Rubber Industry Roadmap Validation Session on November 29-December 2, 2020)



6.6 Rubber Stakeholders Summit & Congress

- a) Provincial Government of Basilan in partnership with DOST ARMM held the 1st Basilan Rubber Industry Summit on January 13, 2018 in Basilan. The summit was able to provide a platform to address issues and concerns while finding solutions at the end through interactive rational discussions.

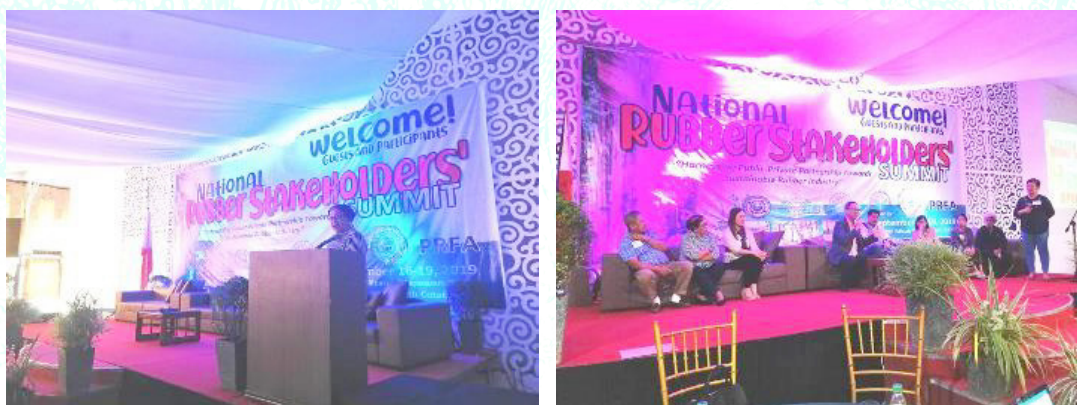


(1st Basilan Rubber Industry Summit on January 13, 2018)

- b) DTI-North Cotabato facilitated the conduct of “Provincial Rubber Farmers Congress” on August 30, 2018 in Amas, Kidapawan City.



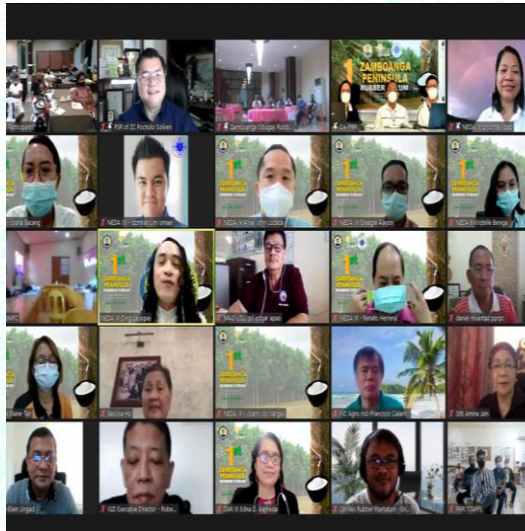
- c) PCAF in coordination with PRRI conducted National Rubber Stakeholders' Summit on September 16-18, 2019 in Kidapawan City, North Cotabato. Total of participants:
- o Farmers- 120
 - o Researchers-10
 - o Policy Makers-5
 - o Professional-20
 - o LGU personnel-15; and
 - o Other rubber stakeholders-30



(National Rubber Stakeholders' Summit on September 16-18, 2019 in Kidapawan City, North Cotabato)

- d) PRRI in coordination with NEDA- Zamboanga Peninsula conducted the ZamPen Rubber Forum on July 15, 2021

PARTICIPANYS	No.
RDC IX Officers	3
NGAs/RLAs	19
RDC IX Private Sector Representatives	4
Representatives from LGUs	36
Non-Governments Organizations	3
Guests	6
Rubber Processors	11
Rubber Farmer Associations/Cooperatives	44
Zamboanga del Norte	10
Zamboanga del Sur	16
Zamboanga Sibugay	8
Zamboanga City & Isabela City	10
TOTAL	119



Online ZamPen Rubber Forum on July 15, 2021

6.7 House Bill “An Act to Develop the Rubber Industry, Establishing for the Purpose the Philippine Rubber Industry Development Board”

- a) Conducted two regional consultations on the enhanced draft House Bill 2912
 - o 1st Leg was held on April 18,2018 in Kidapawan City, North Cotabato.
 - o 2nd leg was held on April 23,2018 in Dipolog City, Zamboanga del Norte.



- b) DTI Regions IX, X, XI, XII and CARAGA thru the Regional Development Councils adopted Resolution manifesting strong support for the passage of the Bill. Copy of Resolution was endorsed to the Office of Congressman Amatong.
 - o RDC-IX Resolution No. 032 s. 2018
 - o RDC-X Resolution No. 19 s. 2018
 - o RDC-XI Resolution No. 37 s. 2018
 - o RDC-XII Resolution No. 84 s. 2018
 - o RDC XIII Resolution No. 35-B s. 2018

- c) DTI-9 conducted a quick briefing with Senator Cynthia Villar on the status of the Philippine Rubber Industry and the needs for legislative support on August 24, 2019 in Zamboanga City.



6.8 Advocacy Session on the Use of Natural Rubber as Reinforcement Additives to Asphalt Binder-Based Pavement Infrastructures

- a) DTI9 conducted the Advocacy Session on Rubberized Asphalt Road on July 27, 2021 with a total of 124 participants.
- b) DTI9 conducted the Advocacy Session on the Use of Natural Rubber as Reinforcement Additives to Asphalt Binder-Based Pavement Infrastructures on November 17, 2021 with contractors in the Philippines



6.9 PCAF Endorsed Resolutions

Table 16 shows the list of PCAF resolutions passed and endorsed to concerned agencies for the appropriate action.

Table 16
List of PCAF Endorsed Resolutions

YEAR	RESO NO.	TITLE
2018	1	Recommending to the House of Representatives on Agriculture and Food and Government Reorganization and Consolidation of House Bill No. 2912 (Phil. Rubber Industry Development Board) and 4064 (Phil. Rubber Industry Development Authority) and its harmonization with the functions of the Philippine Rubber Research Institute
	9	Recommending to the Department of Agriculture Secretary through the Bureau of Plant and Industry-National Seed Industry Council the revision of the seed registration process for rubber clones to expedite the registration of RRIM 2000 and 3000 series of rubber clones
	10	Recommending the Technical Education and Skills Development Authority the revision of the Rubber Production National Certification II Qualification Module
2019	12	Recommending to the Department of Agriculture Secretary through the Bureau of Plant and Industry-National Seed Industry Council the inclusion of the Philippine Rubber Research Institute in the NSIC Technical Working Group
	17	Recommending to the House Of Representatives the Approval of House Bill No. 2664 on the Creation of the Philippine Rubber Industry Development Board
	18	Recommending to the Department of the Interior and Local Government through the Local Government Units the adoption of local ordinances relative to confiscation of cuplumps mixed with battery solutions
	22	Recommending to the Department of Agriculture Secretary the approval and immediate implementation of the Philippine Rubber Information Management System proposed by the DA-Information and Communication and Technology System
	23	Recommending to the Department of Agriculture Secretary through the Agricultural and Training Institute and Technical Education and Skills Development Authority the development of yearly training program on Good Agricultural Practices for Rubber Production
	24	Recommending to the Department of Agriculture Secretary through the High Value Crops Development Program the yearly budget allocation for the establishment of rubber processing facilities in strategic production areas
	25	Recommending to the Department of Agriculture Secretary through the High Value Crops Development Program and the Department of Trade And Industry the development of a Traceability System For Rubber Products
	26	Recommending to the Department of Agriculture Secretary through the Agricultural and Training Institute the development of information and education communication materials on new technologies on rubber production
	27	Recommending to the Land Bank of the Philippines and the Development Bank of the Philippines of a loan program for rubber processing facilities
	28	Recommending to the Department of the Interior and Local Government through the Local Government Units the suspension of the collection of the php 1/kg tax for cuplumps in Zamboanga Peninsula
2020	6	Recommending to the Bureau of Plant Industry through the National Seed Industry Council to expedite the registration of RRIM 2000 series of rubber clones
	7	Recommending PRRI to conduct a study on the efficient operation of the Philippine Rubber Development, Inc. for possible adoption of new technologies and best practices
	8	Recommending to the PRRI to analyze a compendium of studies on intercropping with rubber to be used as basis in determining viability of intercropping
	9	Recommending to the Philippine Rubber Technical Working Group to review the Philippine Rubber Industry Roadmap 2017-2022 and consider the DA guidelines set forth in updating existing roadmaps
	10	Recommending to the DA And DTI To jointly establish information system of rubber farmers production data to strengthen partnership mechanism with prospective markets
2021	3	Recommending to the Department of Agriculture-High Value Crops Development Program to review and re-evaluate budget allocation for rubber production anchored on the optimal realization of the targets as indicated in the Philippine Rubber Industry Roadmap
	4	Commending the Technical Education and Skills Development Authority (TESDA) for the development and revision of the Training Regulation for Rubber Production National Certificate II Qualification
	15	Recommending to the DA Secretary through the PRRI to revisit modern rubber technologies from the seed production To harvesting, and introduce the adoption to farmer-growers
	18	Recommending the DA Secretary through the BAFS to review the Philippine National Standards Code of Good Agricultural Practices for Natural Rubber and align with the Technical Regulations for Rubber Production National Certification II
	27	Recommending to the DPWH to spearhead the completion of the pilot testing of the Rubber-Modified Asphalt and its implementation/ application to asphalt overlay projects
	28	Recommending to the DA through the BPI-NSQCS to review the guidelines on the certification of mother trees and tagging of budded rubber planting materials for distribution
2022	12	Recommending to the DA Secretary through the Philippine Rubber Research Institute to spearhead the creation of a Technical Working Group to develop mitigation strategies to help prevent the possible entry of Pestalotopsis into the country
	13	Recommending to the PHLRUBBER Technical Working Group to harmonize all existing strategic plans and Research and Development roadmaps of concerned government agencies with the existing Philippine Rubber Industry Roadmap
	14	Recommending to Department of Agriculture through the Bureau of Plant Industry - National Seed Industry Council to review and revise the registration process of new rubber clones
	32	Recommending to the Department of Agriculture through the Bureau of Plant Industry-National Seed Industry Council the Adoption of the Proposed Revisions to the Rubber Crop Entry Performance Test Guidelines by the Plantation Crops Technical Working Group

6.10 Philippine Rubber Marketing Conference

- a) Conducted the Philippine Rubber Marketing Conference on November 19, 2021 via Zoom a total of 232 participants.



PHILIPPINE RUBBER MARKETING CONFERENCE
November 19, 2021

Friday, November 19, 2021 8:00 AM to 4:00 PM.
Streaming live via DTI R9 facebook page as scheduled.

zoom f LIVE DTI.Region9



PHILIPPINE RUBBER MARKETING CONFERENCE
November 19, 2021

RESOURCE SPEAKERS

- World Market Outlook of Natural Rubber Industry**
Jam Jacob, Senior Economist, ASEAN
- Market Outlook of Rubber-based Product**
Salvatore Pinizzotto, Secretary General, International Rubber Study Group
- Market Outlook of Rubber-based Product**
Dr. Dar Wong, Chief Investment Officer, AIA Advisors Pte Ltd
- Central Market and Online Marketing**
Athiwat Daengkanit, Chairman, Rubber Authority of Thailand
- India's Best Practices in Pricing System**
Dr. Binai K. Kurian, Deputy Director for Marketing, India Rubber Board
- Rubber Products Manufacturing**
Gabriel Cornelio Igot, President, PIRB
- Malaysia's Pricing Practices and Marketing Assistance to Rubber Smallholders**
DATO' DR. ZAIRUSSANI MOHD. NOR, Director General, Malaysian Rubber Board
- Challenges and Issues on Domestic and Export Marketing**
Mr. Banfacio Tan, President/CEO, Farma Rubber Industries, Inc.
- Domestic Consumption of Natural Rubber in the Philippines**
Mr. Richard C. Manaloto, Purchasing Section Manager, Yachawan Tire Philippines, Inc.

Response of New-planting to Price
Planting Boom (2008-2013)
Area new planted in ASEAN region
Price of SBR 20 (USD/TON)

DTI R9 FB PAGE
8:30AM - 5:00PM

DTI.Region9

6.11 Hosting of International Meetings/Workshops

- a) ANRPC Workshop on Supply, Demand & Modeling of Natural Rubber Industry held at Holiday Inn & Suites, Makati City on July 2-5, 2018. Discuss on estimation methods of area, production, import, export, stock and consumption of rubber which shall provide data on statistics and other rubber industry updates.



(ANRPC Workshop on Supply, Demand and Modelling of Natural Rubber Industry was conducted on July 2-5, 2018 at Holiday Inn and Suites, Makati City)

- b) The Philippines hosted the 27th ASEAN Consultative Committee on Standards and Quality – Rubber-Based Product Working Group (ACCSQ-RBPWG) at Marco Polo Hotel, Davao City on August 13-16, 2018. The activity was participated by the following countries:

- o Cambodia- 3 Delegates
- o Indonesia- 5 Delegates
- o Lao PDR- 2 Delegates
- o Malaysia- 4 Delegates
- o Myanmar- 2 Delegates
- o Philippines- 23 Delegates
- o Thailand-10 Delegate
- o ASEAN Secretariat-2 Delegates

A total of 7 countries with total delegates of 49 delegates excluding two (2) ASEAN Secretariat. The third day meeting was held at USM in Kabacan, North Cotabato with a visit at the Philippine Rubber Testing Center in USM.







Philippine Rubber Industry Roadmap

III. PHILIPPINE RUBBER INDUSTRY ROADMAP

A. CHALLENGES AND OPPORTUNITIES

Constraints are the factors that hinder the growth and competitiveness of the industry. Opportunities are facilitating factors that may contribute to the development of the industry. While there are challenges plaguing the industry during the last several years particularly the upstream sector, there are also potentials for business expansion and development. In fact, some of the constraints identified can even be transformed into business opportunities for MSMEs in rubber-producing regions in the country. However, one of the most pressing concerns of the industry is the lack of policy supports and specific institution to serve as anchor in the efforts of both government and the private sector to develop the industry.

The creation of the Philippine Rubber Industry Development Board has been the battle cry of the industry since the first Philippine Rubber Investment and Market Encounter in 2012 (PRIME 2012) in Clark, Pampanga. The Rubber Bills filed in both House of Representatives and in the Senate are still pending since the 17th Congress. Most of the concerns reflected in Figure 12 are recurring factors that the government failed to properly address during the past many years due to inadequate budget earmarked for the industry by the concerned agencies or simply the failure to put the rubber industry in the top priority list of the government.

The challenges and opportunities identified in Figure 13 are the results of several workshops and meetings with various rubber stakeholders. These have been validated every year during the annual performance assessment for the last five (5) years. Most of these concerns are carried over from the previous roadmap. The PHLRUBBER member-agencies continue to promote all business opportunities indicated in the following chart so as to pump prime fresh investment in the industry that would result in more employment and ultimately reduction in poverty most particularly among the smallholders and workers who are totally dependent on the industry.

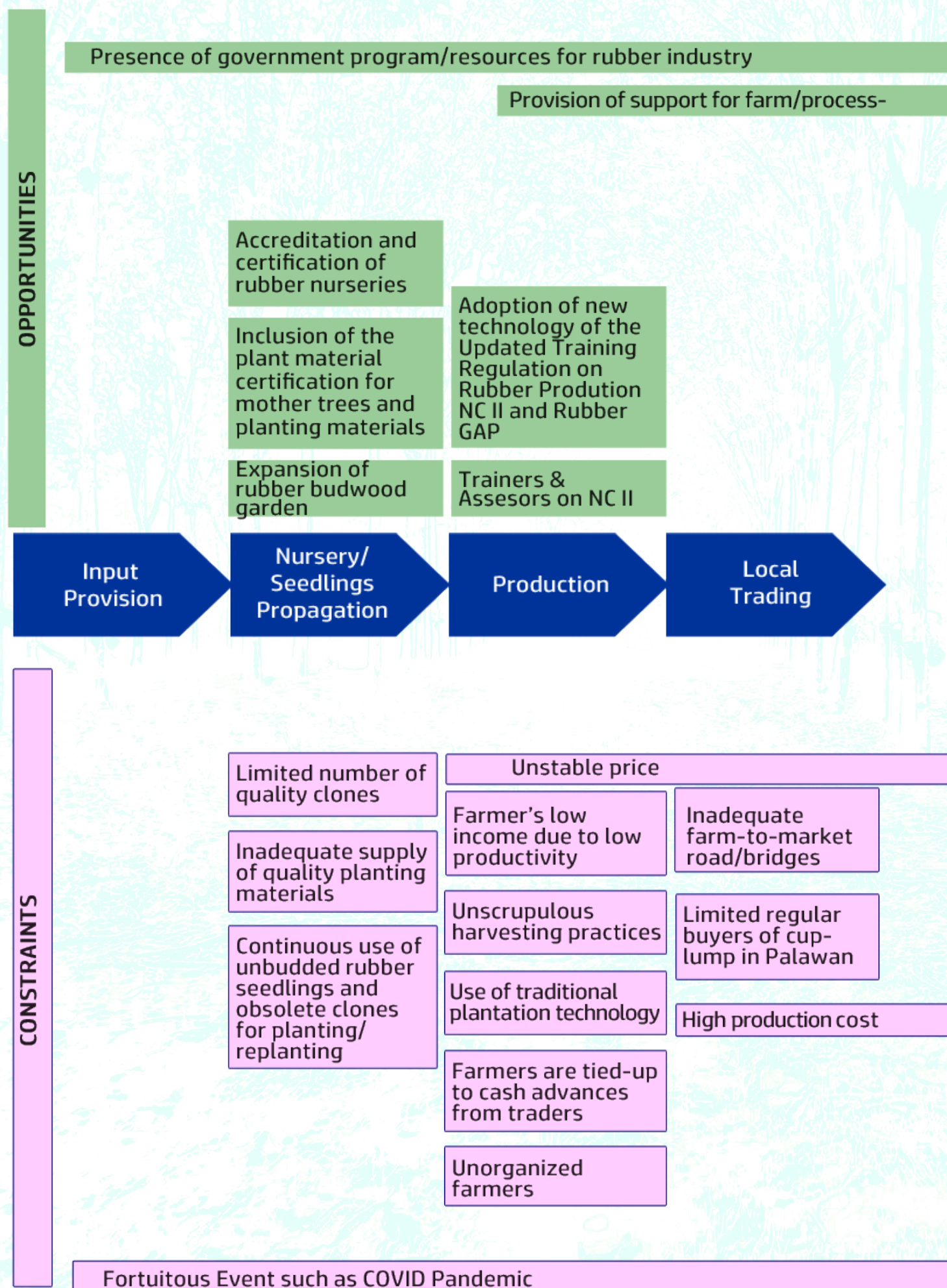


Figure 13: Industry Constraints and

ing mechanization

Presence of ISO 17025 accredited Rubbber Laboratories for Natural Rubber & Rubber Products

Presence of Economic Zone and Establishment of electric companies in ZamboEcozone

Availability of technology for the production of carbon master batch

Increasing demand of motorcycle tires locality

Upgrading of Crumb Rubber Processing Plants

Establishment of motorcycle tire and slipper manufacturing in Mindanao

Operationalization of Rubberwood Processing Facility in Zamboanga Sibugay

Investment Opportunity in rubber products manufacturing

Establishment of Port in ZamboEcozone

Increase domestic demand for tires

Expansion of tire manufacturers in China

Processing

Marketing of Semi-Processed

Manufacturing

Marketing of Rubber-based Products

Absence of technology on mixing rubber master batch and asphalt

Absence of appropriate warehouse facility to hold stock

Limited working capital to invest in village-level processing facility

Limited regular buyers of ADS in Palawan

Inadequate marketing research and assistance for rubber products

No registered training and assessment center for rubber processing

Inconsistent quality of semi-processed rubber

Lack of market data on motorcycle products in the Philippines

Stiff competition from imported products

Port Congestion

Excessive logistic cost

Under utilized processing plant

Instability of container vessel for exporting of rubber and rubber-based products due to pandemic and other fortuitous events

Inadequate efficient machinery for carbon master batch (compounded rubber)

High price of imported carbon black

Opportunities per Value Chain Functions

B. Vision

Industry stakeholders, government and private sector alike are one in their aspirations for the growth of the Philippine rubber industry. They envisioned the industry to be -

An inclusive, globally competitive, and resilient rubber industry providing sustainable benefits to all stakeholders.

C. Mission

Every key player in the industry whether the small farmers or the big rubber-based product manufacturers are committed to work together in convergence with the government for the -

Development of a cost-competitive, quality-driven, supply-reliable, innovative products-diversified value chain from primary production to manufacturing and marketing of rubber-based products under sustainable practices.

D. Goal

Given the mission subscribed to by all stakeholders in the industry, it is expected that the growth of the industry would ultimately result –

To increase the benefits of all the stakeholders in the rubber industry thereby spreading the gains down to the smallholders in the remote barangays in all rubber-producing provinces in the regions.

E. Objectives

The growth of the industry is anchored on the attainment of specific development objectives spelled out in this roadmap. By end of year 2028, the industry should have achieved the following:

1. Establish the Philippine Rubber Industry Development Board;
2. Improve farm productivity per hectare;
3. Expand total area planted to rubber to at least 265,391 hectares using certified planting materials under NSIC registered varieties;
4. Increase the number of accredited plant nurseries and budwood gardens (government and private owned) by 20% annually;
5. Increase investments in rubber plantation, processing plants and rubber products manufacturing;
6. Increase the export volume of processed and manufactured rubber products by 10% annually; and
7. Increase import substitution of natural rubber by 5% by major rubber-based manufacturers.

F. Development Strategies

The achievement of the seven (7) industry development objectives requires the implementation of ten (10) strategic agenda. Specific Programs and projects under each of the following strategies shall be implemented by government agencies in close collaboration with industry leaders:

1. Creation of the Philippine Rubber Industry Development Board that will oversee, implement policies, and set direction in all aspects of the rubber industry value chain;
2. Promotion of policies on the plant nursery accreditation and planting material certification of DA-BPI;
3. Quality improvement by Increasing number of NSIC registered clones;
4. Productivity improvement by adopting new and innovative technologies and Good Agricultural Practices (GAP);
5. Provision of support to rubber farmers in farm expansion, farm mechanization, modernization and quality production through the convergence to be led by the Department of Agriculture and other concerned government agencies and stakeholders;
6. Intensify research, development and extension services to improve technology in production;
7. Promoting investment in the manufacture of rubber-based products for domestic and global supply;
8. Development of industry financial services to facilitate access to financing by farmers and entrepreneurs;
9. Promotion and advocacy for compliance with product standards and market requirements in order to increase the export of rubber and rubber products;
10. Improvement of information network and linkages to ensure sustainability of assistance and provide access to new markets and technologies, and sustain membership in intergovernmental organizations as a platform for the exchange of information, technology and market.

The implementation of the various programs, projects and activities of the different government agencies and private organizations shall be coordinated by the Philippine Rubber Technical Working Group chaired by the private sector.

G. Major Development Projects

Based on the attached Philippine Rubber Industry Cluster Action Plan (2023-2028), the following are identified as major projects for implementation during the next six years by the members of the PHLRUBBER TWG:

- 1) Implementation of the revised GAP on Rubber and Rubber Production NC II;
- 2) Adoption of root-trainer in nursery operation and rain guard in latex production;
- 3) Accreditation of rubber laboratories for natural rubber and rubber based products to ISO 17025;
- 4) Certification/alignment of rubber processing plants to ISO 9001:2015;
- 5) Establishment of Rubber Slippers Manufacturing;
- 6) Pilot Testing of Rubberized Asphalt Road;
- 7) Development of digital marketing platform for rubber products;
- 8) Development of Standards on Air-Dried Sheets;
- 9) Passage of house bill and senate bill, "Establishment of the Philippine Rubber Industry Development Board"; and,
- 10) Membership with International Rubber Study Group.



H. Industry Performance Indicators

Indicators	2023	2024	2025	2026	2027	2028
New Jobs Created (Per WB Research Data, 2 jobs per additional hectare)	3,800	4,160	6,240	10,220	10,400	13,520
Productivity: Average Yield per hectare per year (DR) (WB Research Data) • Old plantation • Newly developed plantation (4 year-gestation period)	0.80MT	0.80MT	0.80MT	0.80MT 2MT	0.80MT 2MT	0.80MT 2MT
Farmers' Income (Poverty Threshold @ PHP 14,498.00/Month Note: • Current production of traditional farms which is 800kg dry/ha /yr needs a price equal or higher than P110.00/ kg to meet the poverty threshold set by govt.						
Total production areas (hectares)	243,121	245,201	248,321	253,431	258,631	265,391
Production Volume (MT of DR) • Old plantation • Newly developed plantation (4 year-gestation period)	221,595 - 221,595	224,802 - 224,802	228,055 - 228,055	235,516 231,356 4,160	242,664 234,704 7,960	250,221 238,101 12,120
Investments in Plantation development & Manufacturing (PHP B) • For production (P 250,000/hectare) • For Manufacturing	0.48	0.52	0.78	1.28	1.30	1.69
Domestic Sales (in PHP M)	5.55	6.11	6.72	7.39	8.13	8.94
Exports Sales (in M USD)	704.64	775.11	852.62	937.88	1,031.67	1,134.83

LEGEND



**Total Budwood
Gardens Available**



**Additional Area
Planted**



**Budwood Garden
Establishment**



**Total Production
Area**



**Total Planting
Materials Available**

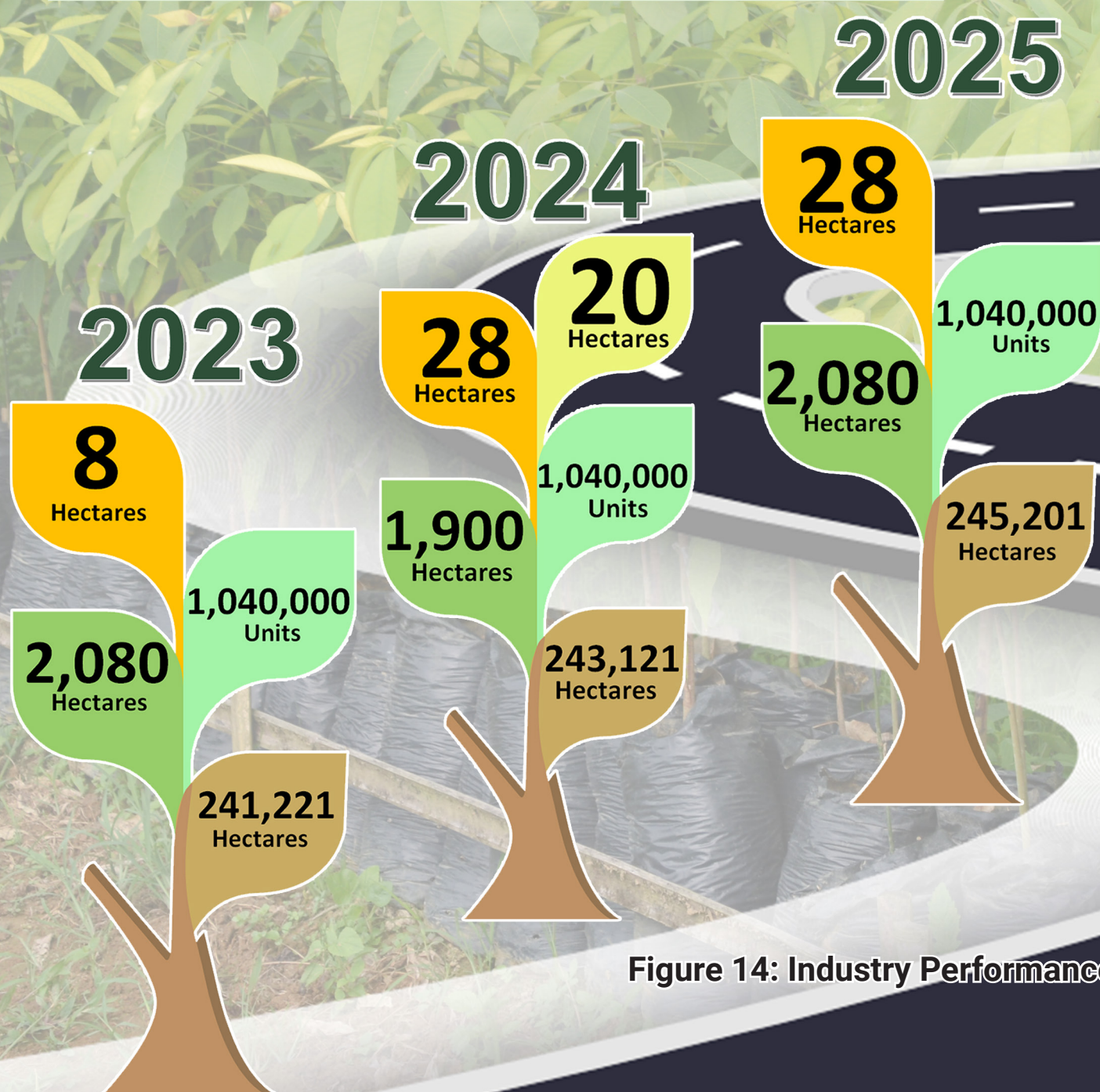


Figure 14: Industry Performance



Indicators' Target on Area Planted

Table 17
Source of Planting Materials

TARGETS	2023	2024	2025	2026	2027	2028
Existing BWG (has)	8	8	20	20	20	30
Bud wood Garden (has.) establishment	20	0	0	10		
Cumulative BWG	28	28	20	30	30	30
Available Budwood Garden for Planting Materials	8	8	20	20	20	30
No. of hills per hectare	4,000	4,000	4,000	4,000	4,000	4,000
No. of budeye per hill (Existing)	50	50		50	50	50
No. of budeye per hill (New)			30			30
65% survival rate for planting	65%	65%	65%	65%	65%	65%
Total no. of planting/bagging materials	1,040,000	1,040,000	1,560,000	2,600,000	2,600,000	3,380,000
Less: No. of planting materials for budwood establishment (4,500 per hectare)	90,000	-	-	45,000	-	-
Total Planting Materials Available	950,000	1,040,000	1,560,000	2,555,000	2,600,000	3,380,000
No. of planting materials per hectare	500	500	500	500	500	500
Total New Area Planted (hectare)	1,900	2,080	3,120	5,110	5,200	6,760

Table 18
Physical Targets for Rubber Planting, Model Farm and Techno-Caravan

TARGETS	2023	2024	2025	2026	2027	2028
New Planted Area	1,810	2,080	4,680	7,800	7,665	7,665
Establishment of bud wood gardens	20	-	-	10	-	-
Establishment of model farms on strategic areas	8	8	8	8	8	8
Techno-caravan / seminars / training	24	24	24	24	24	24

Table 19
Production Volume Target

Item / Year	2023	2024	2025	2026	2027	2028
¹ Production Volume (MT of DR)	221,595	224,802	228,055	231,356	234,704	238,101
Yield (MT/ha)	20	-	-	10	-	-
*Newly developed area				2	2	2
² Area Harvested (hectares) *4- year gestation period				2,080	3,980	6,060
Production Volume				4,160	7,960	12,120
Total Production Volume	221,595	224,802	228,055	235,516	242,664	250,221

Assumptions:

¹ Projection is based on the average increase in production volume for the past five-years

² Area developed with quality planting materials starting 2022 will only have a 4-year gestation period and will be harvested in 2026

I. Budgetary Requirements for Rubber Plantation and Production

TARGETS	2023	2024	2025	2026	2027	2028
New Planting areas (ha)	1,900	2,080	3,120	5,110	5,200	6,760
New Budwood Gardens (ha)	20			10	-	-
BWG establishment cost PhP750k/ha (PhP M)	15			7.5	-	-
Total No of Baggings ('000 pcs)	1,040	1,040	1,560	2,600	2,600	3,380
Cost per Bagging is PhP70.00 (PhP M)	72.80	72.80	109.20	182.00	182.00	236.60
Equipment (in units:						
1) Heavy Machinery Needed						
-Bulldozer	20	20	20	20	20	20
-Backhoes	20	20	20	20	20	20
2) Small Bulldozers	20	20	20	20	20	20
3) Tractor	20	20	20	20	20	20
For financial requirement (PhP M)						
Php 250,000/ha (provided that the land prep is subsidized)	475.00	520.00	780.00	1,277.50	1,300.00	1,690.00
Techno demo farms (PhPM)	5	5	5	5	5	5
Credit facilitation						
Techno Caravan and Training (PhP M), P2,000/pax/ day, 2 days, 50pax @ 3 sets/year/enrolled region	4.2	4.2	4.2	4.2	4.2	4.2
Total Costs (PhP M)	572.00	602.00	898.40	1,476.20	1,491.20	1,935.80

J. Implementing Organization

The different programs, projects and activities for the development of the rubber industry are initiated and conducted by the members of the Philippine Rubber Technical Working Group (PHLRUBBER).

During the 15th meeting of PHLRUBBER hosted by the Bureau of Plant Industry (DA-BPI) on May 18, 2016, the body decided that the private sector must lead the PHLRUBBER TWG to push for the development of the rubber industry. Below is the organizational structure of the Technical Working Group.

PHLRUBBER Technical Working Group

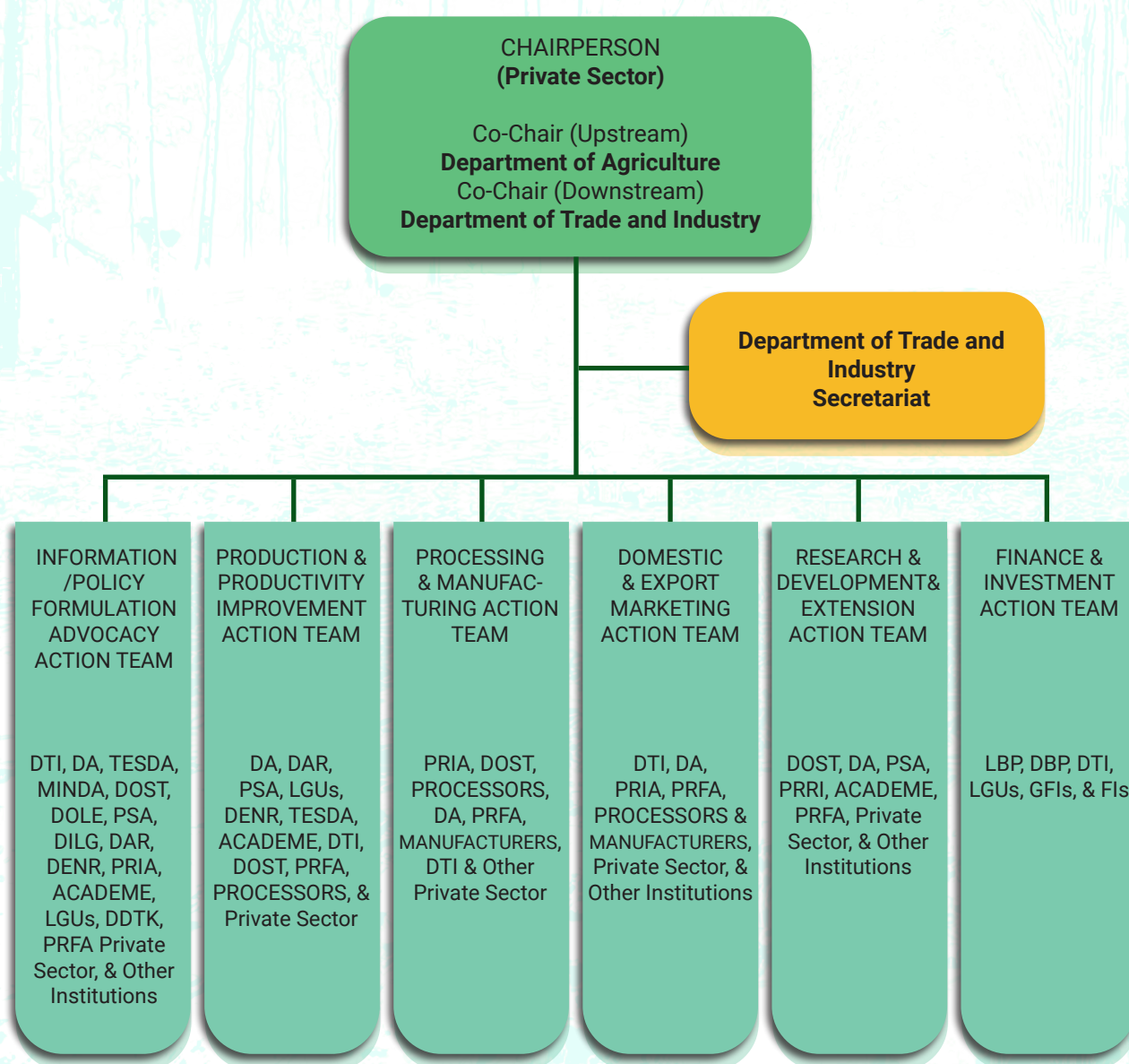


Figure 15: PHLRUBBER Organizational Structure

Listed below are the personalities that have contributed to the development of this roadmap and implemented the various initiatives and programs of the member agencies.


Agencies	Representatives/Focal Persons
Department of Trade and Industry <ul style="list-style-type: none"> • ROG • BSMED • PAB • EMB • BOI • BPS • Regions <ul style="list-style-type: none"> o 4B o 9 o 10 o 11 o 12 o 13 	<ol style="list-style-type: none"> 1. Usec. Blesila A. Lantayona 2. ASec Asteria Caberte 3. Jaworski Rifael 4. Katrina Talle 5. Grace Juan 6. Graciela Maria Juatco 7. Ann Fernando 8. Janine Adordionisio 9. RD Joel Valera 10. Maria Isabel Pagayona 11. RD Al-Zamir I. Lipae 12. Angelie Amazon 13. Joebertson Bicalas 14. RD Ermedio Abang 15. Kimberly Bacasma 16. RD Maria Belenda Ambi 17. Oscar Empiedad Jr. 18. PD Ferdinand Cabiles 19. RD Gay Tidalgo 20. Ira Mantilla
Department of Agriculture <ul style="list-style-type: none"> • HVCDP • PRRI • BPI • DA9-Research Center • PCAF 	<ol style="list-style-type: none"> 21. Usec Evelyn Laviña 22. Paolo Tatlonghari 23. Meynard Abello 24. Noel Garcia 25. Engr. Roger Bagaforo 26. Ernie Camacho 27. Irene Camba
Department of Science and Technology <ul style="list-style-type: none"> • PCIEERD • PCAARRD • ITDI • FPRDI 	<ol style="list-style-type: none"> 28. Carluz Bautista 29. Christian Alec Mañaga 30. Niel Lalusin 31. Bianca Ignacio 32. Kristina Paula Anacleto 33. Dr. Marcelito Siladan 34. John Benrich Zuniga 35. Engr. Adelaida Senica 36. Engr. Ner Rodriguez 37. Dr. Maria Cielito Siladan

Department of Agrarian Reform	38. Susan Perez 39. Jeffrey Dalangin
Department of Environment and Resources	40. Jinia Yaneza
Technical Education and Skills Development Authority	41. Regino Cleofe 42. Bernadette Audije
Landbank of the Philippines	43. Edgardo de Guzman 44. Edison Reyes
University of Southern Mindanao	45. Frederick Navarro
PLGU-North Cotabato	46. Engr. Jet Telin
University of the Philippines- Los Baños	47. Kevinilo Marquez
Private Stakeholders <ul style="list-style-type: none"> • PCAF HVCBP for Rubber • PHLRUBBER • Philippine Rubber Industries Association, Inc (PRIA) • Philippine Rubber Farmers' Association (PFRA) • Go Negosyo for MSME Development • CARAGA Rubber Industry Foundation, Inc • Farma Rubber Industries • STANDECO • Sunshine Rubber Industries 	48. Jack Alfonso F. Sandique, Chairperson 49. Dr. Sitti Amina M. Jain, Chairperson 50. Gabriel Cornelio Igot, President 51. Engr. Elpidio Carlota, VP for Tires and Retreaders Sector 52. Armando Pedregosa, President 53. Esther Roque, BOD 54. Engr. Merly Cruz, Adviser 55. Dr. Ismael A. Elevazo, Chairperson 56. Bonifacio Tan, President and CEO 57. Ellan Tan-Go, VP 58. Jose Emmanuel Pacheco, Owner 59. Engr. Henry Orate, Owner 60. Florian de Guzman, Managing Partner


A photograph of numerous rubber seedlings growing in black plastic bags. The seedlings have green, pinnately compound leaves and thin, upright stems. They are arranged in rows, with some bags visible in the foreground and others in the background. The text 'Philippine Rubber Industry Cluster Action Plan' is overlaid in large, bold, yellow letters, centered on the image.


Philippine Rubber Industry Cluster Action Plan

STRATEGY	Project/Programs/ Activities	Target	Implementing Agency	Collaborator/s	Timeline	Resources
Production and Productivity Improvement	Strategy 1: Adoption of the plant nursery accreditation and plant material certification of DA-BPI					
	1.1.1 Intensify/strengthen the Nursery Accreditation and Budwood Garden Certification	2 (2023)	DA-BPI	DA, LGU's, Private sectors	2023-2028	0.10 M (2023)
	1.1.2 Maintenance of Rubber Budwood Garden	3 •1-PRRI •2-DA	PRRI/DA	Res. Stations and LGUs	2023-2028	0.02 M
	1.1.3 Expansion of existing budwood gardens using the 3 approved NSIC clones	1	DA-BPI	DA-HVCDP, PRRI	2023	0.15M
	1.1.4 Establishment of Budwood Garden using 7 NSIC Recommended clones	Carmen, North Cotabato) – 2,500 sq.m.	PRRI	DA-ARES	2023	0.2 M
	1.1.5 Support existing nurseries	(6) Nurseries	DA-Caraga	LGUs	2023	0.70 M
	1.1.6 Establishment of bud wood gardens	(7) Budwood Gardens	DA-Caraga	LGUs	2023	3.5 M
	Strategy 2: Expand production by adopting new and innovative technologies and good agricultural practices (GAP)					
	1.2.1 Seedling Production and Distribution of Budded Rubber	•15,000-DA •190,910-PLGU-ADS •16,533-PRRI	PRRI/DA	rubber farmers, MLGUs, POs	2023	8.59 M (PLGU-ADS)
	1.2.2 Implementation of developed GAP		Private Stakeholders	PRFA, LGUs, DA, DTI	2023	
	1.2.3 Training for Work Scholarship Program –Rubber Production NC II	120	TESDA	TVET Institutions	2023	2.18 M
	1.2.4 Package of Technology training on Good Agricultural Practices on Latex Production	2	DA-HVCDP	Municipal Agriculturist Office People's Organizations.	2023	0.40 M

PHILIPPINE RUBBER INDUSTRY CLUSTER ACTION PLAN 2023-2028							
 PHLRUBBER Technical Working Group							
STRATEGY	Project/Programs/ Activities	Target	Implementing Agency	Collaborator/s	Timeline	Resources	
Production and Productivity Improvement	Strategy 3: Provide support to rubber farmers in the form of farm expansion, farm mechanization, modernization and quality production through the convergence initiative platform to be led by Department of Agriculture and other concerned government agencies and stakeholders						
	1.3.1	Piloting of Rubber-Based Farming Technologies	7 sites	PRRI	DA-HVCDP, Phil-FIDA, LGUs, Private sectors	2023-2025	21.69M
	1.3.2	Field Verification Trials of Rubber Farming Technologies for the Socio-economic Improvement of Smallholder Rubber Farmers	1	PRRI	DA-HVCDP, Phil-FIDA, LGUs, Private sectors	2023	1.95 M
	1.3.3	Rubber Quality Enhancement, Post-Harvest Management and Tapping Workshop-Seminar	2	DA-RFO 9	LGU's, Private sectors	2023	0.20 M
	1.3.4	Provision of fund for the Production of Seedlings and Plantation Establishment	50 ha 25,000 seedlings	DENR	Pos, Family Beneficiaries	2023	1.2 M
	1.3.5	Promote cost-effective fertilizer management and application and the complementary use of organic fertilizer - Provision of Inorganic Fertilizer	1,914 bags	PLGU-ADS	LGU's, Private sectors	2023	3.57 M

PHILIPPINE RUBBER INDUSTRY CLUSTER ACTION PLAN 2023-2028							
STRATEGY		Project/Programs/ Activities	Target	Implementing Agency	Collaborator/s	Timeline	Resources
Production and Productivity Improvement	1.3.6	Provision of Formic Acid to Farmers Association	12,000 liters	PLGU-ADS	Farmers Association, DTI	2023	3.6 M
	1.3.7	Strengthening of Rubber Farmers Association and Cooperatives	16 trainings 4 batches 62 trainings	PRRI DAR PLGU-ADS	DA, LGU's, Private sectors	2023	2.486 M PRRI 0.096 DAR 1.653 M PLGU-ADS
	1.3.8	Provision of Hauling Trucks (Zambo Sibugay Rubber Enterprise Project ARBO Consolidators)	3 units	DAR	Project ConVERGE ARBO rubber consolidators	2023	3.394 M
	1.3.9	Provision of Herbicides (Zambo Sibugay)	800 liters	DAR	Project ConVERGE ARBO rubber consolidators	2023	0.296 M
	Others						
	1.4.1	Maintenance and Protection of Rubber Plantation	50 ha (Year 1) 872 ha (Year 2) 279 ha (Year 3)	DENR	Pos, Family Beneficiaries	2023	5.86 M

 PHLRUBBER Technical Working Group		PHILIPPINE RUBBER INDUSTRY CLUSTER ACTION PLAN 2023-2028					
STRATEGY		Project/Programs/Activities	Target	Implementing Agency	Collaborator/s	Timeline	Resources
Processing and Manufacturing		Strategy 1: Promote investment in the manufacture of rubber-based products for domestic and global supply					
		2.1.1 Preparation of PFS on Rubber Gloves and Slippers Manufacturing Plant in Zamboanga Sibugay		PLGU-ZSP	JICA, PPRPC, ZamPen RUBBER	2023	
		2.1.2 Develop high value products from rubber wood		DOST-FPRDI	TARBEMCO, DTI,DOST-IX, Phil Chamber of Furniture, CITC	2023-2028	
		2.1.3 Operationalization of Crumb Rubber Processing Plant	1	DTI-Caraga	FASRMCO, MLGUs	2023	DTI-CARAGA – P3.5M DA-Caraga P5M
		2.1.4 Piloting of the Rubberized Asphalt Road	500 meters	PLGU-North Cotabato	UPLB, MinDA, DPWH-BRS, DOST-PCIEERD, Sunshine Rubber	2023	3 M
		2.1.5 Provision of Rubber Quality Improvement Facility thru SSF	4 cooperators	DTI9	Private Stakeholders	2023	1.768 M
		2.1.6 Establishment of Motorcycle Tire Manufacturing in Mindanao	1	PRFA	EU thru MinDA	2023	PhP 150 M
		Strategy 2: Promote and advocate for compliance with product standards and market requirements in order to increase export rubber and rubber products					
		2.2.1 Certification/Alignment Rubber Processing Plants to ISO9001-2015	1	New Atlas Rubber Processing Inc.	DTI9	2023	
		2.2.2 ISO 17025 accreditation of NR laboratory Testing Facility	2	USM-PRTC and PRRI	DTI12, PAB	2023	
		2.2.3 Operationalization and upgrading of Rubber Laboratory	1	PRRI	DA-BAR	2023	

PHILIPPINE RUBBER INDUSTRY CLUSTER ACTION PLAN 2023-2028					
 STRATEGY					
	Project/Programs/Activities	Target	Implementing Agency	Collaborator/s	Resources
Domestic and Export Marketing	Strategy 1: Enhance existing and develop new information exchange to ensure sustainability of assistance and provide access to new markets and technologies				
	3.1.1 Conduct Info-Session: a.DBFTA – AEC b.Market Opportunities c.Direction of Export Trade		DTI, EMB	Private Stakeholders	2023-2028
	3.1.2 Market Matching Forum /Marketing Contract Signing	1	DAR	ARBOs/ rubber farmer	2023 0.08M
	3.1.3 Dissemination of Daily NR Price Reference		DTI-9		2023-2028
	3.1.4 Conduct of Virtual Business Matching with PRIA and 1 India-Based Company (For validation of EMB with PTIC-India)	1 India-based company	DTI-EMB	PTIC-India, PRIA	2023
	3.1.5 Establish Market Linkages among rubber stakeholders in Mindanao	1 per rubber region	DTI and BARM-MTIT	PRFA, Farma Rubber	2023
	3.1.6 Develop digital marketing platform for rubber products		DTI (BDTP/EMB)		2023-2028
	Others				
	3.2.1 Construction/concreting of farm to market roads	13 Brgy. Bucac-Brgy. Marcelina, Bayugan City(4.749km)	DA-PRDP	LGUs	2021-2023 60,987,845.17
	3.2.2 Construction of GARBEMCO Multi-Purpose Building/ Warehouse	1 unit	DAR (Project ConVERGE)	GARBEMCO	2021 0.85M
	3.2.3 Provision of Hauling Trucks (Isuzu) for Rubber Enterprise Activity	3 Units	DAR (Project ConVERGE)	ARBOs/ Rubber farmers	1st Qtr 2023 3.394M

STRATEGY	Project/Programs/Activities	Target	Implementing Agency	Collaborator/s	Timeline	Resources
Research and Development and Extension Services	A. RESEARCH					
	4.1.1 Rubber and waste plastic as reinforcement additives for asphalt binder based pavement infrastructure		UPLB	King's Rubber, PRRI, Yokohama, PRA, DTI IX, DPWH, Sunshine Rubbertech Inc,	2022	
	4.1.2 Land Management of Rubber-based Cropping Systems in Southern Philippines	1	USM	Griffith University, Caraga State University, Provincial Government of Agusan del Sur	2019-2024	P42.2M
	4.1.3 Multilateral Clone Exchange Field Trial	1 site	PRRI	USM, DA-RFO IX, Private Sectors	2021 - 2025	2.5 M
	4.1.4 Field Trial of Rubber Tree Rainguards for Improved Latex Yield	Established 9 sites; Installation of rainguards (4 types); Data gathering	PRRI	DOST-PCAARRD (Funding Agency), rubber farmers, MLGUs	2020-2021	Php 3.7 M (DOST-PCAARRD)
	4.1.5 Exploring the Potentials of Mucuna bracteata as Weed Control and Biofertilizer Supplement for Efficient Growth	1	PRRI	LGU and Rubber Farmers Associations/ Cooperatives	2022-2024	600,000.00
	4.1.6 Developing High Yielding Clones (Ortet Selection)	1	PRRI	LGU and Rubber Farmers Associations/ Cooperatives	2022-2024	144,000.00
	4.1.7 Inventory and Duplication of Rubber Collection	1	PRRI		2022-2024	420,000.00
	4.1.8 Morphological and Molecular Identification of Pathogens Infecting IRRDB Clones	1 (1 project site)	PRRI	Tambanan Agrarian Reform Multipurpose Beneficiaries Cooperative (TARBEMCO), Naga, ZSP	January-December 2022	446,000.00
	4.1.9 Field Verification Trials of Rubber Farming Technologies for the Socio-economic Improvement of Smallholder Rubber Farmers		PRRI	PRRI	2022-2024	1,954,000.00
	4.1.10 Adaptability in Early Growth Performance Trial of IRRDB Exchange Clones	1	PRRI	DA-RFO XII	January 2021-December 2022	2,544,000.00
	4.1.11 Yield Assessment of Rubber Clones under Different Latex Harvesting System		USM	DA-1X CMU, SLSU, ISU WPU	2019-2022	4.80M
	4.1.12 Field Trial of Root Trainer Grown Rubber Planting Materials in selected Traditional and non-Traditional Areas	Promotion and evaluation of root trainer rubber plants in different locations	USM	SLSU, CMU LGU-BAYAWAN, DA-RFO-9, 11, 12, 13, SLSU-Leye, SLSU-Quezon	2022-2024	Php 5 M (DOST -PCAARRD)
	4.1.13 Evaluation on the agronomic performance of rubber RRIM Series in Luzon and Mindanao for NSIC registration/Roger O. Bagatoro	Geotagged and documented areas with RRIM series clones Compiled data and characteristics of RRIM series clones for NSIC Registration	DA-RFO 9	USM-ARC; Basilan State College; DA-PRRI; DA-RFO XIII	2022-2023	5,000,000 DOST PCAARRD


STRATEGY	Project/Programs/Activities	Target	Implementing Agency	Collaborator/s	Timeline	Resources
Research and Development and Extension Services	A. RESEARCH					
	4.1.14 Development of application to identify rubber clones in the field		DOST-PCAARRD		2023-2024	10 M
	4.1.15 Molecular studies and field performance evaluation studies of new rubber clones obtained from the Multilateral Clone Exchange of IRRDB				2025-2026	25 M
	4.1.16 Facilitation of the NSIC registration of new rubber clones				2025-2027	35 M
	4.1.17 Development of rubber molecular and experimental laboratory at PRR1				2026-2028	35 M
	4.1.18 Development of rubber testing laboratory				2027-2032	15 M
	4.1.19 Development and field testing of novel latex harvesting methods				2022-2023; 2026-2027	20 M
	4.1.20 Development of an Efficient Rubber Tapping Device for the Improvement of Rubber Latex Harvesting				2022-2023	5 M
	4.1.21 Field Trial assessment of Endophytic Fungi as biocontrol agent against white root rot disease of rubber				2024-2025	8 M
	4.1.22 Development of biocontrol agent against major and emerging leaf diseases of rubber				2024-2025	8M
	4.1.23 Development of an Online Rubber Clinic for the management and surveillance of rubber pests and diseases				2022-2023	5 M
	4.1.24 Development of a monitoring software for rubber pest and diseases				2028-2030	10M
	4.1.25 Assessment of emerging pest and disease in rubber plantations				2023-2028	15 M
	4.1.26 Economic Valuation Studies of rubber plantations affected by pest and diseases				2022	5M
	4.1.27 Fabrication of state-of-the-Art Rubber Sheeting Machine				2022-2023	8 M
	4.1.28 Formulation of ready to use formic acid into smaller volumes for smallholder farmers for sustainability of quality crumb rubber				2022-2023	5M

STRATEGY	Project/Programs/Activities	Target	Implementing Agency	Collaborator/s	Timeline	Resources
Research and Development and Extension Services	A. RESEARCH					
	4.1.29	Determination of Management Practices and Development of Protocols to Minimize Odor-Causing Microorganisms in Rubber Processing Plants			2023-2024	5 M
	4.1.30	Development and valuation studies of primary rubber products for value-adding for the benefit of smallhold rubber farmers			2025-2026	5M
	4.1.31	Development of products from senescent and unproductive rubber trees			2025-2026	5M
	4.1.32	Development of "ready to mix" formic acid enterprises in Zamboanga and other key rubber producing areas in Mindanao			2026	5M
	4.1.33	Roll-out of budwood garden establishment technologies for new high yielding rubber clones			2022-2024	13 M
	4.1.34	Field testing and economic assessment of advanced technologies on rubber plantation development			2022-2023	5M
	4.1.35	Design and Fabrication of an economical and reproducible mechanized soil auger for smallhold rubber farmers			2024-2025	7 M
	4.1.36	Development and field testing of novel technologies on nursery production			2023-2024	45 M
	4.1.37	Development of Rubber-based Agroforestry model with windbreakers for resiliency using the anticipatory action approach			2026-2027	10M
	4.1.38	Policy Advocacy on the Management of Stem Bleeding and Tapping Panel Dryness of Rubber			2022	5M
	4.1.39	Policy Advocacy on the management of white root rot and leaf diseases in rubber			2025-2026	10M
	4.1.40	Policy analysis on Emerging issues on rubber			2024-2027	10 M
	4.1.41	Setting up digital traceability system for rubber to address trade-related and quality concerns			2025	5M
	4.1.42	Developing a traceability system for rubber to improve global competitiveness			2023	5M
Research and Development and Extension Services	4.1.43	Impact assessment of R&D Projects on Rubber			2023-2024	5M
	4.1.44	Impact Assessment of Technologies Developed for Rubber			2028	5M
	4.1.45	Adoption of Advanced Technology on Rubber Farming System: an Alternative for a Sustainable Rubber Production			2024-2025	5M


PHILRUBBER Technical Working Group							PHILIPPINE RUBBER INDUSTRY CLUSTER ACTION PLAN 2023-2028			
STRATEGY	Project/Programs/Activities		Target	Implementing Agency	Collaborator/s	Timeline	Resources			
Research and Development and Extension Services	A. RESEARCH			DOST-PCAARRD						
	4.1.46	I-CRADLE on Mainstreaming PQPM thru root trainer technology in Mindanao				2022-2023				25 M
	4.1.47	Technology roll-out of PRRI-developed technologies for improved latex yield				2024-2025				15M
	4.1.48	Technology roll-out of the tool for site matching of rubber				2023-2025				12M
	4.1.49	Technology Roll-out of Rubber Sheeting Machine in Traditional and Non- Traditional Rubber Areas				2024-2025				12M
	4.1.50	Roll-out of endophytic fungi against white root rot				2026-2027				8 M
	4.1.51	Roll-out of endophytic fungi against major and emerging leaf diseases of rubber				2026-2027				8 M
	4.1.52	Technology Roll-out of Developed Novel nursery production and latex harvesting technologies				2027-2028				8M
	4.1.53	Roll-out of new high yielding and NSIC registered clones				2028-2029				10M
	4.1.54	Training on the use of Root Trainer Technology and propagation techniques for improved rubber production				2023;2025; 2027				3M
	4.1.55	GREAT Program				2022-2028				9M
	4.1.56	NICER R&D Center for Rubber				2028-2032				10M

PHILIPPINE RUBBER INDUSTRY CLUSTER ACTION PLAN 2023-2028						
PHLRUBBER Technical Working Group						
STRATEGY	Project/Programs/Activities	Target	Implementing Agency	Collaborator/s	Timeline	Resources
Research and Development and Extension Services	Project 3: Field Evaluation of Multiple Shoot Induction Macro Propagation Techniques for Rapid Rootstock Production					
	4.2.1	• Evaluation of Multiple Shoot Induction Techniques for Rubber Rootstock Production	The most effective method that would induce the highest quantity of shoots	USM	SLSU, CMU, LGU-BAYAWAN	2022-2023 1 0M DOST PCAARRD
	4.2.2	• Efficient Propagation of Macro-cuttings under Screen House with Mist System	Massive and efficient propagation of macrocutting rootstocks	USM	SLSU, CMU LGU-BAYAWAN	2020-2024 2 M DOST PCAARRD
	4.2.3	• Establishment of Macro-cuttings in Root Trainer for Promotion of Rapid Growth and Optimization of Budding Technique	Well-developed root system of macrocuttings	USM	SLSU, CMU LGU-BAYAWAN	2020-2024 1 M DOST PCAARRD
	Project 4: Survey, Identification, and Management/ Control of Emerging Diseases of Promising Rubber Clones in the Philippines					
	4.3.1	•Assessment of rubber diseases in different location in the Philippines	1	PRRI, Technical Working Group on Emerging Diseases of Rubber Clones	USM, JRMSU, SLSU, CMU LGU-BAYAWAN, DA-RFO-9, 11, 12, 13, SLSU-Leyte, SLSU-Quezon	2022 2 M
	4.3.2	•In-vitro evaluation of rubber diseases	1			2022 2 M
4.3.3	•Management of rubber diseases in different locations in the Philippines	1	2022 2 M			


PHILIPPINE RUBBER INDUSTRY CLUSTER ACTION PLAN 2023-2028						
STRATEGY	Project/Programs/Activities	Target	Implementing Agency	Collaborator/s	Timeline	Resources
Research and Development and Extension Services	A. RESEARCH					
	4.4.1 Management of White Root Rot (<i>Rigidoporus lignosus</i>) using Endophytic Fungi from the Roots of Healthy Rubber Tree/DA-RFO 9/Ms. Blair Adora	Economical Control measures of white root rot disease utilizing endophytic fungi from the roots of healthy rubber trees	DA-RFO 9	JRMSU-Tampilisan, CMU, USM	2021-2022	Php 5 M (New/On-going – DOST PCAARRD)
	4.4.2 Screening of Potential Endophytes as Biocontrol Agent against major and emerging Leaf Diseases of Rubber /Mr. Tamie Solpot/USM	Identification of potential endophytes as bio-fungicide to control major and emerging leaf diseases in rubber	USM	Rubber Farmers and Cooperatives, LGUs, PAOs	2021-2022	Php 5 M (New/On-going – DOST PCAARRD)
	4.4.3 Stocktaking of Various Rubber-Based Agroforestry Models/Systems in Different Climatic Types of the Philippines	Inventory/Baseline information on Rubber-based agroforestry systems	PRRI	Rubber Farmers, LGUs	2022-2023	Php 5 M (DOST-PCAARRD)
	4.4.4 Value Chain Analysis of Rubber Production and Marketing	Identification of support activities that will add value to the production and marketing of rubber	PRRI	WMSU	2021-2022	Php 2.5 M (DOST-PCAARRD)
	4.4.5 Latex Yield Evaluation of Conventional (S/2) and Novel (S/4) Rubber Tapping Systems	Evaluate and Compare Rubber Tapping systems in terms of yield and cost	PRRI	CFCST and USM	2022-2023	Php 5 M (DOST-PCAARRD)
	4.4.6 Field Trial Assessment of SKSU-Developed Effective Microorganisms for Potential Biocontrol Agents Against <i>Phytophthora</i> and White Root Rot Disease of Rubber	Assessment Report on the efficacy of SKSU-Developed Effective Microorganisms as Biocon Agent	SKSU	Nursery and Plantation Owners/Operators	2021-2022	Php 5 M (DOST-PCAARRD)
	4.4.7 Utilization of Activated Carbon from Agricultural Waste Products for Natural Rubber Wastewater Treatment in Zamboanga Peninsula		PRRI	Rubber Crumb Processing Plants		POIEERD
	4.4.8 Potential of Rubber Trees for Phytoremediation in Abandoned Mining Areas		PRRI	Abandoned Mining Areas, LGUs, MGB		POIEERD


PHILIPPINE RUBBER INDUSTRY CLUSTER ACTION PLAN 2023-2028						
 STRATEGY	Project/Programs/Activities	Target	Implementing Agency	Collaborator/s	Timeline	Resources
Research and Development and Extension Services	B. DEVELOPMENT					
	4.5.1 Rubber RDE Program: A Support Towards the Revitalization of NR Industry in Davao Region (for validation with DA_11)	6 sites	DA-RFO XI	LGU, DA-BPI	2019 - 2025	P3.4M – DA-BAR
	4.5.2 Field Trial of Rubber Tree Rainguards for Improved Latex Yield	Established 9 sites; Installation of rainguards (4 types); Data gathering	PRRI	CFCST, WMSU	2021-2022	3,700,000 (DOST-PCAARRD)
	4.5.3 Showcasing of improved rubber production and harvesting in non-traditional rubber producing areas (NTRPAs) of the country	Showcase the improved rubber farming technology to small hold rubber farmers in NTAs and introduce the package of technologies that are lacking in these NTAs	DA-RFO 9	DA-RFO 9; DA-MIMAROPA; DA-RFO 2; LGU Bayawan City, Negro Oriental; Rubber Farmer Cooperatives in Palawan, Isabela and Bayawan City	2021-2023	Php 7 M (DOST-PCAARRD)
	4.5.4 Development of Standard Philippine Rubber - Modified Asphalt for Pavement Applications	UPLB	DOST-PCIEERD			PROPOSED. Php 5M
	4.5.5 Establishment of a world class rubber nursery and budwood garden at PRRI for germplasm conservation and production of quality planting materials	To establish a 1-ha state-of-the-art rubber nursery and budwood garden Cater to the nursery and budwood garden-related R&D	PRRI		2023-2025	Php 5 M (DOST-PCAARRD)
	4.5.6 S&T Community-Based Farm on Improved Rubber Farming Technology in Zamboanga Sibugay	Showcase the improved rubber farming technology to small hold rubber farmers in Zamboanga Sibugay Model Site for farmers in the Zamboanga Peninsula	PRRI		2022-2024	Php 17 M (DOST-PCAARRD)
	4.5.7 Fabrication of state of the Art Rubber Sheeting Machine for Non-Traditional Areas (NTAs)	Advanced Rubber Sheeting Machine for NTAs	PRRI	Rubber Farmers and cooperatives	2026-2028	Php 5 M (DOST-PCAARRD)
	4.5.8 Development of a Smallhold-Farmers' Village-based Rubber Processing for Cleaner and Value-added Raw Material for the Upstream Rubber Industry	Develop, validate and replicate the Village-type rubber sheet processing of Kerala, India for value-adding and cleaner rubber raw material product	PRRI		2021-2022	Php 7.8 M (DOST-PCAARRD)
	4.5.9 S&T Community Based Farms on Natural Rubber Nursery, Budwood Garden and Demonstration Farm Establishment in Mindoro Island	Showcase the improved rubber farming technology to small hold rubber farmers in Mindoro Island Model Site for farmers in Mindoro Island	DA-MIMAROPA (Research Division)	Farmer Cooperatives and Nursery Operators, LGUs, PAOs and MAOs	2024-2026	Php 7 M (DOST-PCAARRD)
	4.5.10 S&T Community Based Farms on Natural Rubber Nursery, Budwood Garden and Demonstration Farm Establishment in Negros Oriental	Showcase the improved rubber farming technology to small hold rubber farmers in Negros Island Model Site for farmers in Negros Island	NO-SU (Bayawan City Campus)	Farmer Cooperatives and Nursery Operators, LGUs, PAOs and CAOs	2022-2024	Php 17 M (DOST-PCAARRD)

STRATEGY	Project/Programs/Activities	Target	Implementing Agency	Collaborator/s	Timeline	Resources	
Research and Development and Extension Services	C. EXTENSION SERVICES						
	4.6.1	Technology Roll-out of Young and Mini-seedling budding techniques for the Production of Quality Planting Materials of Rubber	For rapid and efficient production of rubber plants	USM	SLSU, CMU LGU-BAYAWAN, DA-RFO-9, 11, 12, 13, SLSU-Leyte, SLSU-Quezon	2022-2024	5M-DOST PCAARRD
	4.6.2	Reconstitution of ready to use formic acid into smaller volumes for small farmers to replace sulfuric acid for sustainability of quality crumb rubber	Ready to use and easy access formic acid solution for rubber farmers	WESMAARRDEC	Local Stores, Rubber Farmers and Cooperatives	2021-2022	Php 3M (DOST-PCAARRD)
	4.6.3	Agri- Technology Mobile: A blended -Learning Platform for Sustainable Rubber Extension Program in Zamboanga Peninsula	Awareness of rubber farmers on better rubber production	WESMAARRDEC	Rubber farmers and Cooperatives, LGUs, PAOs and MAOs	2021-2025	Php 8M (DOST-PCAARRD)
	4.6.4	Technology Roll-out of Root Trainer to Commercial Nurseries (3 to 5 nurseries)	Commercialization of young budding technology using root trainer in the production of high quality planting materials of rubber	DA-RFO IX	USM, CMU, WMSU and DA-RFO 11	2021-2022	Php 5 M
	4.6.5	Development of Good Agricultural Practices (GAP) in the collection, coagulation, storage, transport and handling system of rubber cuplumps	Document the current rubber latex coagulation, collection, transport, storage, and handling system and serve as baseline for the improvement of quality of rubber raw materials/rubber cuplumps	WMSU/PRRI	Rubber Farmers and Rubber-based Manufacturing Industries	2022-2023	Php 8 M (DOST-PCAARRD)

PHILIPPINE RUBBER INDUSTRY CLUSTER ACTION PLAN 2023-2028						
 PHLRUBBER Technical Working Group		Project/Programs/Activities	Target	Implementing Agency	Collaborator/s	Timeline
STRATEGY		Resources				
Finance and Investment Promotion		Strategy 1: Promote investment in the manufacture of rubber-based products for domestic and global supply				
		Preparation and Development of Investment Promo Collaterals in AVP and Hard copy (infographics): <ul style="list-style-type: none"> • Investment Brief for the different rubber and rubber-based products • Cost of Doing Business (Regional/Provincial) • Company Profiles of Interested Local Investors 		DTI-ROG	DTI-ROs / POs / BOI, MinDA, Private Stakeholders	2023-2028
		Investment promotion of rubber and rubber products in various outbound industry		BOI	Relevant government agencies, other rubber stakeholders	2023-2028
		Inclusion of rubber industry stakeholders in BOI Geomapping Preparation of Value Proposition for Motorcycle Tires Manufacturing		BOI	Private Stakeholders, LGUs, NGAs	2023

STRATEGY	Project/Programs/Activities	Target	Implementing Agency	Collaborator/s	Timeline	Resources
Finance and Investment Promotion	Strategy 2: Develop industry financial services to facilitate access to financing by farmers and entrepreneurs					
	5.2.1	<ul style="list-style-type: none"> •SULONG SAKA (LBP) or High Value Crops Financing •I-RESCUE financing Program of LBP •ACEF program in coordination with DA of LBP 		LBP/DBP/GFIs	DTI, DA, DAR, DBM, PCIC, LGUs, Coops, CFI, Private Sector, Other Agencies	10 B (2023) 50 B (2023) 1.4B (2023)
	5.2.2	PRDP		DA	Rubber Cooperatives/Associations	2023-2028
	5.2.3	Crop Insurance		PCIC	GFIs, CFIs, rubber stakeholders	2023-2028
	5.2.4	SME Financing		SB Corp		2023-2028
	5.2.5	SET-UP		DOST		2023-2028
	5.2.6	Equity Financing/Venture Capital		NDC		2023-2028
	5.2.7	Conduct of financing forum •Webinar series		MinDA	GFIs, DA, DOST, DTI, NDC, Rubber Coops/Asso	2023

PHILIPPINE RUBBER INDUSTRY CLUSTER ACTION PLAN 2023-2028						
<div><div><div></div><div>PHLR RUBBER</div><div>Technical Working Group</div></div></div>						
STRATEGY	Project/Programs/Activities	Target	Implementing Agency	Collaborator/s	Timeline	Resources
Information, Policy Formulation and Advocacy	Strategy 1: Create the Philippine Rubber Industry Development Board that will enforce policies and set direction in all aspects of the rubber industry value chain					
	6.1.1	Lobby for the re-filing of the SB 526 and HB 2664 on the creation of the Philippine Rubber Industry Development Board		DTI/DA	NGAs, Private Stakeholders	2023
	6.1.2	Policy on Requiring Government agencies to prioritize the use of locally produced products		DTI-NICC		2023-2028
	Strategy 2: Enhance information exchange to ensure sustainability of assistance and provide access to new markets and technologies					
	6.2.1	Present recommended conversion factor (yield per tappable tree, yield per area planted/hectare)	Revise the conversion rate from 25% to 50%	PSA	Panel of experts coordinated with PRRI	2021
	6.2.2	Review of past records and existing PSA methodologies and align with ANRPC on data generation of rubber statistics	Revise production data	PSA	Panel of experts coordinated with PRRI	2021
	6.2.3	Development of digital platform for marketing and technology exchange		DTI9	Private Stakeholders	2023
6.2.4	Use of social media in disseminating rubber updates/information		DTI9	Private Stakeholders	2023-2028	
As per PSA Board Resolution No.09 Series of 2021, the PSA will maintain the cup lump product form of rubber in some reports as this is the form required in the valuation of production in agriculture. Also, stated in the Board Resolution that the use of the new conversion rate will start in July 2021. Thus, revision of production-related statistics before the approval of the conversion rate of 50 percent for rubber is not possible.						

PHILIPPINE RUBBER INDUSTRY CLUSTER ACTION PLAN 2023-2028						
 STRATEGY	Project/Programs/Activities	Target	Implementing Agency	Collaborator/s	Timeline	Resources
	6.2.5 Conduct of public consultations for rubber	4 Public consultations	DA-PCAF	Member agencies and Private stakeholders	2023-2028	
	6.2.6 Maintain database on rubber manufacturers' sources for domestic and international materials suppliers (raw rubber, chemicals, tool & die machinery, etc)		PRIA /DTI- BOI	DTI enrolled regions, FTSC	2023-2028	
	6.2.7 Preparation/printing of Compendium of Rubber Farmers, Coops, Processors, Manufacturers, Suppliers, Exporters	1	DTI	DA, BPI, DAR, Farmers, LGUs, PRIA, PRFA	2023-2028	
	6.2.8 Organize/strengthen rubber farmers' group		PRFA, DA, LGUs, DTI		2023-2028	
	Strategy 3: Promote and advocate for compliance with product standards and market requirements in order to increase export rubber and rubber products					
	6.3.1 Development of Standard for Rubberized Asphalt Road		DPWH-BRS	Private Stakeholders, UPLB, DOST	2023-2025	
	6.3.2 Development of Standard for Air-Dried Sheet (ADS)		BPS TC16	DOST-ITDI and ROs	2023-2023	

**Information,
Policy
Formulation and
Advocacy**

STRATEGY	Project/Programs/Activities	Target	Implementing Agency	Collaborator/s	Timeline	Resources
Information, Policy Formulation and Advocacy	6.3.3 Promulgation and Implementation of the revised TR on Rubber Production NC II		TESDA	DA-ATI, LGUs, Private Sector (Industry Association/ Farmers Budders, Tappers-PRFA), DA-RFOs Research Division, DOST-FPRDI, Academe/ Training/Extension Workers	2023	
	6.3.4 Crafting of the EO on the Use of Rubberized Asphalt in Road Overlay Pavement		DTI-NICC	UPLB, LGUs, DPWH, Academe, DOST, Private Stakeholders	2023	
	6.3.5 Advocacy on the use of rubberized asphalt		DTI-ROs	LGUs, DPWH, Academe, DOST, Private Stakeholders	2023-2028	
	Strategy 4: Sustain membership to intergovernmental organizations as a platform for the exchange of information and technology and market					
	6.4.1 Hosting of international conference/seminars/ meetings		DA/DTI/DOST		2023-2028	
	6.4.2 Active participation in international activities of IRRDB, IRSG, ANRPC and other international rubber organizations		DA/DTI, Private Sector, LGUs, Academe,	Small farmer organizations, LGUs, PHLRUBBER Members, PRFA, PRIA	2023-2028	
	6.4.3 Regular attendance/Participation in ISO TC 45 and ACCSQ-RBPTWG Meetings and Related activities		DTI-BPS, DOST-ITDI, DOST-RO9, DA, Private Sector, and Rubber Laboratories		2023-2028	
	6.4.4 Seek membership with IRSG		DTI		2023	
	6.4.5 Submission of research studies to international journals for publication		DA, DOST, PRRI, Academe	DOST-PCIEERD	2023-2028	
	6.4.6 Publication of rubber research studies and extension		WESMAARRDEC	Academe, DA-BAR, PRRI	2023-2028	
	6.4.7 Presentation of rubber research studies to international conferences		DA, DOST, PRRI, Academe		2023-2028	



For inquiries, please contact:

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