



Our Journey Toward Sustainable Oil Palm Products

Palm Progress Report covering 2021



 **BASF**

We create chemistry



„At BASF, we believe
in the obligation to contribute
with our efforts for more
sustainable palm.“

Ralph Schweens
President Care Chemicals,
BASF SE

Letter to our Stakeholders

With around 460,000 metric tons palm oil exposure in 2021 – mostly palm kernel oil and its derivatives – BASF has a remarkable footprint in the palm industry. And we are aware of our responsibility and share the concerns for the impact of palm cultivation on tropical forests, valuable peatland, animals, and local communities.

Although Indonesia reduced primary forest loss for the fifth year, the global deforestation and forest degradation are occurring at an alarming rate, aggregating climate change and loss of biodiversity. At BASF, we believe in the obligation to contribute with our efforts for more sustainable palm, and we will continue to utilize tools and approaches helping us to be successful in this endeavor. For example, in 2021 we have signed up for the Palmoil.io web platform to track deforestation from plantations and link to its suppliers. Palmoil.io brings together the critical ingredients for effective forest monitoring – forest alerts, high resolution satellite scenes, supplier relationships, grievance information together with an estimated traceability to plantation approach.

Talking about the figures, we again in 2021 fully met the first part of our Palm Commitment and procured 100 percent of our palm and palm kernel oil requirements of 242,946 metric tons from RSPO-certified sustainable sources. Our traceability down to oil mill level reached almost 96 percent of our global palm oil demand. Again, we published our product carbon footprint (PCF) for sourcing certified sustainable palm kernel oil. Compared to conventionally sourcing, BASF avoided more than 330,000 metric tons CO2 emission.

Responsible sourcing is a key element in our sustainability efforts, going beyond palm kernel oil and its derivatives. We drive initiatives to increase the share of nature-based ingredients in our portfolio and take an active role in managing our supply chains carefully. Amongst other initiatives, our portfolio is mainly based on certified sustainable oleochemicals mass balance supply chain scheme models, such as the Roundtable on Sustainable Palm Oil (RSPO), the Sustainable Castor Association (SuCCESS) as well as Rainforest Alliance Mass Balance Coconut certification scheme.

All this comes under the umbrella of Care 360 – Solutions for Sustainable Life, our global approach to cover all topics relevant to the future of our markets and industries: sustainability, digitalization, innovation and new approaches to working together.

You want to find out more? “To learn more:”
Please go to www.care360.basf.com.



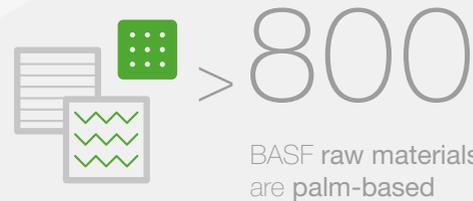
Ralph Schweens
President Care Chemicals,
BASF SE



We will step up our efforts to **improve transparency** and **traceability** in the supply chain. We were able to trace almost **96%** of our **overall oil palm exposure** back to oil mill level in 2020.



in **2021**
we sourced **only RSPO-certified** sustainable palm and palm kernel oil



26
BASF RSPO-certified sites globally

Key Figures

BASF Palm Footprint 2021



conventionally sourced palm kernel oil



36 %
reduction* of CO₂ eq. emissions



RSPO **sustainable certified** palm kernel oil

* Consultant 2.0, www.LGA-net.com/club/palm-oil/, 2019

Core Elements of our Palm Commitment

 Forest conservation

 Traceability

 Time-bound plan

 Physical transformation

 Stakeholder dialog

 Smallholder inclusion

 Progress



Our Journey – BASF's Palm Commitment

When the Roundtable of Sustainable Palm Oil (RSPO) was set up in April 2004, BASF envisioned it as a milestone for the palm oil world. Consequently, BASF joined the RSPO in November 2004, very soon after the start. Since then, the RSPO has had a remarkable journey towards the sustainable certified production of palm and palm kernel oil – especially with the renewal of the Principles and Criterias in 2018. Consequently, we consider RSPO to be a standardized implementation of a strong No Deforestation, No Peat, No Exploitation (NDPE) policy.

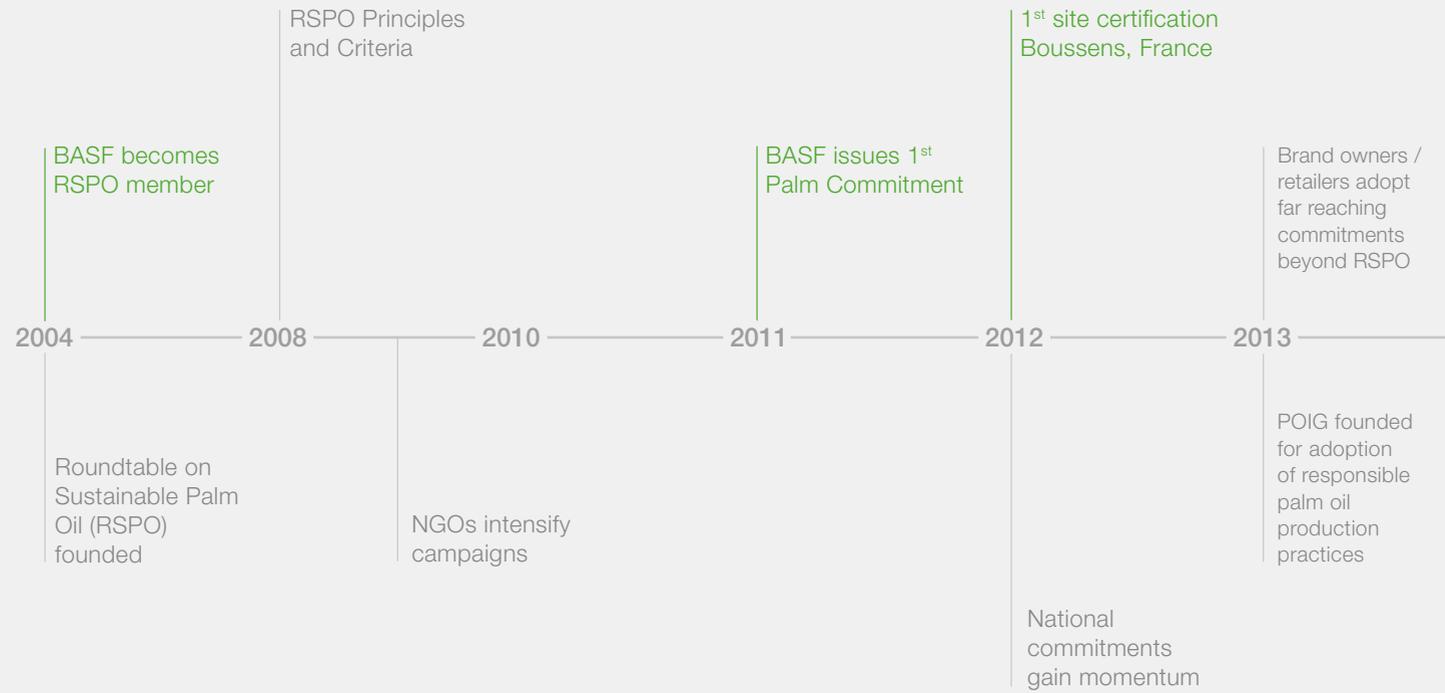
The BASF Palm Commitment was first published in 2011 and extended in 2015 including NDPE requirements by the means of a Palm Sourcing Policy for oil palm derived products that incorporates forest and peat conservation, as well as requirements for a social impact assessment and human and labor rights. We have committed ourselves to foster sustainable palm by procuring all oils only from RSPO physically certified sources by 2020 and expanding our oil commitments to significant intermediates based on palm and palm kernel oil by 2025.

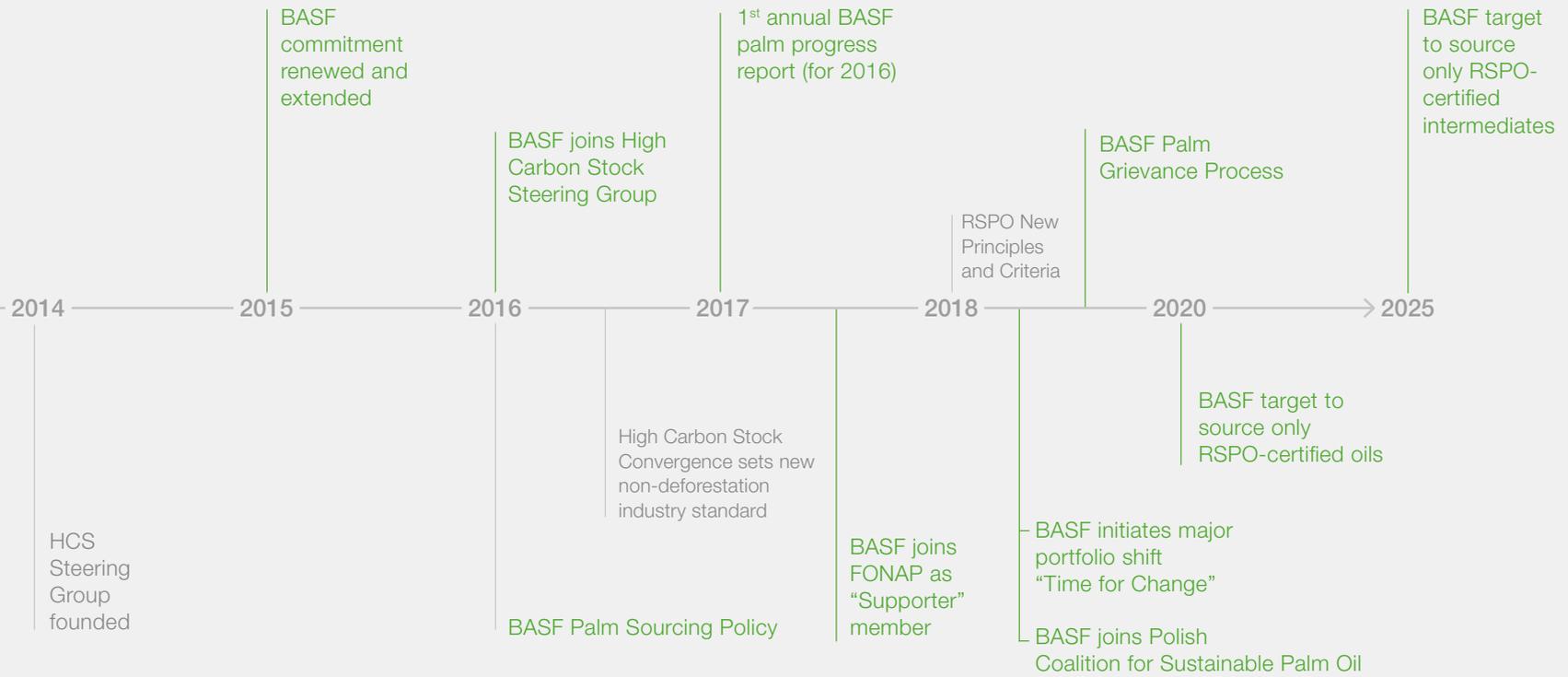
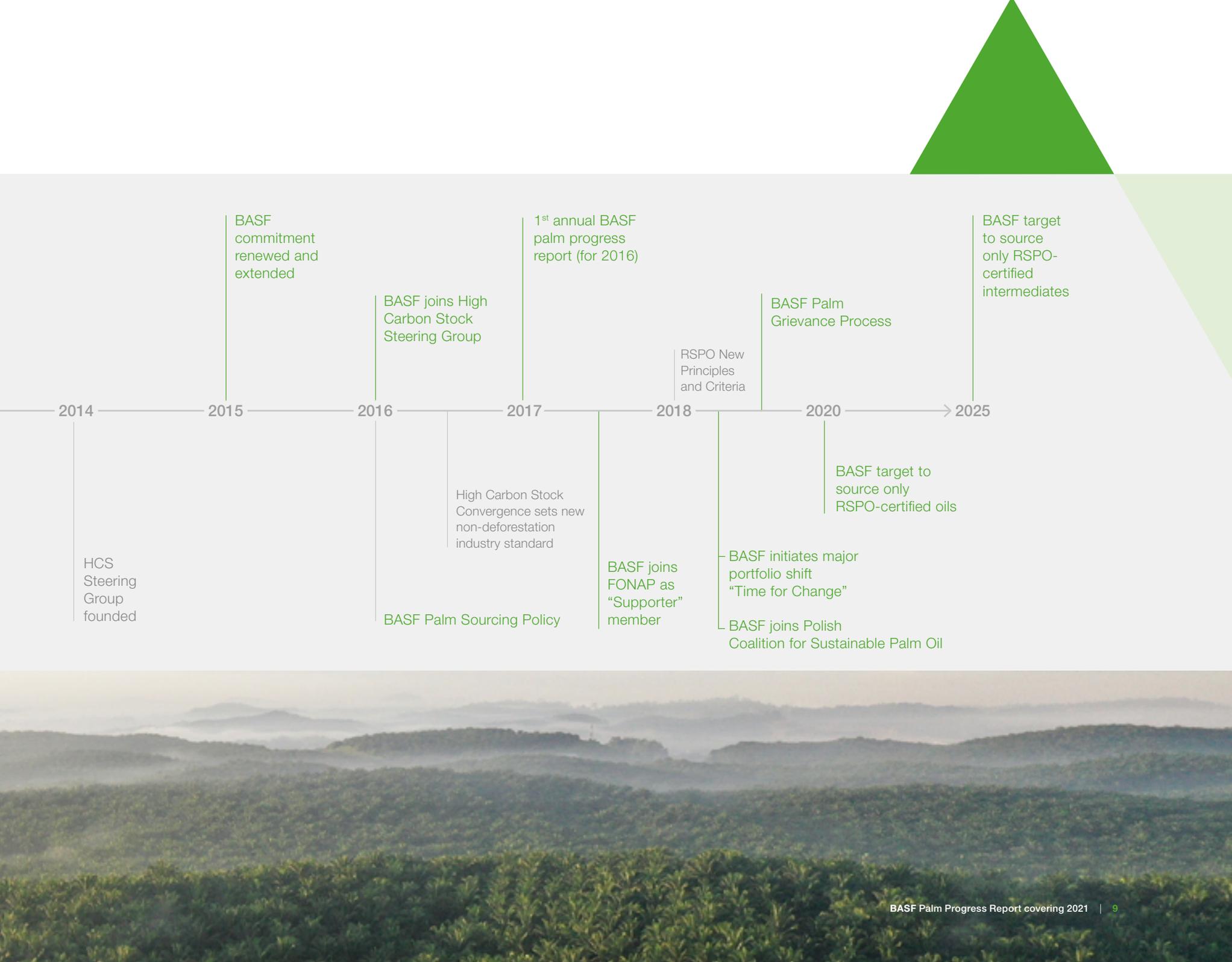
As promised, BASF achieved its commitment to procure palm (kernel) oils exclusively from sources certified by the RSPO by 2020. Additionally, BASF embedded its Palm Commitment into an overarching BASF Group Position on Forest Protection. The scope encompasses oils and fats, grains, sugar and wood of our 3rd Party supply, our own operations, as well as our products. As a member, BASF is also fully committed to the High Carbon Stock Approach (HCSA) initiative which drives integrated land use planning for oil palm development.

In order to support our BASF NDPE commitment, we have developed an agile, responsive and insightful palm grievance procedure that covers direct and 3rd party suppliers. The process handles grievances related to BASF's palm oil supply chain, including suspension if needed. We respect the grievance procedure of the RSPO. Actions and decision on raised grievances made by the RSPO are taken into consideration. The BASF grievance procedure is published on BASF Palm Dialog Webpage.

For our efforts to halt deforestation caused by palm oil production, BASF was awarded an A- rating by CDP (Carbon Disclosure Project). CDP is a non-for-profit charity that runs the global disclosure system for investors, companies, cities, states and regions to manage their environmental impacts.

Timeline







Our Collaborations

Sustainability Rankings & Ratings

We engage in sustainability networks to better understand trends in society as the drivers of our business, to help shape measurement and performance standards, and to partner for joint contributions to Sustainable Development. Examples are:



RATINGS





„Collaboration and dialog
along the value chain
is key for pursuing our
ambitious goals.“

Our Collaborations

Responsible Partnering

As a strategic supplier and a connecting link between raw material producers and manufacturers, we want to make a difference in the palm industry. Collaboration and dialog along the value chain is key for pursuing our ambitious goals on our journey towards responsible sourcing of palm oil.

BASF became a member of the RSPO in 2004. Since then, we have actively participated in consultations within the organization, most notably in the subgroup oleochemicals and derivatives under the RSPO working group Trade & Traceability.

In order to leverage industry activities to stop deforestation, we became a member of the High Carbon Stock (HCS) Steering Group in 2016 and have since then integrated the criteria of the HCSA (HCSA) into our Palm Sourcing Policy. BASF stepped up its commitment to certified sustainable oil palm products in the German, Austrian and Swiss markets by joining the Forum for Sustainable Palm Oil (FONAP) in 2017 as a manufacturer of oleo-derivatives (category “Supporter”).

In 2019, BASF signed together with other eleven founding members the Declaration of ‘Polish Coalition for Sustainable Palm Oil – PKZOP (Polskiej Koalicji ds. Zrównoważonego Oleju Palmowego)’. The PKZOP is an independent coalition and aimed at achieving 100 percent sustainable palm oil in Poland by 2023.



„No sustainability policy can be effective without considering smallholders as a crucial part of the value chain. “



Our Collaborations

Smallholder Inclusion

In Indonesia and Malaysia, small holder farmers account for 40 percent of the total area of planted oil palms and as much as 33 percent of the output. This means no sustainability policy can be effective without considering smallholders as a crucial part of the value chain. Sustainability certification, such as the RSPO, can be costly and difficult to achieve for smallholders. However, the certification is in high demand and can provide valuable premiums to the smallholders.

In 2018, BASF and The Estée Lauder Companies partnered with the civil society organization Solidaridad Network to promote sustainable oil palm production in the district of Waykanan, Lampung, Indonesia. Despite the economic benefits generated by the cultivation of oil palm, farmers still face various constraints in producing high palm oil yields and high quality Fresh Fruit Bunches (FFBs) in a sustainable manner due to lack of knowledge on sustainable agricultural practices. The projects offers continuous education and technical support on implementing and maintaining sustainable palm oil practices. 1,000 independent smallholder farmers are supported to improve their livelihood and their sustainable production of palm and palm kernel oil. The project's target is at least one-third of the supported smallholder farmers become certified according to the Smallholder Standard of RSPO at the end of three years. The project partners are collaborating with the Indonesian government to foster a sustainable palm oil production supply chain in Lampung free from deforestation and competitive in the global market, while increasing the social and economic benefits for farmers.



Our Progress

Broad Range of Sustainable Ingredients

BASF is one of the leading global suppliers for personal care, home care, industrial & institutional cleaning, and technical applications as well as for food performance and health ingredients. A significant share of our products is based on renewable raw materials, of which a substantial ratio is oil palm-based. We are one of the major users of palm kernel oil and its derivatives and to a lesser extent palm oil. We process those products into ingredients for the above-mentioned industries.

We offer a broad range of Mass Balance certified sustainable products that cover all major Personal Care functions: from consistency factors (Cutina[®], Lanette[®]), emollients (Cetiol[®]), emulsifiers (Eumulgin[®]), emulsion bases (Emulgade[®]), surfactants (Plantacare[®], Dehyton[®], Sulfopon[®] and Texapon[®]) and thickeners (Comperlan[®]), as well as all the way to the Home Care and Industrial Formulators industries with main surfactants for detergents and cleaners industry as well as industrial formulators (Dehydol[®], Glucopon[®], Lutensol[®], Dehypon[®], Disponil[®], Agnique[®]).



Our Progress

Customer Industries

Care Chemicals

We offer a broad range of Mass Balance certified sustainable products that cover all major Personal Care functions: from consistency factors (Cutina[®], Lanette[®]), emollients (Cetiol[®]), emulsifiers (Eumulgin[®]), emulsion bases (Emulgade[®]), surfactants (Plantacare[®], Dehyton[®], Sulfopon[®] and Texapon[®]) and thickeners (Comperlan[®]) as well as all the way to the main surfactants for detergents and cleaners industry as well as industrial formulators (Dehydol[®], Glucocon[®], Lutensol[®], Dehypon[®], Disponil[®], Agnique[®]).

Our ingredients are mainly based on palm kernel oil. The C-chain distribution for palm kernel oil includes a high percentage of C12-14 chains. This composition is ideal for ingredients used in personal and home care applications. In contrast to the food industry – where the oil is basically kept intact – the oleochemicals industry converts the oil using chemical processes, such as fractionating it into different C-chain lengths and adding different functional groups, until the final function is obtained – usually a surfactant or an emollient. This derivatization includes at least five to ten individual technological steps before the final ingredient is achieved. This is one reason why the RSPO Mass Balance standard for oleo-derivatives used in personal and home care applications is the most common certification program right now. The RSPO Segregated standard

would require keeping all those steps separate, resulting in a huge amount of complexity and subsequent costs.

Human Nutrition

A key renewable raw material for numerous pharmaceutical excipients is palm kernel oil (PKO) and its respective derivatives. We are the first major supplier to offer 100% RSPO certified lipid-based excipients for the pharmaceutical industry. We offer the widest range of IPEC-GMP lipid-based excipients, suitable for topical and oral drug formulations. Our lipid-based RSPO-certified products include: a broad portfolio of emulsifiers, wetting agents, solubilizers, and cream bases that are used in a variety of oral and topical pharmaceutical applications (Kolliphor[®]); multi-functional solvents and emollients that enhance solubilization and skin penetration of some pharmaceuticals while offering a relatively benign mildness profile (Kollcream[®]); an extensive portfolio of structuring agents and lubricants that provide formulation stability, used in the development of numerous oral and topical dosage forms (Kolliwax[®]); and a product line comprised of versatile solvents functioning as solubilizers, plasticizers, lubricants, emollients, and skin penetration enhancers, ideal for both oral and topical applications (Kollisolv[®]).



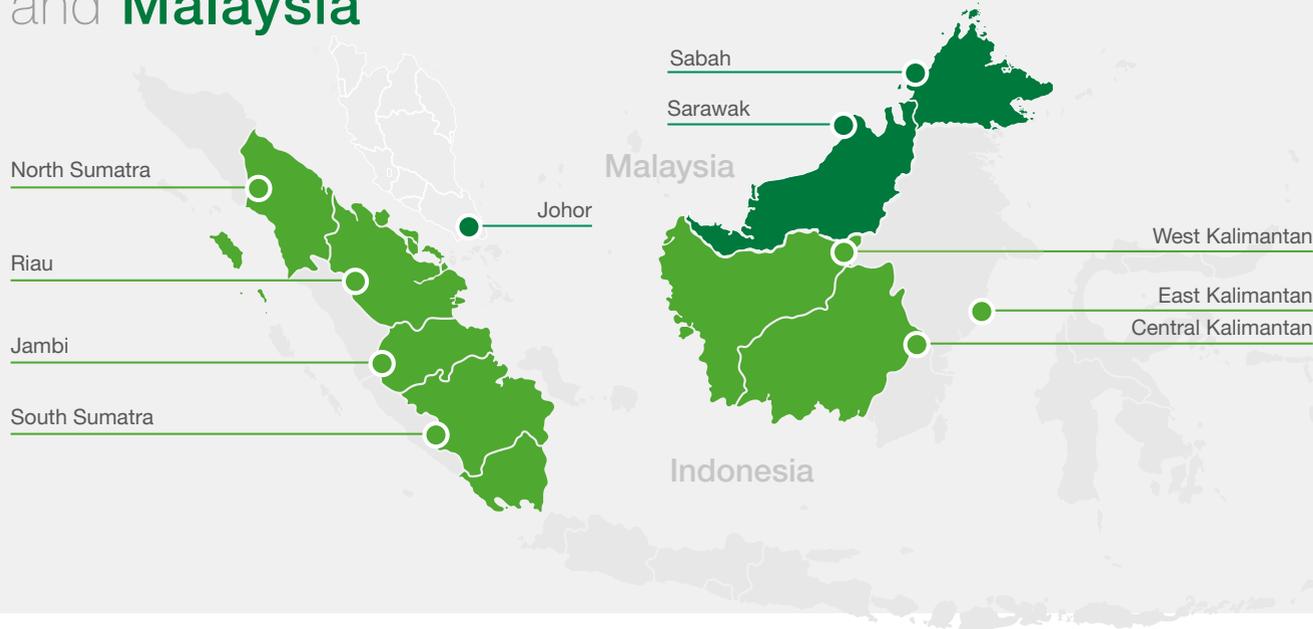
Our Collaborations

Traceability

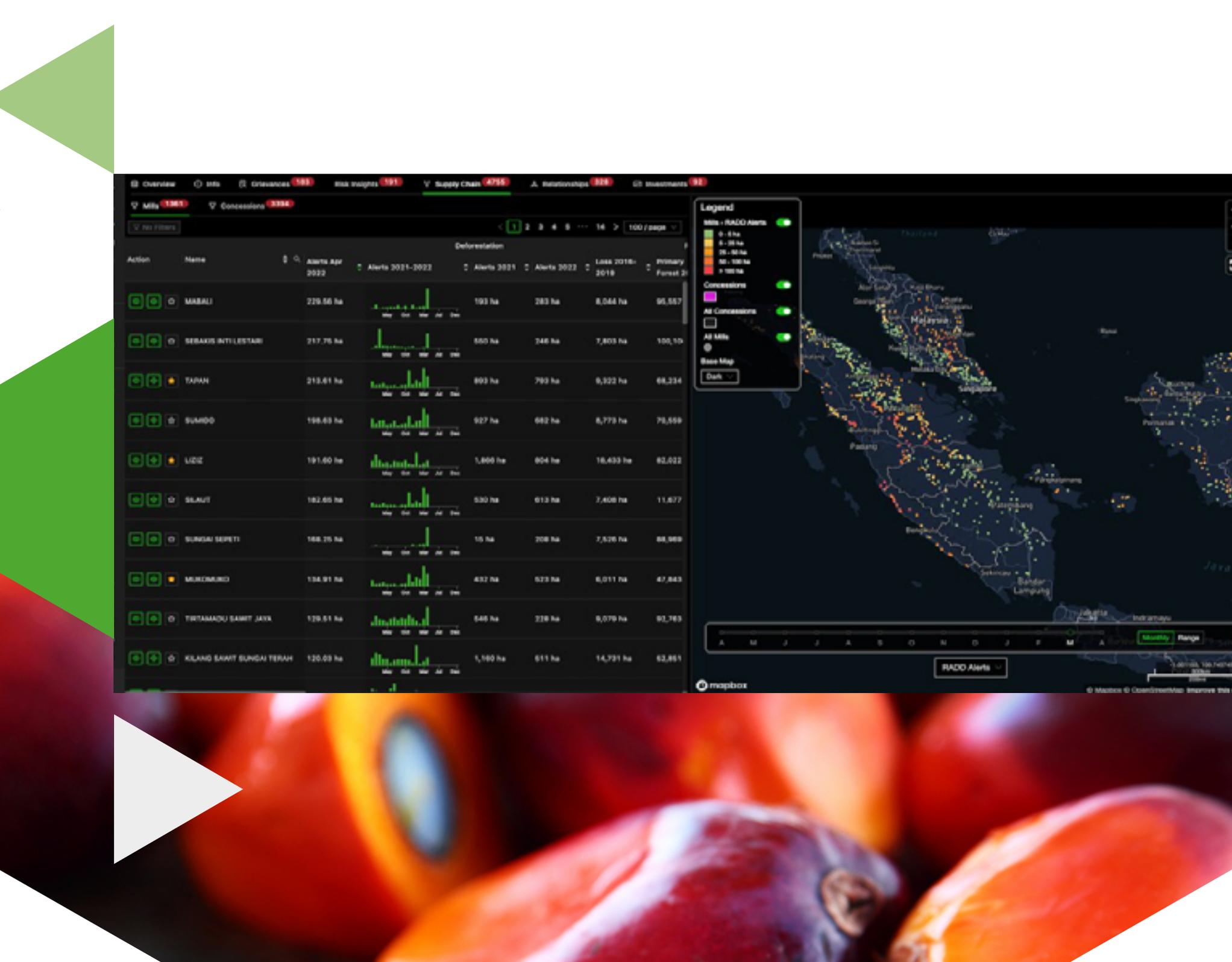
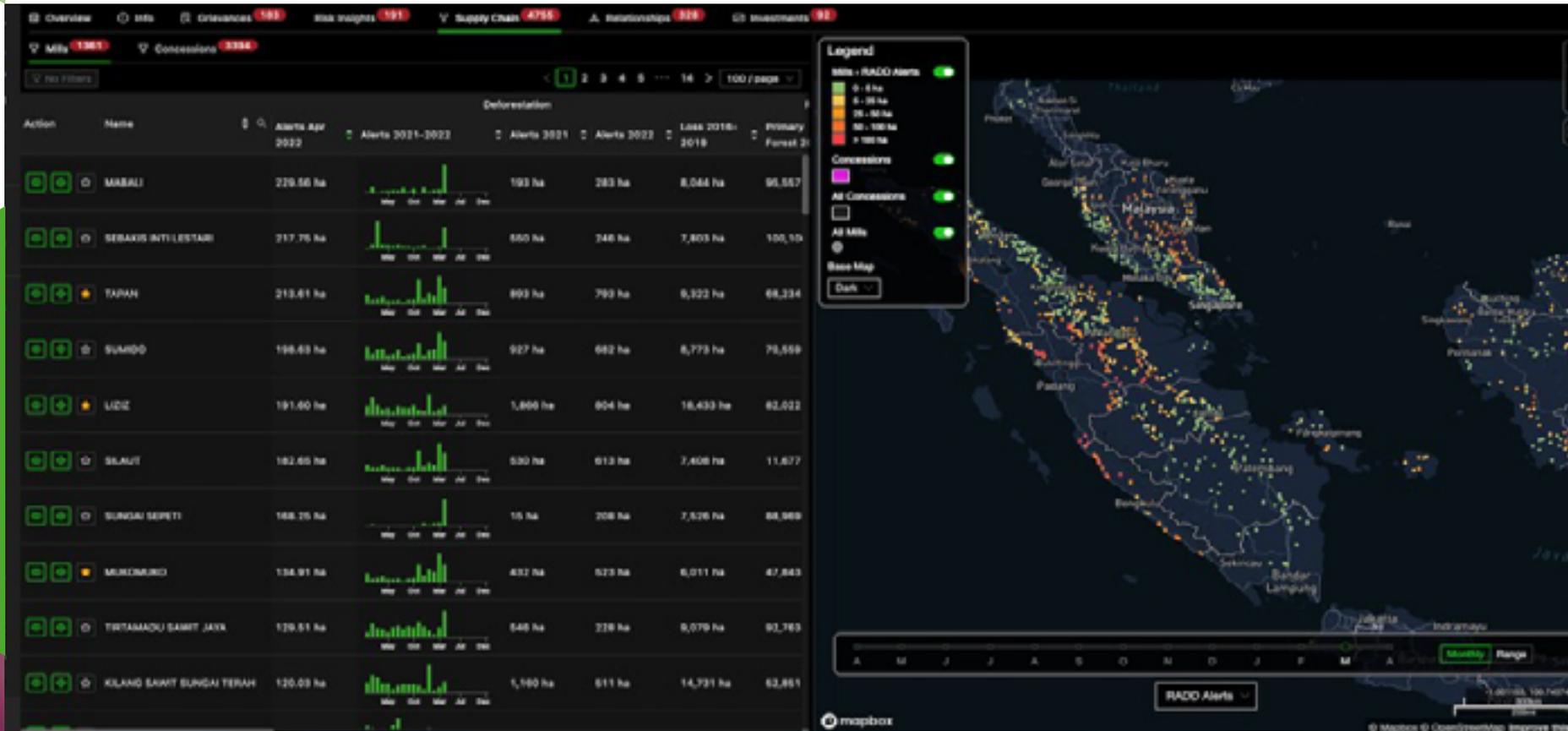
The physical market transformation based on the RSPO-certification is an important element on our journey toward sustainable palm. In addition, traceability is the tool which helps companies along the palm oil supply chain to identify the origin of the oil sourced. Knowing the potential mills and their locations makes it possible to identify and monitor if sustainable practices are adopted at the origination.

In 2021, we were able to achieve traceability for 96 percent of our global palm footprint of 462,894 metric tons back to the oil mill level. We source 72.9 percent of our traceable raw material from top 10 provinces in Indonesia and Malaysia and are connected to 31 provinces in the two countries in total matching 90.9 percent of our traceable raw material supply. Beyond this, we are in the process of risk assessment of our sourcing based on environmental and social criteria. We have once again achieved full traceability for certified sustainable palm kernel oil originating from 415 oil mills.

BASF is connected to **37** provinces in **Indonesia** and **Malaysia**



Top 10 provinces we source from



Satellite Monitoring

The Challenge

Like many derivative manufacturers, BASF sources from hundreds of palm mills (~1300) scattered along the equator. These mills source from thousands of plantations, ranging from large industrial concessions to smallholder farms. Interspersed between the plantations lie blocks of remaining rainforest, some of which is home to indigenous peoples and habitat for critically endangered species such as Sumatran tigers and orangutans. The general challenge for the industry and for BASF is to monitor upstream suppliers and ensure that these remaining forests are not being cleared for oil new oil palm plantations – which would be a clear breach with BASF NDPE policy.

The Approach – Palmoil.io

Since 2021, BASF has signed up the Palmoil.io web platform (<https://palmoil.io>) to track deforestation from plantations and link it to its suppliers. Palmoil.io brings together the critical ingredients for effective forest monitoring - forest alerts, high resolution satellite scenes, supplier relationships, grievance information along with an estimated traceability to plantation approach.

How it works

Palmoil.io organizes BASF's palm mills into a list and every month uses RADD forest alerts to monitor deforestation in proximity to the mill and within nearby concessions. Mills are sorted by various measures such as total hectares of alerts as well as historical deforestation and remaining forest. This helps BASF analyze not only which mills to prioritize but which concessions that they likely source from. Recent satellite imagery is also available to verify alerts and determine whether deforestation was likely caused for palm planting.

To provide further context, Palmoil.io links mills and concessions to grievances lodged by watchdogs against major palm oil traders. Grievances cover not only alleged deforestation cases but also human rights violations, land and labor conflicts, and pollution. Palmoil.io monitors the grievance trackers of all major palm traders, documenting each case and filing them with each supplier. As BASF we review whether suppliers have been suspended, initiated forest clearing moratoriums, or published an NDPE policy.

Structural reports

Palmoil.io also produces monthly Risk Insight reports. The reports use high resolution imagery to document and map new deforestation. The report shows before and after satellite scenes of the loss, traceability from plantation to mill, and likely transport routes. It also determines whether the deforestation cause was smallholders or industrial clearance. Insights are published in a concise report that BASF sends to suppliers for further information and potential action plans to stop deforestation and to keep compliance with BASF NDPE policy.

Conclusion

Deforestation is an industry wide challenge requiring an industry wide effort for stopping it. As BASF we believe in the obligation to contribute with our efforts for more sustainable palm, and we will continue to utilize tools and approaches helping us to be successful in this endeavor.



„We acknowledge our responsibility as an actor in various value chains and therefore, strives to end deforestation within those. “

Forest Protection Policy: Introduced in June 2020

We recognize the importance of protecting the world's forests for the wellbeing of the environment and society



Collaboration is needed to raise and increase awareness, drive the necessary market transformation and achieve impact on the ground



A key challenge

is to enable the sustainable intensification of agriculture by increasing productivity on existing land, thus decreasing the pressure on forests



Palm (kernel) oil, soya oil and its derivatives, and lignosulphonates extracted from wood are commodities with high deforestation risks



We will drive the compliance to our ambition and principles in all our renewable value chains





Outlook

Sustainable Coconut / Sustainable Castor

Although Indonesia reduced primary forest loss for the fifth year, the global deforestation and forest degradation are occurring at an alarming rate, aggregating climate change and loss of biodiversity. In response to this these developments numerous initiatives have been launched like the EU Commission's regulation draft concerning certain commodities and products associated with deforestation and forest degradation, the Forest Act introduced by the US Congress and the Environmental Act of the UK Government. The aim of all these initiatives is to minimize consumption of products coming from supply chains associated with deforestation or forest degradation. The upcoming regulations are expected to have an a high influence on the trade of oil palm and its derivatives and can have the ability to create a level playing field by holding all companies to the same standard, but they can also bear the risk of supply chain disruptions. BASF actively supports ramping up sustainability measures to protect against deforestation and forest degradation.

We employ renewable raw materials, mainly based on vegetable oils, fats, grains, sugar and wood. In 2021, we purchased around 1.3 million metric tons of renewable raw materials. We want to minimize raw material-specific risks and increase sustainability in our supply chains with measures, projects and targeted involvement in initiatives. Our activities here concentrate on value chains that are relevant quantitatively or that do not yet have certification standard. Together with palm kernel oil, coconut oil is the only source of 12-14 C-chains and thus the basis for BASF's oleochemicals. Therefore, we joined a development partnership between BASF, Cargill, The Procter & Gamble Company and the German government agency Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH with the strong support of Rainforest Alliance and the Phillippine Coconut Authority. Objective of the project was to increase the incomes and economic self-sufficiency of smallholder coconut farmers in the Philippines and Indonesia through support of sustainable certified coconut oil supply chain. Between November 2015 and October 2018 more than 4,100 coconut farmers have been trained in Good Agricultural and processing Practices (GAP) as well as Farm Management practices. About 1,600 farmers received additional training and have been certified against the Rainforest Alliance Sustainable Agriculture Standard. Farmers who were trained and certified, have on average a 47% higher income than farmers who didn't participate in the program. To establish another renewable supply chain for market transformation towards certified sustainable sourced oleochemicals, BASF has certified its production site in Cassina Rizzard according to the Rainforest Alliance Mass Balance supply chain standard for coconut oil.

Also important for BASF, albeit at a much smaller scale, is castor oil. We use castor oil to manufacture products such as plastics and ingredients for paints and coatings, as well as products for the cosmetics and pharmaceutical industries. With the aim of establishing a certified sustainable supply chain for castor oil, we launched the Sustainable Castor Initiative – Pragati in 2016 together with the companies Arkema and Jayant Agro and the NGO Solidaridad. The initiative is intended to improve the economic situation of castor bean farmers in India and, at the same time, raise awareness of sustainable farming methods. As part of Pragati, smallholder farmers receive training on topics such as cultivation methods, efficient water use, health and the safe use of crop protection products based on a specially developed sustainability code, SuCCESS. Since the project was initiated, more than 5,800 smallholders and over 13,300 hectares of land have been certified for sustainable castor cultivation. Yields from this land were 35% higher than average amounts for the region published by the local government for the 2020/2021 harvest cycle. In addition to SuCCESS, the Sustainable Castor Association (SCA), which was launched in 2019 by the founders of the Pragati initiative, has also developed a sustainability code for the wider supply chain. This will allow castor beans obtained from the program to be further processed into certified castor oil and derivatives and to be introduced into the downstream supply chain. We were able to source the first certified sustainable castor oil from the program in 2021 following the successful audit of our supply chain by an independent certification body. In the coming years, we want to increase the share of this oil in our total demand.

BASF has RSPO certification of its production sites in all regions – 26 sites in 2021

North America

1. Mauldin (USA)
2. Cincinnati (USA)
3. Mexico (Mexico)
4. Hartwell (USA)
5. East Setauket (USA)

South America

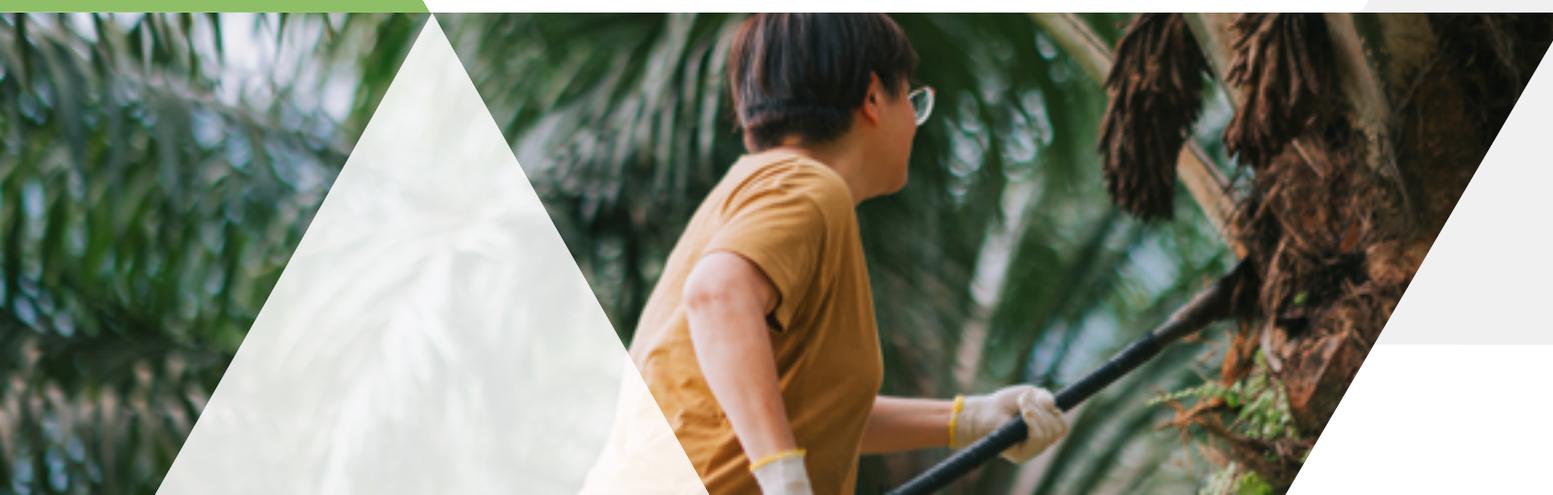
6. Jacarei (Brazil)

Europe

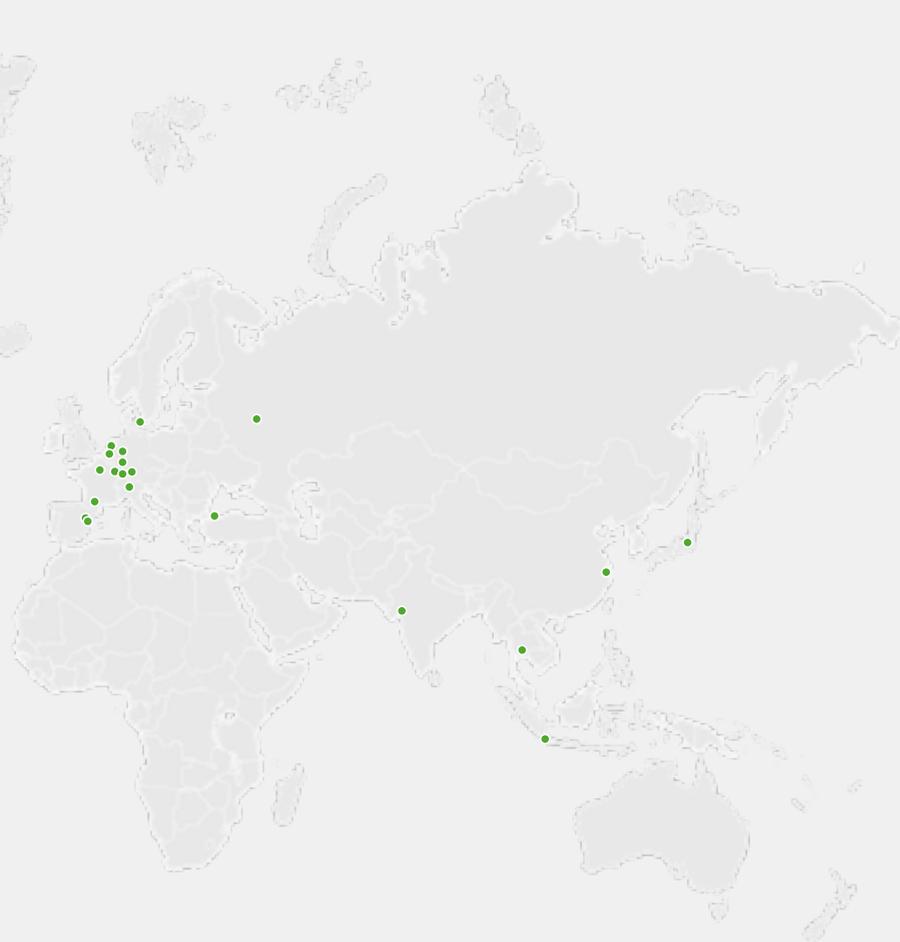
7. Antwerp (Belgium)
8. Ballerup (Denmark)
9. Boussens (France)
10. Pulnoy (France)
11. Düsseldorf (Germany)
12. Cassina Rizzardi (Italy)
13. Gebze (Turkey)
14. Grenzach (Germany)
15. Illertissen (Germany)
16. Ludwigshafen (Germany)
17. Meaux (France)
18. Moscow (Russia)
19. Castellbisbal (Spain)
20. Zona Franca (Spain)
21. Utrecht (The Netherlands)

AsiaPacific

22. Jinshan (China)
23. Kitatone (Japan)
24. Muang Chonburi (Thailand)
25. Cimanggis (Indonesia)
26. Dahej (India)



Glossary



ACOP

Annual Communication on Progress (RSPO)

CSR

Corporate Social Responsibility

CSPO

Certified Sustainable Palm Oil

CSPKO

Certified Sustainable Palm Kernel Oil

FAO

Food and Agriculture Organization of the United Nations

FFB

Fresh Fruit Bunches

FONAP

Forum Nachhaltiges Palmöl (Sustainable Palm Oil Forum)

FPIC

Free, Prior and Informed Consent

GAP

Good Agricultural Practices

GRI

Global Reporting Initiative

HCSA

High Carbon Stock Approach

HCV

High Conservation Value

NDPE

No deforestation, no peat development, and no exploitation

NGO

Non-Governmental Organization

OECD

Organization for Economic Cooperation and Development

PO

Palm Oil

PKO

Palm Kernel Oil

POIG

Palm Oil Innovation Group

RSPO

Roundtable on Sustainable Palm Oil

UN

United Nations

WHO

World Health Organization

WWF

World Wide Fund for Nature



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