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BIOBASED PRODUCTS FACTS AND FIGURES 2018



CULTIVATION
RESOURCES
PRODUCTS

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Federal Ministry
of Food
and Agriculture

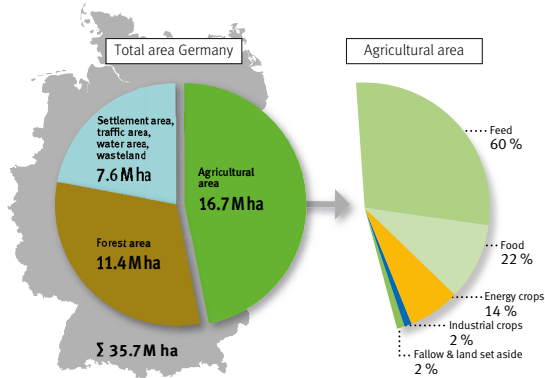


Fachagentur Nachhaltende Rohstoffe e.V.

by decision of the
German Bundestag

CULTIVATION OF RENEWABLE RESOURCES

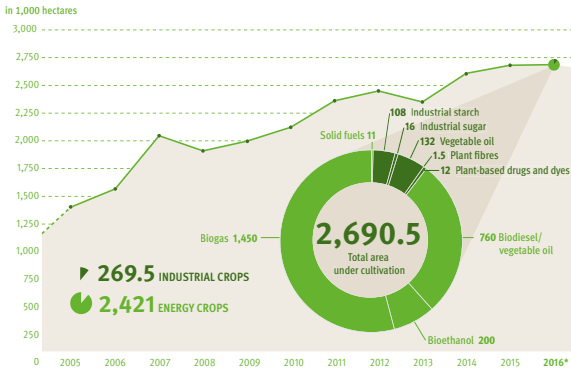
Land use in Germany



Source: FNR based on Statistisches Bundesamt, BMEL (2016)

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Cultivation of renewable resources in Germany



Source: FNR (2017)

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Cultivation of renewable resources in Germany 2014–2016 (in hectares)

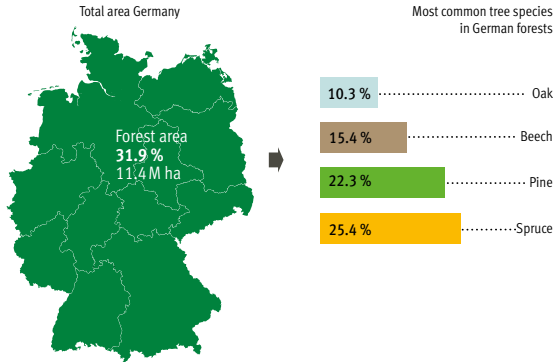
Plants	Feedstock	2014	2015*	2016**
Industrial crops	Industrial starch	106,000	108,500	108,000
	Industrial sugar	12,500	15,000	16,000
	Technical rapeseed oil	115,500	129,000	122,500
	Technical sunflower oil	6,000	6,500	6,000
	Technical linseed oil	3,500	3,500	3,500
	Plant fibres	1,000	1,500	1,500
	Plant-based drugs and dyes	12,000	12,000	12,000
	Industrial crops total		256,500	276,000
Energy crops	Rapeseed oil for biodiesel/vegetable oil	798,500	800,000	760,000
	Crops for bioethanol	188,000	200,000	184,000
	Crops for biogas	1,353,500	1,400,000	1,450,000
	Crops for solid fuels (e.g. farmed wood, miscanthus)	10,500	11,000	11,000
	Energy crops total		2,350,500	2,411,000
Total acreage of renewable resources		2,607,000	2,687,000	2,690,500

Source: FNR (2017)

* preliminary values; ** estimated values

WOOD

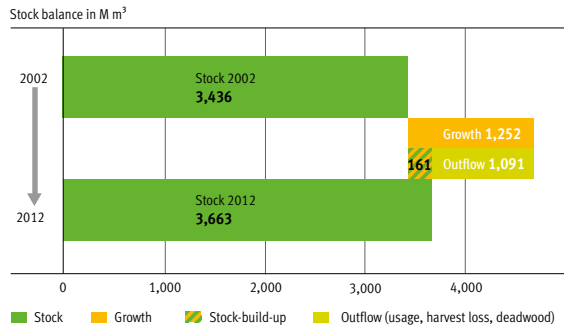
German forest in figures



Source: BMEL (2014)

© FNR 2015

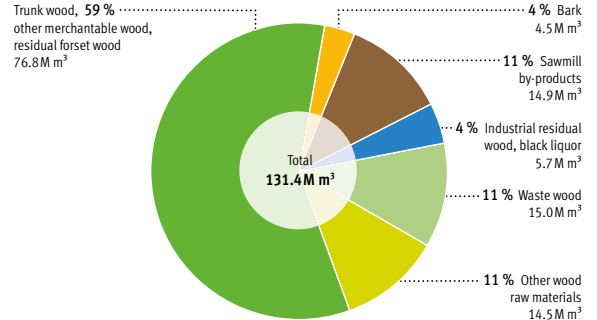
Growth of the timber stock in German forests



Source: BWI3 (2014)

© FNR 2014

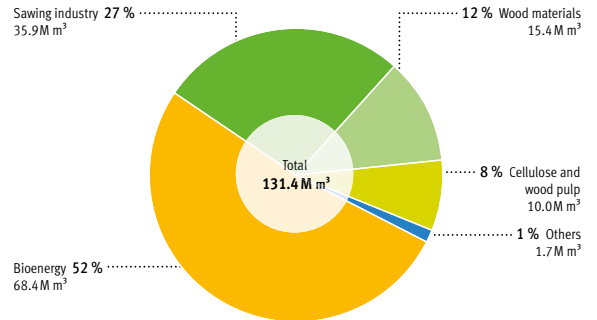
Wood raw material balance 2015



Source: Mantau/Holzrohstoffbilanz Deutschland (2017)

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Use of wood in Germany 2015

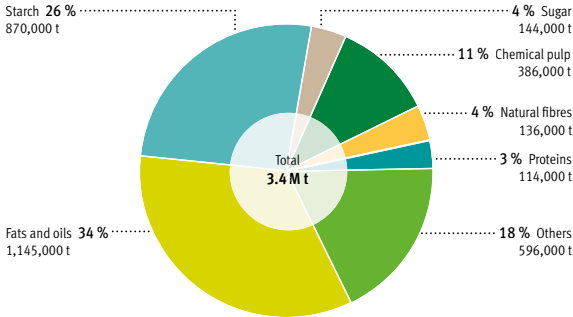


Source: Mantau/Holzrohstoffbilanz Deutschland (2017)

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RESOURCES TOTAL

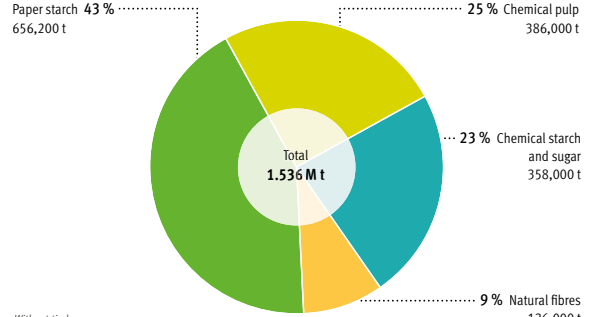
Material use of renewable resources in Germany 2015



Source: FNR, BMEL (2016)

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Material use of carbohydrates in Germany 2015

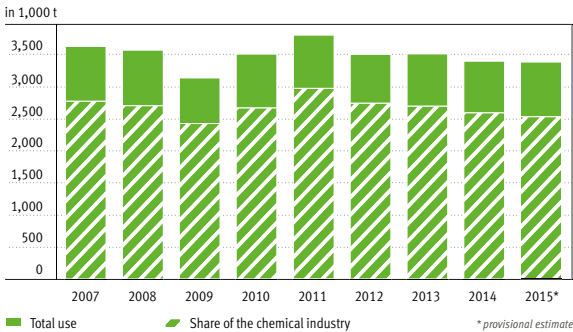


Without timber use

Source: FNR, BMEL (2016)

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Development of the material use of renewable resources in Germany

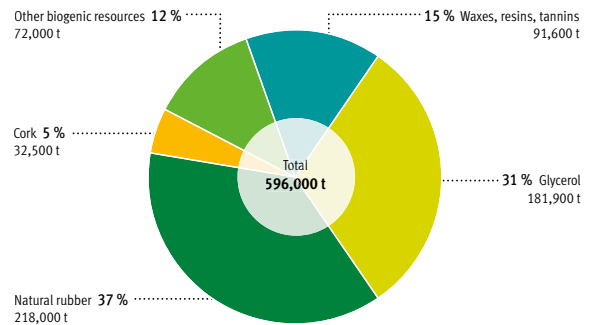


Without timber use

Source: FNR, BMEL (2016)

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Material use of other biogenic resources in Germany 2015

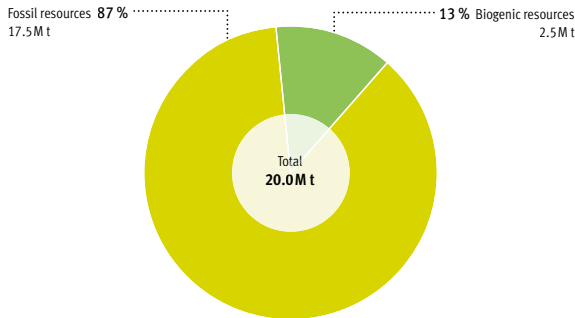


Source: FNR, BMEL (2016)

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CHEMICAL INDUSTRY

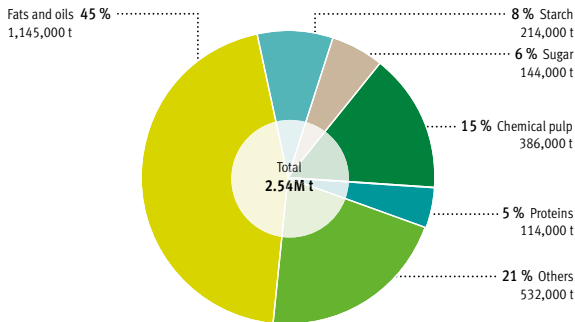
Material use of organic resources in the chemical industry in Germany 2015



Source: FNR, VCI (2016)

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Material use of renewable resources in the chemical industry in Germany 2015



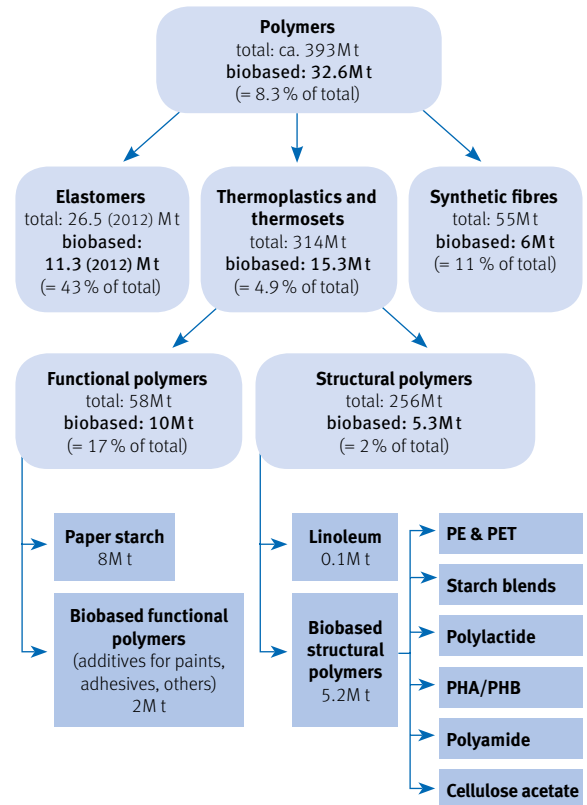
Source: FNR, BMEL (2016)

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BIOCOMPOSITES

BIOPLASTICS

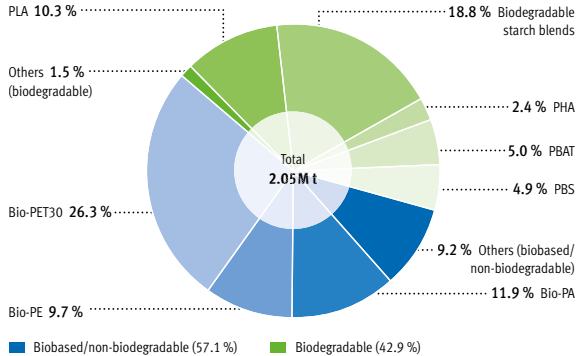
World market for polymers, quantities and biobased shares 2013



Source: nova-Institut (2017)

© FNR 2017

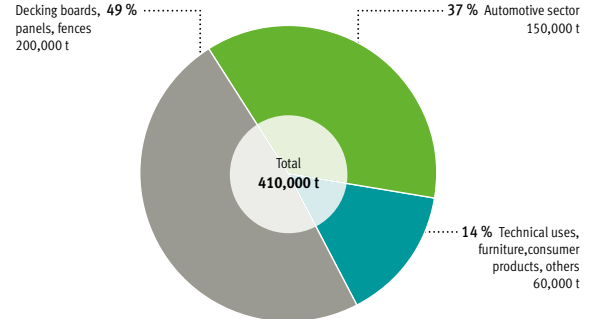
Global production capacities for bioplastics 2017



PA: Polyamide PHA: Polyhydroxylalkanoate PE: Polyethylene
 PLA: Polylactide PBS: Polybutylene succinate PET: Polyethylene terephthalate
 PBAT: Polybutylene adipate terephthalate
 Source: European Bioplastics, nova-Institut (2017) © FNR 2017

BIOCOMPOSITES

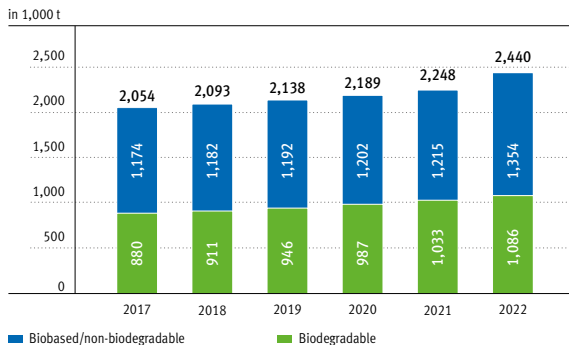
Production of biocomposites in Europe 2017



Source: nova-Institut (2017)

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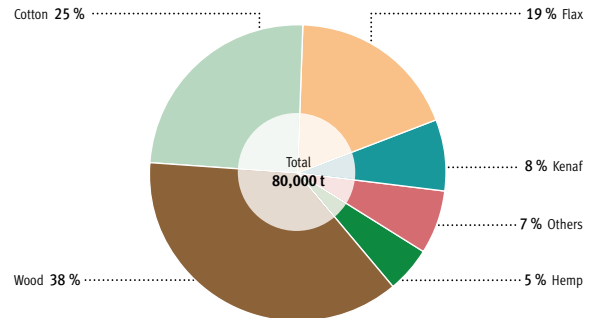
Global production capacities 2017–2022



Source: European Bioplastics, nova-Institut (2017)

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Use of wood and natural fibres for composites in the European automotive industry 2012

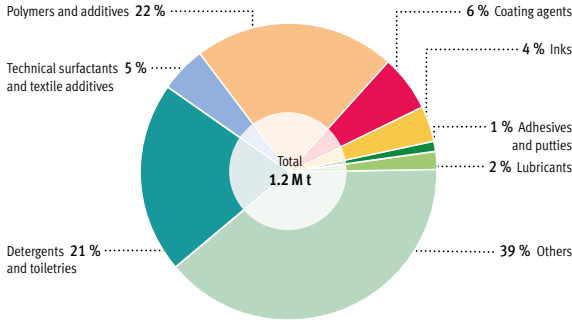


Source: Carus et al., WPC/NFK Market study 2014-10, www.bio-based.eu/markets (2014)

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OLEOCHEMESTY

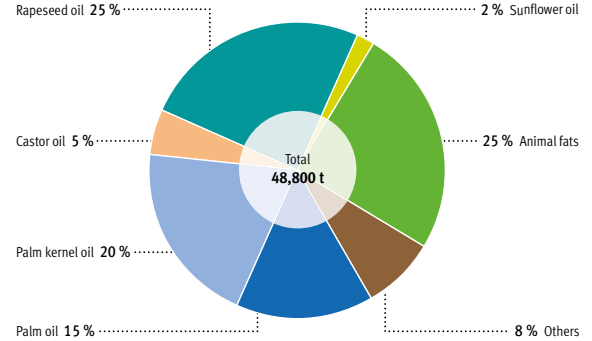
Areas of industrial applications for vegetable oils in Germany 2011



Source: MED (2014)

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Sources of raw materials for biolubricants in Germany 2016

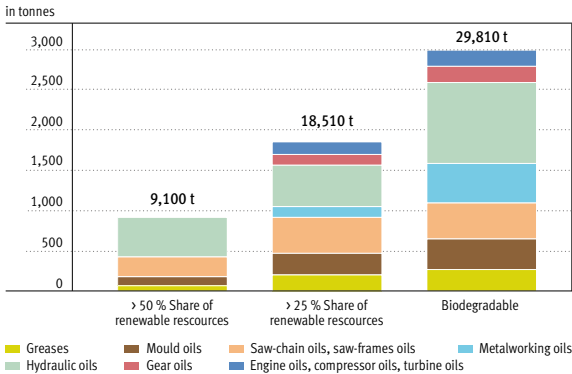


Source: T+I Consulting (2017)

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BIOLUBRICANTS

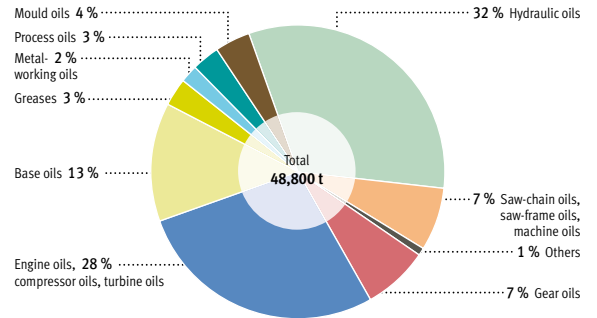
Total market of biolubricants in Germany 2011



Source: MED (2014)

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Total amount of vegetable oils and fats in the lubricant market in Germany 2016

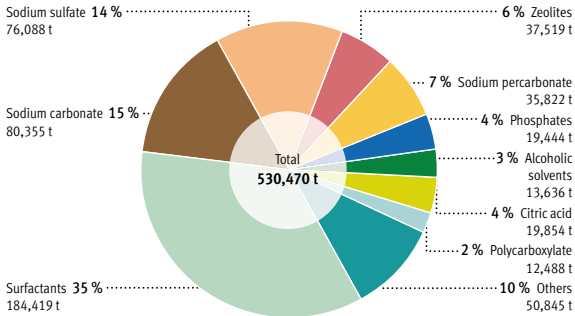


Source: T+I Consulting (2017)

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SURFACTANTS

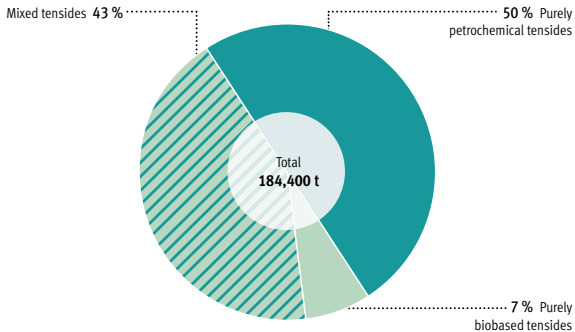
Ingredients in detergents and cosmetic care products in private households in Germany 2015



Source: IKW – Industrieverband Körperpflege- und Waschmittel (2017)

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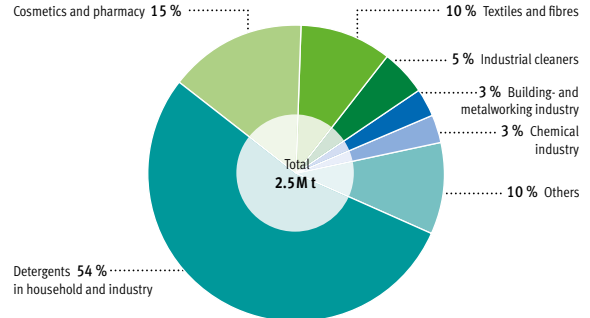
Share of the different surfactant groups in detergents and cosmetic care products in Germany 2015



Source: T+I Consulting (2017)

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Utilisation of surfactants in Western Europe 2014

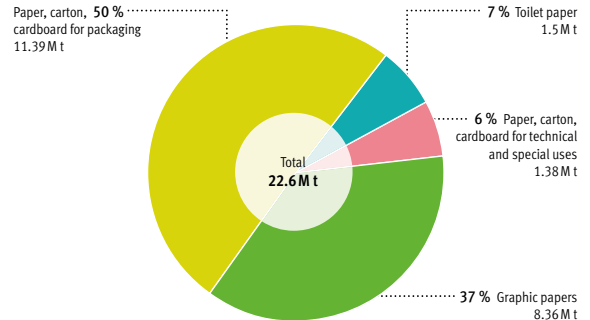


Source: TEGEMA: Die fließigen Verbindungen – Eine kurze Einführung in die Welt der Tenside (2014)

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PAPER AND CARDBOARD

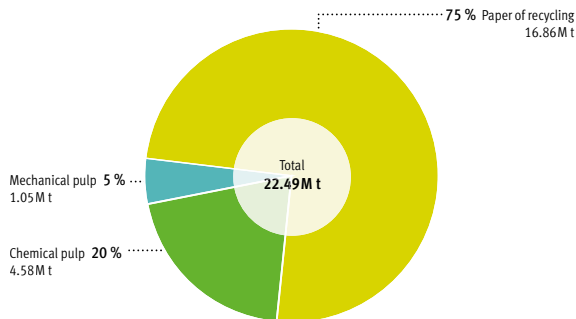
Production of paper, carton and cardboard in Germany 2016



Source: Verband Deutscher Papierfabriken e. V. (FNR) (2017)

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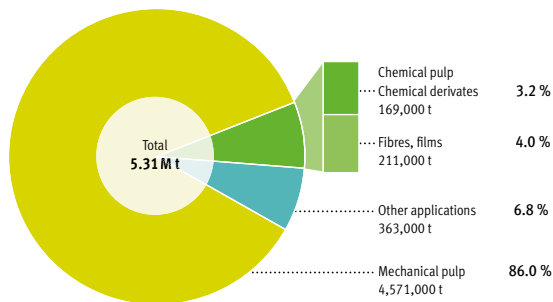
Consumption of cellulose and fibres for paper production in Germany 2016



Source: Verband Deutscher Papierfabriken e. V. (2017)

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Consumption of cellulose in Germany 2016



Source: T+I Consulting (2017)

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WOOD PRODUCTS AND BUILDING MATERIALS

Production of saw wood in Germany

	2009	2010	2011	2012	2013	2014	2015	2016
Softwood timber	19.7	23.1	23.7	22.0	20.4	20.8	20.4	21.1
Hardwood timber	1.1	1.1	1.0	1.0	1.0	1.0	1.1	1.1
Total	20.8	24.2	24.7	23.0	21.4	21.8	21.5	22.2

Source: Statistisches Bundesamt, BMEL (2017)

Data in million cubic meters

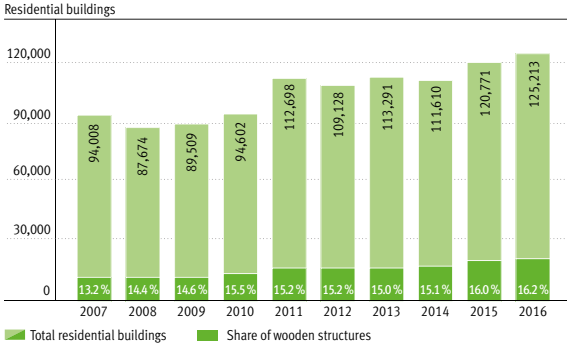
Production of wood materials in Germany

	2009	2010	2011	2012	2013	2014	2015	2016
Chipboards	9.3	9.4	8.5	8.2	8.2	8.1	8.0	8.3
Fibreboards	3.8	2.9	3.0	3.5	3.6	3.6	3.7	3.8
Plywood	0.2	0.1	0.1	0.1	0.1	0.4	0.5	0.5
Total	13.3	12.4	11.6	11.8	11.9	12.1	12.2	12.6

Source: Statistisches Bundesamt, BMEL (2017)

Data in million cubic meters

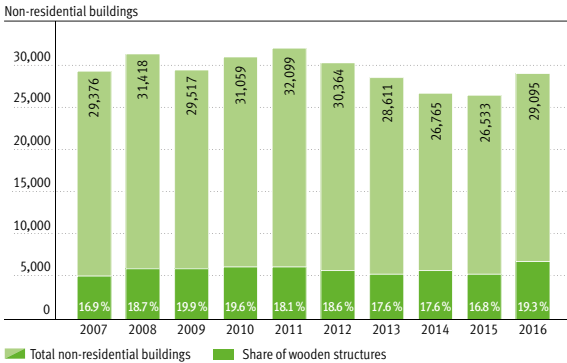
Share of wooden structures on the overall approved residential buildings



Source: Statistisches Bundesamt (2017)

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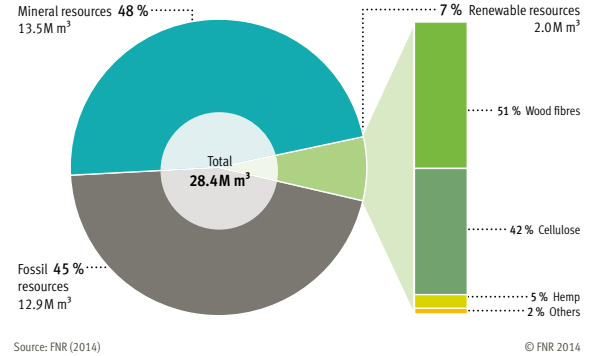
Share of wooden structures on the overall approved non-residential buildings



Source: Statistisches Bundesamt (2017)

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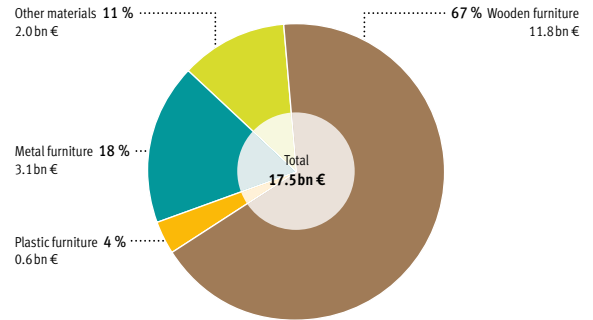
Total market for insulating materials in Germany 2011



Source: FNR (2014)

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Furniture market in Germany 2016

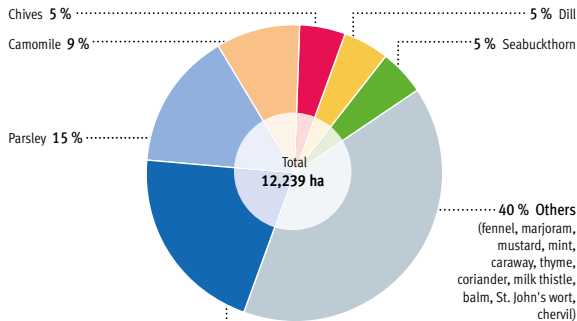


Source: Möbelindustrie/Verbände der Deutschen Holz-, Möbel- und Fertigungindustrie

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PLANT-BASED DRUGS

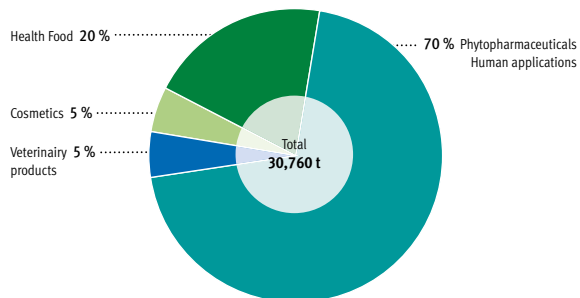
Cultivation of medical plants, spice plants and aromatic plants in Germany 2011



Source: MEO (2014)

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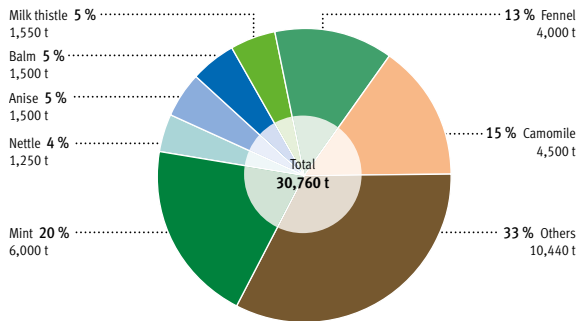
Distribution of demand of plant-based drugs in Germany 2011



Source: MEO (2014)

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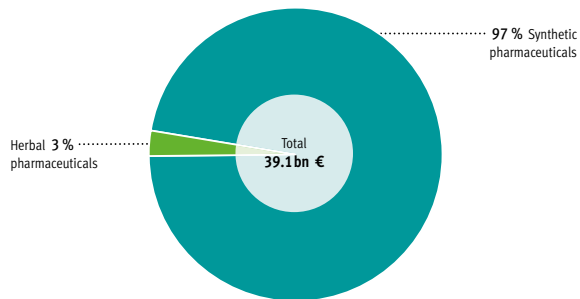
Demand for plant-based drugs in Germany 2011



Source: MEO (2014)

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Turnover of human medicines in pharmacies 2011



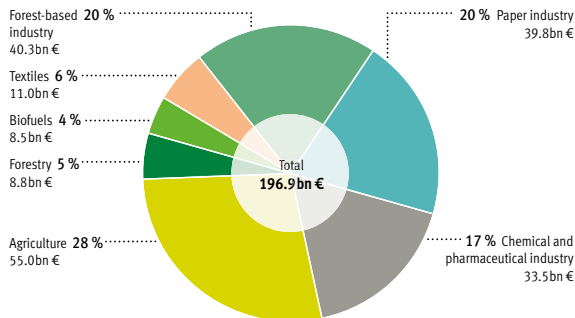
Turnover of phytopharmaceuticals in pharmacies: 1.1 bn €

Source: MEO (2014)

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BIOECONOMY

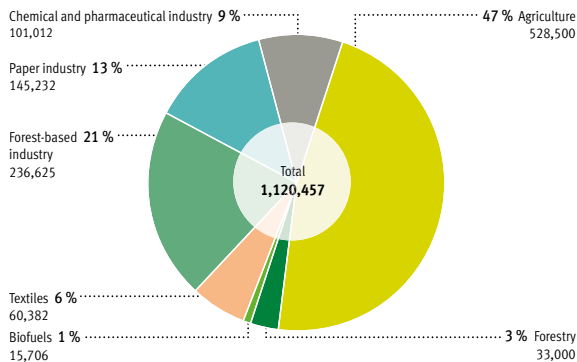
Turnover in the biobased economy in Germany 2014



Source: datam.jrc.ec.europa.eu/datam/mashup/BIOECONOMICS/index.html called 20/12/2017

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Employees in the biobased economy in Germany 2014



Source: datam.jrc.ec.europa.eu/datam/mashup/BIOECONOMICS/index.html called 20/12/2017

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Further information

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Market Analysis of Renewable Resources:

Abstract: www.fnr.de/marktanalyse

Long version: www.fnr.de/marktanalyse/marktanalyse.pdf

National Policy Strategy on Bioeconomy:

mediathek.fnr.de/nationale-politikstrategie-biookonomie.html

Facts and figures on bioenergy:

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IMPRINT

Published by

Fachagentur Nachhaltende Rohstoffe e. V. (FNR)
 Agency for Renewable Resources
international.fnr.de

With support from the Federal Ministry of Food and Agriculture, based on a decision of the Parliament of the Federal Republic of Germany

Pictures

Getty Images/MIXA, Fotolia/Reamonn, FNR/M. Nast, FNR/H. Müller

Design/Implementation

www.tangram.de, Rostock

Printed by

www.druckerei-weidner.de, Rostock

Printed on 100 % recycling paper using vegetable oil-based colours

Order no. 882

FNR 2018

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