

# From waste to product – The real green solutions

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Natural Resources, Volcani, ARO



Date oil regular maintenance produces tons of plant waste



## Date maintenance

The date maintenance produces agricultural **WASTE** =

Leads to massive **air pollution** resulting from waste burning; elevating carbon foot-print and global warming



# Fast regeneration of offshoots after cutting-off

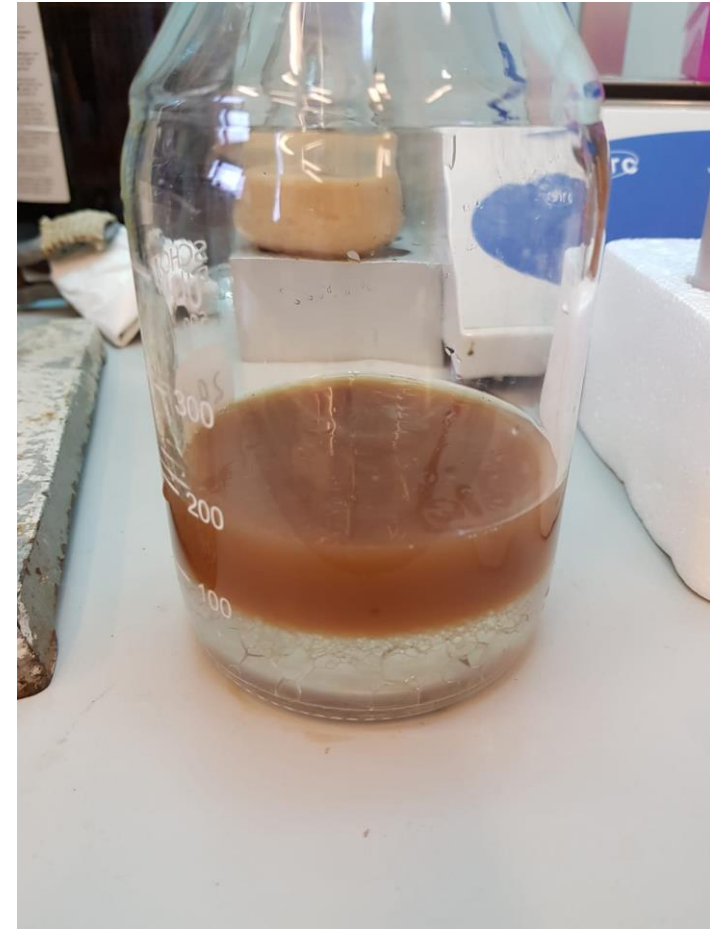


# Lagmi/ Bernama juice





Growing point



# Date oil free fatty acid composition



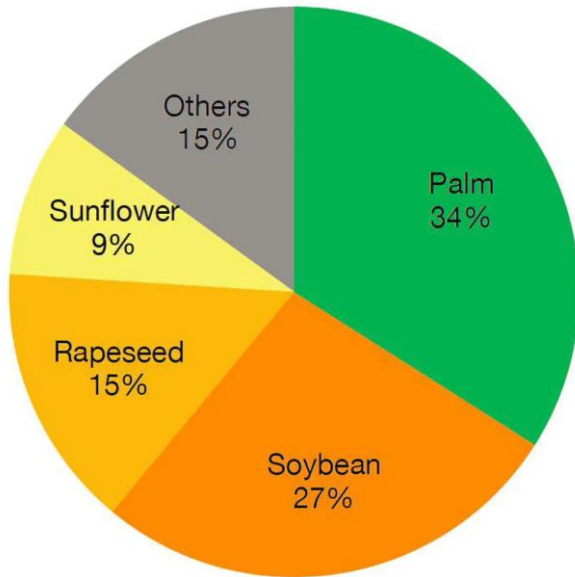
Oil name	Botanical name	% of total FFA							
		C <sub>8:0</sub>	C <sub>10:0</sub>	C <sub>12:0</sub>	C <sub>14:0</sub>	C <sub>16:0</sub>	C <sub>18:0</sub>	C <sub>18:1</sub>	C <sub>18:2</sub>
Date palm	Phoenix dactylifera	---	---	---	---	91	4	---	4

Almost 50% of products we consume contain palm oil

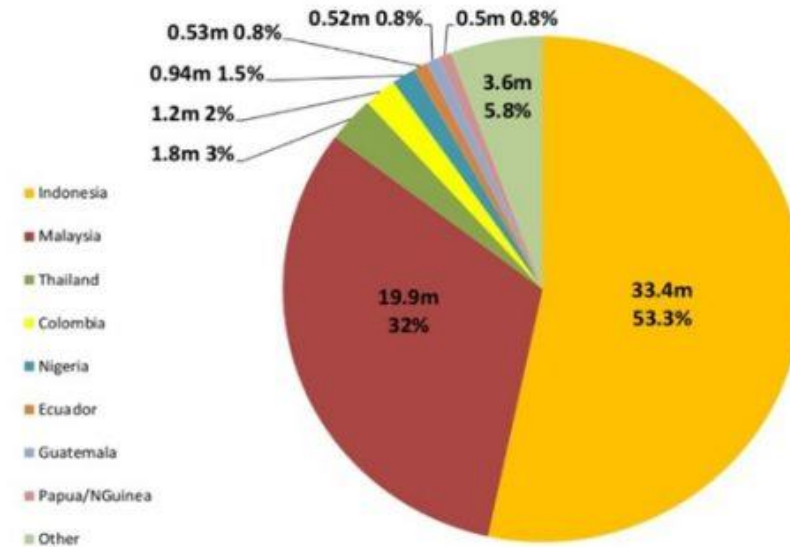


# Palm oil

Vegetable oil consumed worldwide



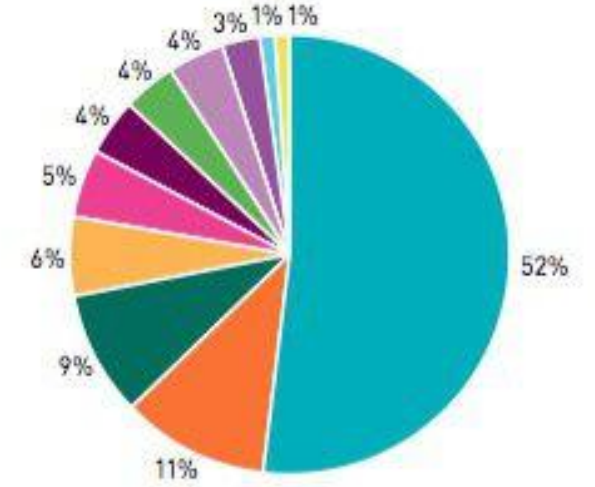
Global Palm Oil Production 2015 – MMT



63 million tons per year

## OUR GREENHOUSE GAS FOOTPRINT

[% contribution by category 2008]



- soap, shower gel & skin care
- laundry detergents & fabric conditioners
- shampoo & conditioners
- soups, sauces & stock cubes
- tea & beverages
- household cleaners
- ice cream
- margarine & spreads
- mayonnaise, mustard & dressings
- deodorants
- toothpaste

Skin care, cloth washing and body cleansing = >75%





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חברה אחת עושה ריקול- חצי מעבר מתרוקן.  
יוקר המחיה בתמונה אחת.



# The main problem with palm oil industry - **Deforestation**



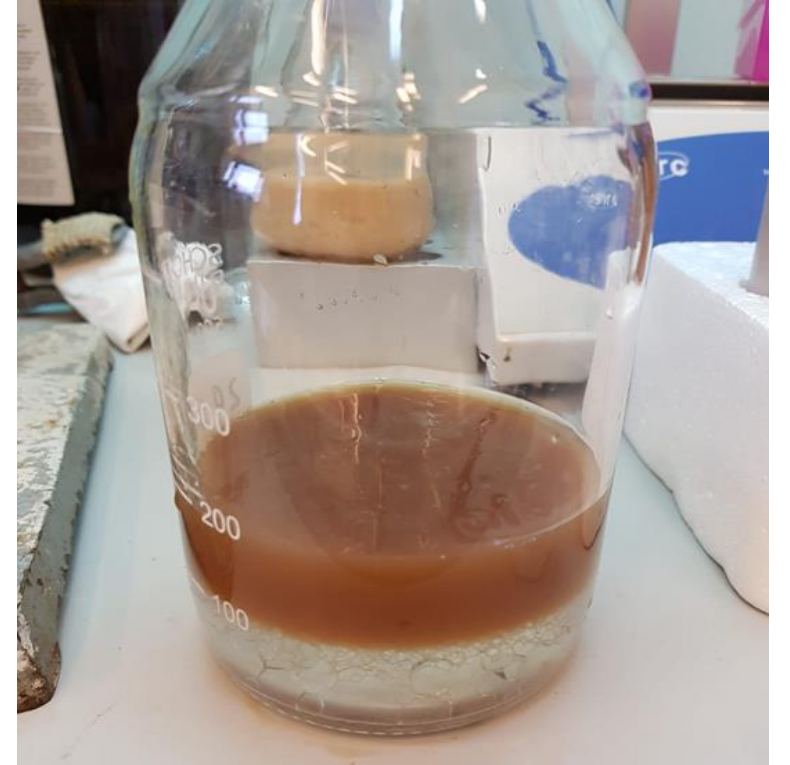
# The main problem with palm oil industry - Deforestation



Another problem with palm oil industry (and date palm agricultural routine) – **Air pollution**



# From palm oil to date oil



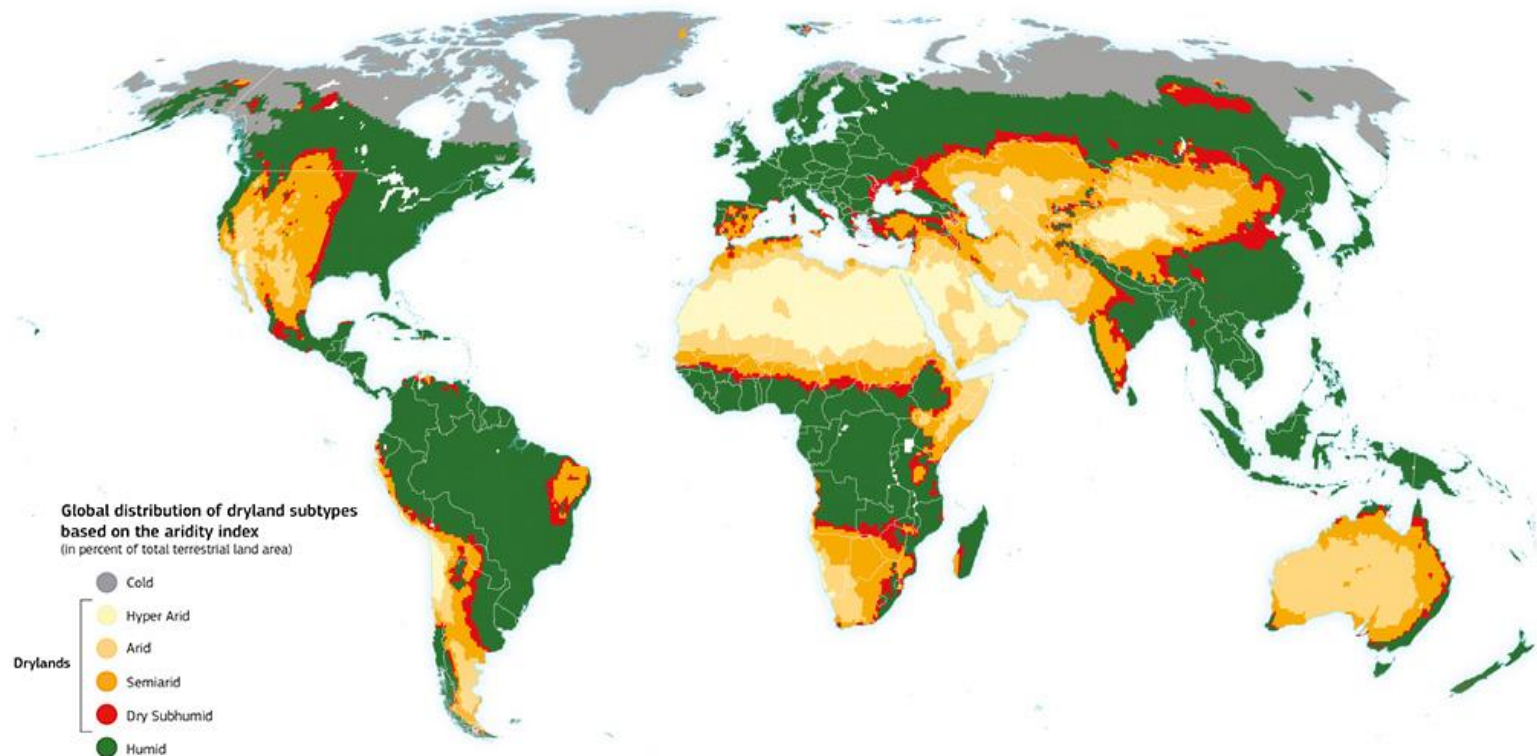
# Date oil – new and green solution

Better utilization of existing plantation area



## Date oil – A new and green solution

Date oil may be a new income source to drylands population.  
Drylands are expanding due to **DESERTIFICATION\***

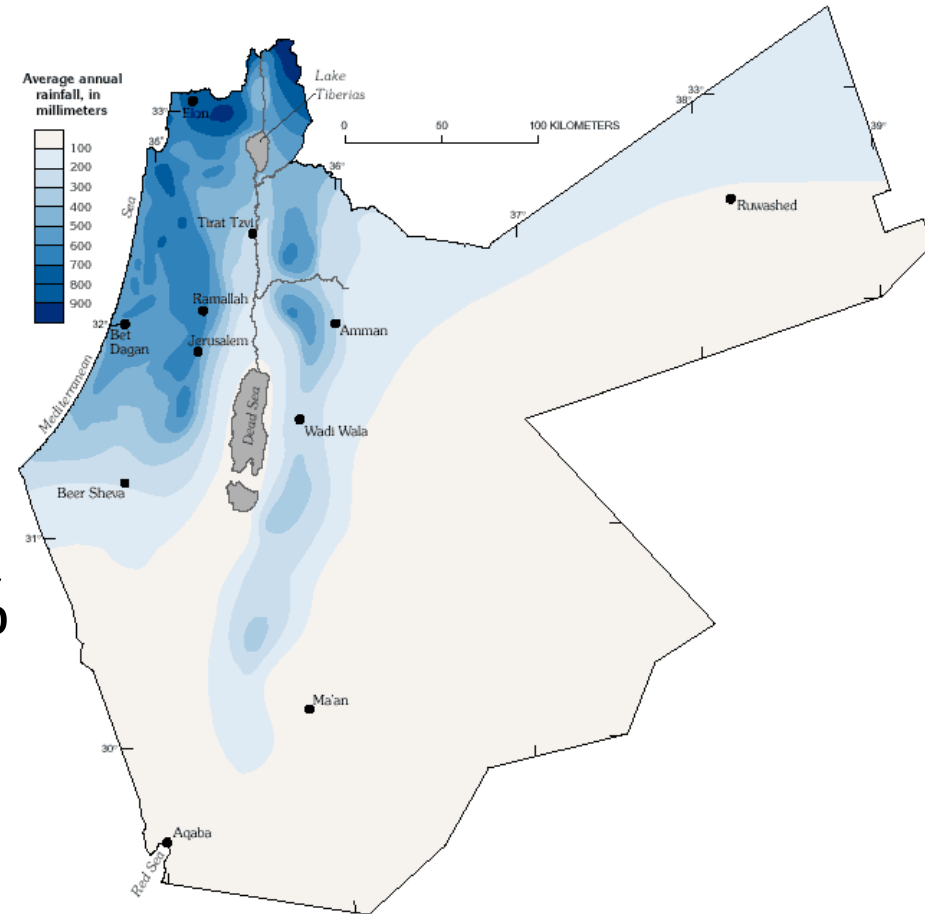


\*Desertification has been described by the UN as “the greatest environmental challenge of our time” and climate change worsen it

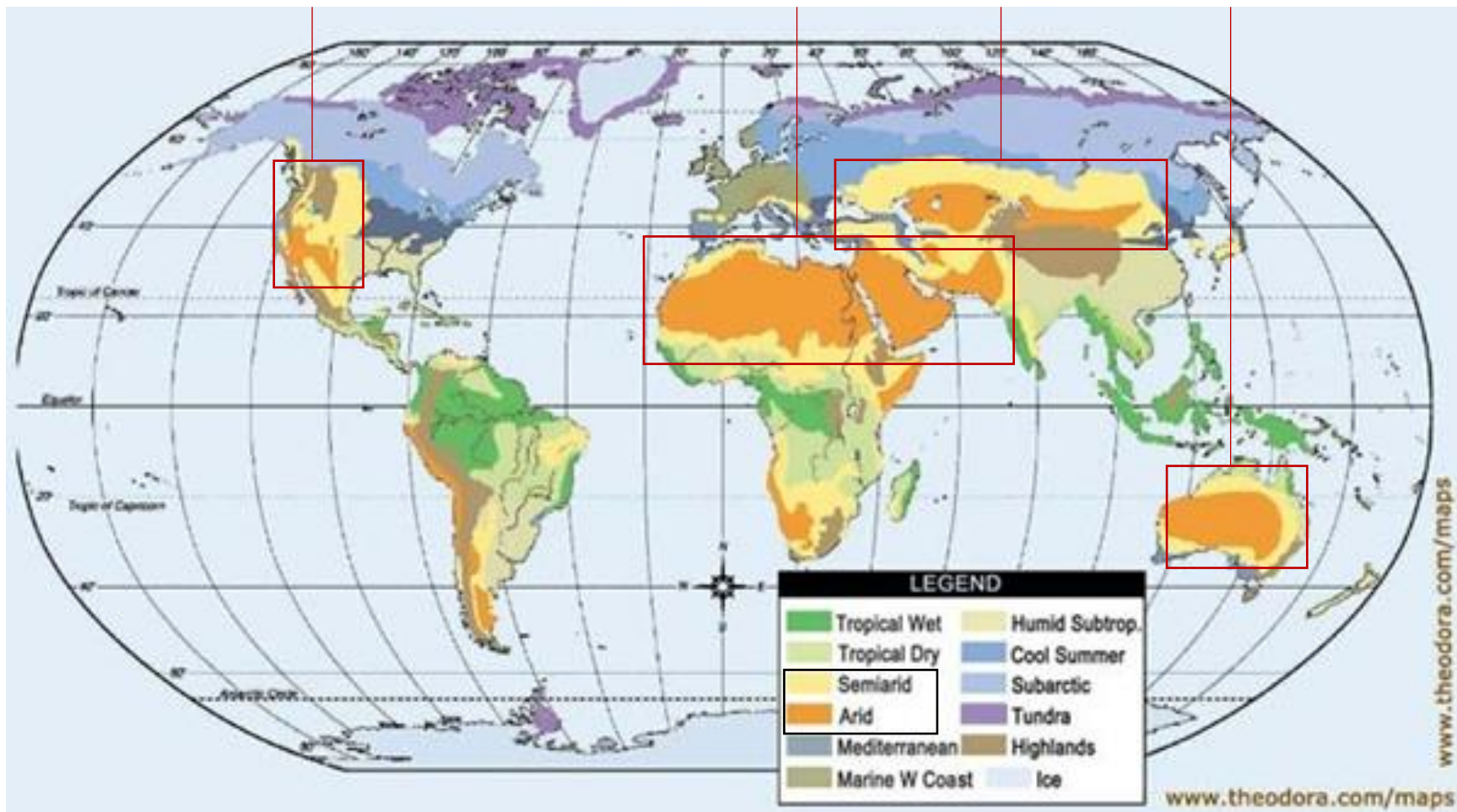
## *Date tree potential growth areas – Israel and Jordan*

Arid climate is required for date trees to grow, with low annual precipitation, high temperatures during the day and low humidity during the night.

In Jordan, i.e., only 20% of the date tree potent area is exploited



# *Date tree potential growth areas - worldwide*



## *Date tree oil – from a problem to a green innovation*

- Developing a unique and green solution to the massive use of the problematic palm oil from unused agricultural waste to produce a unique, yet unknown, product
- Defeats deforestation, serves as an anti-desertification agent
- Provides economic solution to underexploited arid regions
- Boosts inter-regional collaborations: Israeli-Palestinian-Jordanian-Saudi Arabian-Moroccan



# The missing link



Oil name	Botanical name	% of total FFA					
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Date oil	<i>Phoenix dactylifera</i>	---	---	91	4	---	4
Palm oil	<i>Elaeis oleifera</i>	---	1	43	10	42	3
Palm kernel oil	<i>Elaeis oleifera</i>	49	16	8	3	15	2
Coconut palm	<i>Cocos nucifera</i>	49	20	9	3	6	1

## Date Kernel oil

The oil is produced of another agricultural **WASTE** with very long decomposition time



# The missing link



Oil name	Botanical name	% of total FFA					
		C <sub>12:0</sub>	C <sub>14:0</sub>	C <sub>16:0</sub>	C <sub>18:0</sub>	C <sub>18:1</sub>	C <sub>18:2</sub>
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Thank you

