



HUMANS



GOVERNMENT



NEW LIVING-SPACE



NEW GREEN INDUSTRY



TECHNICAL INFRASTRUCTURE



SOCIAL INFRASTRUCTURE



NEW ENERGY



AGRICULTURE



DRINK WATER



FOOD, DRINKS



RAW MATERIALS



BIO CRUDE OIL



BIOCHEMICALS



PHARMACEUTICAL



SERVICES



TRADE



LOGISTICS



FUTURE TECHNOLOGIES

# FOOD PRODUCTION IN THE DESERT/ DRY AREAS

## FOOD PRODUCTION / OILS & FATS

PER CAPITA	CONSUM	PEOPLE	
		82000	(german)
	[ kg/ a ]	[ kg/ a ]	
SUM OILS / FATS	22	1.804.000	
Butter	6	492.000	Butter
Margarine	5	410.000	Margarine
Cooking Oil	11	902.000	Speiseöl
Synthetic edible fat	0	0	

### SYNTHETIC COOKING OIL (PLAN REVISION: NO USE)

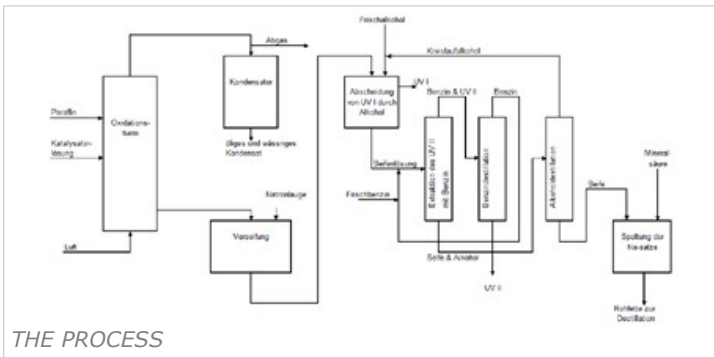


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graphic source : googel-pictures/ internet

- Fischer-Tropsch by-products Paraffin C18 – C30 (max. 250.000 t/a) were used for the production of synthetic edible fat (NEED SUM 2000 t/a) with the chemical-process Parafinoxidation.
- The process consisted of three main steps oxidation, the workup of the oxidation mixture to crude fatty acids and eventually their separation by distillation in fatty acid fractions. The chemical industry processed the fatty fractions proceeds to end products such as:
  - soaps
  - detergents
  - plasticizers
  - synthetic fat



The paraffin responded to the liquid state at very low temperatures and in the presence of a catalyst about 15 to 30 hours with atmospheric oxygen, to about 30 to a maximum of 50% of the paraffin were converted to fatty acid.

The resulting fatty acids were subject to further the post-oxidation, so that compared to the statistically expected distribution caused an excessive amount of low molecular weight fatty acids. As non-volatile products originated fatty acids, alcohols, aldehydes, ketones, esters and lactones, as the volatile products were carbon dioxide, water, low molecular weight carboxylic acids and esters thereof, as well as peroxides, aldehydes and alcohols.

Beneficial to the recovery of pure fatty acids was a relatively low temperature oxidation. In a sales limit of about 30% and at temperatures of 105 to 120 ° C, the chemical industry won fatty acids in high selectivity and good quality.

know source: wikipedia

- **WARNING : SYNTHETIC OIL, FET IS POISON FOR HER HEART: THE CAUSE OF PREMATURE HEART ATTACK!**

# FOOD PRODUCTION IN THE DESERT/ DRY AREAS

## FOOD PRODUCTION / VEGETABLES

			PEOPLE		
	consum p. capita		82000	200	
VEGETABLES CONSUMPTION	[ kg/ a ]	(german)	[ kg/ a ]	ha	
White cabbage, red cabbage	4,8	Weißkohl, Rotkohl	393.600	7,02%	14
Kale, kohlrabi, chinese cabbage	2,1	Wirsingkohl, Kohlrabi, Chinakohl	172.200	3,07%	6
Brussels sprouts	0,3	Rosenkohl	24.600	0,44%	1
Cauliflower, kale	2	Blumenkohl, Grünkohl	164.000	2,92%	6
Carrots, carrots, beetroot	8	Möhren, Karotten, Rote Rüben	656.000	11,70%	23
Celery	0,8	Sellerie	65.600	1,17%	2
Leek	1	Porree	82.000	1,46%	3
Spinach	1	Spinat	82.000	1,46%	3
Asparagus	2,7	Spargel	221.400	3,95%	8
Peas	1,2	Erbsen	98.400	1,75%	4
Beans	1,7	Bohnen	139.400	2,49%	5
Lettuce, iceberg lettuce	2,8	Kopfsalat, Eisbergsalat	229.600	4,09%	8
Onions	7	Speisezwiebeln	574.000	10,23%	20
Tomatoes	24	Tomaten	1.968.000	35,09%	70
Cucumbers	7	Gurken	574.000	10,23%	20
Mushrooms	2	Champignons	164.000	2,92%	6
<b>TOTAL</b>	<b>68,4</b>		<b>5.608.800</b>	<b>100%</b>	
	<b>24 m<sup>2</sup></b>				

know source about concum per capita: german federal statistical office

## FOOD PRODUCTION IN THE DESERT/ DRY AREAS

### FOOD PRODUCTION / SWEET & FRUIT

			PEOPLE		AREA
	CONSUM p. capita		82000		
	[ kg/ a ]	(german)	[ kg/ a ]		ha
SUM SWEET	39,2 kg/a		3.214.400		
Sugar	35	Zucker	2.870.000		
Honey	1,2	Honig	98.400		
Cocoa	3	Kakao	246.000		
BEET	220	Zuckerrüben	18.750.000		340
OWN SUGAR PRODUCTION	35	Sugar			Factory

know source about concum per capita: german federal statistical office

			PEOPLE	SHARE	AREA
	consum p. capita		82000	350	
FRUIT CONSUMPTION	[ kg/ a ]	(german)	[ kg/ a ]	ha	ha
Blueberries, cranberries, blackberries	1,6	Brombeeren, Heidelbeeren, Preiselbeeren	131.200	2,40%	8
Table grapes	7	Tafeltrauben	574.000	10,51%	37
Bananas	11	Bananen	902.000	16,52%	58
Apricots	0,8	Aprikosen	65.600	1,20%	4
Peaches	3,5	Pfirsiche	287.000	5,26%	18
Currants, gooseberries, raspberries	1,2	Johannisbeeren, Stachelbeeren, Himbeeren	98.400	1,80%	6
Strawberries	3,5	Erdbeeren	287.000	5,26%	18
Apples	32	Äpfel	2.624.000	48,05%	168
Pears	3	Birnen	246.000	4,50%	16
Cherries	2	Kirschen	164.000	3,00%	11
Plums	1	Pflaumen	82.000	1,50%	5
<b>SUM</b>	<b>66,6</b>		<b>5.461.200</b>	<b>100%</b>	<b>350</b>
	<b>40 m<sup>2</sup></b>				

know source about concum per capita: german federal statistical office

# FOOD PRODUCTION IN THE DESERT/ DRY AREAS

## FOOD PRODUCTION / PLANT FOODS

				PEOPLE		AREA
	CONSUM p. capita	AREA p. capita		82000	2800	
	[ kg/ a ]	[ m <sup>2</sup> ]	(german)	[ kg/ a ]	ha	ha
PLANT FOODS						
Rye, Flour	50	125	Roggen, Mehl	4.100.000	IMPORT	(750)
Oats	50	125	Hafer	4.100.000	IMPORT	(750)
Corn			Mais			
Wheat, Flour	50	125	Weizen, Mehl	4.100.000	26,32%	737
Durum wheat, Flour	75	165	Hartweizen, Mehl	6.150.000	39,47%	1.105
Potatoes	50	25	Kartoffeln	4.100.000	26,32%	737
Rice	15	25	Reis	1.230.000	7,89%	221
Bread	50		Brot			
Flour, salt, water and blowing agents such as baking yeast and sourdough.			Mehl, Salz, Wasser und Treibmittel, wie Back Hefe und Sauerteig			
Pasta	8		Nudeln			
<b>SUM 1</b>	<b>290</b>	<b>340</b>		<b>15.580.000</b>	<b>100%</b>	<b>2800</b>
<b>SUM 1 + IMPORT</b>				<b>23.780.000</b>	<b>65%</b>	

know source about concum per capita: german federal statistical office

# FOOD PRODUCTION IN THE DESERT/ DRY AREAS

## FOOD PRODUCTION / ANIMAL PRODUCTION

		IMPORT		PEOPLE	
	CONSUM p. capita	AREA p. capita		82000	
	[ kg/ a ]	[ m <sup>2</sup> ]	(german)	[ kg/ a ]	
ANIMAL PRODUCTION					
Beef	6	185	Rindfleisch	492.000	IMPORT (OWN)
Poultry	2,7	49	Geflügelfleisch	221.400	IMPORT (OWN)
Eggs 103 pieces	6,4	79,2	Eier	524.800	IMPORT (OWN)
Milk, yogurt,	150	528	Milch, Joghurt	12.300.000	IMPORT (OWN)
Cheese, cottage cheese, cream			Käse, Quark, Sahne		IMPORT (OWN)
Insects	R&D				
Fish	50		Fisch	4.100.000	OWN
FISH FOOD	70			5.740.000	OWN
TOTAL FISH FOOD					
FISH FOOD COMPONENTS			Mückenlarven, Wasserflöhe, kleine Garnelen, Miesmuschelstücke, Plankton, Insekten, Mais, Weizen, Sonstiges		
<b>SUM</b>	<b>260</b>	<b>840</b>		<b>23.378.200</b>	
				<b>(6900 ha)</b>	

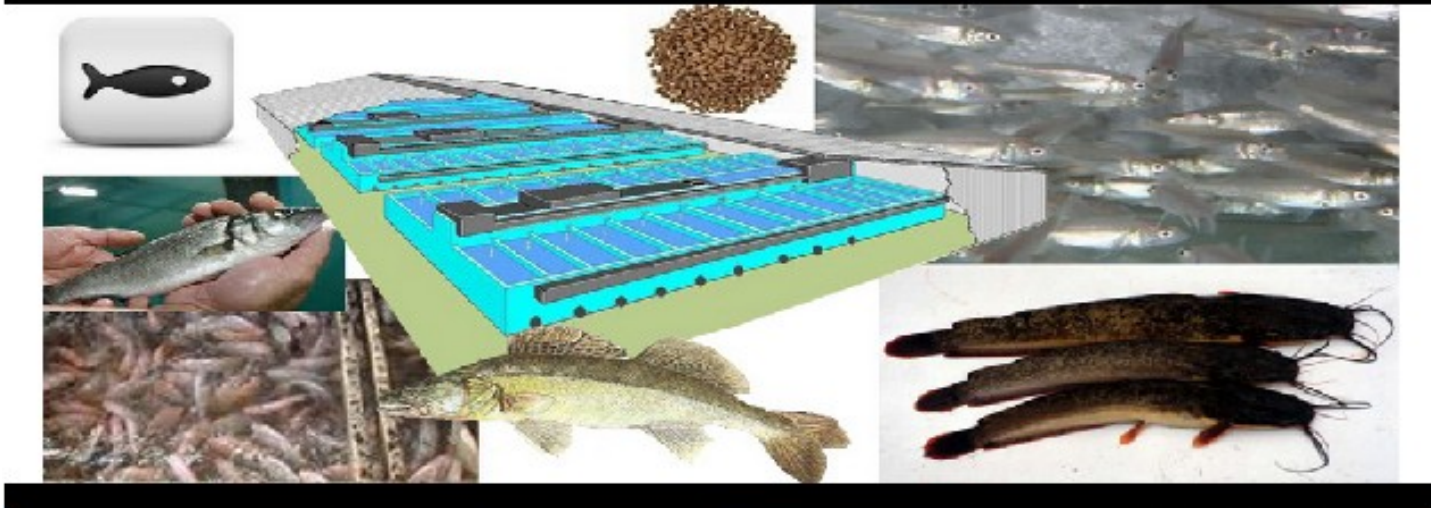
know source about concum per capita: german federal statistical office

# FOOD PRODUCTION IN THE DESERT/ DRY AREAS

## FOOD PRODUCTION / FISH FARM FOR 82.000 INHABITANT



FISH FARM IN THE DESERT



graphic sources : googel / internet

NUMBER PEOPLE	82.000
FISH CONSUMPTION PER CAPITA	50 kg
TOTAL FISH CONSUMPTION	4000 t/a
FISH EAT TIME	EVERY 2nd DAY
FISH EAT QUANTITY	280 g WITH ONE MEAL
MASS BALANCE FOOD : FISH	1,4
NEED FISH FOOD	5600 t/a
EQUIPMENT	Four cycle breeding facilities
HALL DIMENSION	54 m x 24 m x 3,5 m / 8 Units
ENERGY CONSUMPTION	1,6 MW / 8640 h /
COSTS FISH	3,75 €/ kg
TOTAL COSTS FISH FOOD	11 Mill. €/a
EMPLOYEE	50 ( 1,7 Mill. €/a)
INVESTMENT FISH PLANT	45 Mill. €
INVESTMENT BUILDING	5 Mill. €
INVESTMENT ENERGY PLANT	6,5 Mill. €
TOTAL INVESTMENT	70 Mill. €
	15 Mill. €/a
REVENUE	15 Mill. €/a
OVERFLOW	0

know source: average/ german companies for fisch production

# FOOD PRODUCTION IN THE DESERT/ DRY AREAS

## DISTILLATION DRINK WATER PLANT FOR FOOD PRODUCTION

### BASE SPEZIFICATION DATA

MED (Multi-Effect-Distillation)

INVESTMENT 15.000 €/ m<sup>3</sup> \* d

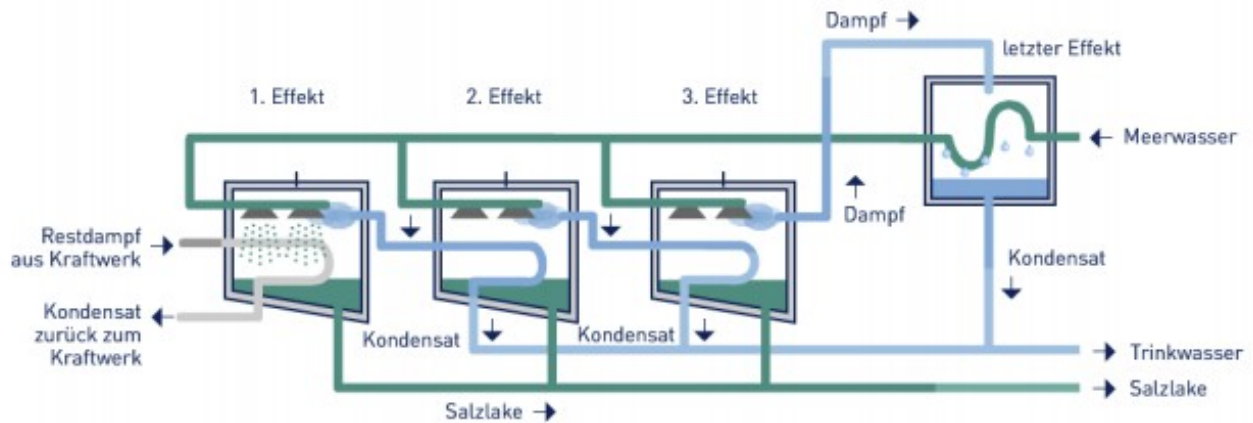
HEAT-CONSUMPTION := 60 kWh/ m<sup>3</sup>, 70°C

ENERGY-CONSUMPTION := 2-4 kWh/ m<sup>3</sup>

INVESTMENT 20.000 m<sup>3</sup> /d; 300 Mill. €

know source: average/ internet

### SCHEME DRAWING OF THE MAIN FUNCTION



graphic sources : google-pictures / internet

### REQUIRED DATA

	PEOPLE
WATERING FOOD (MED)	87.000
SPECIFICATION DATA	8 Liter/d*m2 is used
QUANTITY	7 Mill. m <sup>3</sup> / a
	18.450 m <sup>3</sup> / d
UNITS	1
SUM INVESTMENT	x
HEAT-CONSUPTION	50 MW
ELECTRICAL ENERGY-CONSUMPTION	2,5 MW