

# Food Balance Sheets

## Palm Oil

For this example, we'll first consider the full process for creating a food balance sheet for wheat. We start off with an empty table:

	Name	Production	Imports	Exports	StockChange	Food	Food Processing	Feed	Seed	Tourist	Industrial	Loss
	Palm oil	-	-	-	-	-	-	-	-	-	-	-
	Oil of palm kernels	-	-	-	-	-	-	-	-	-	-	-
	Margarine and Shortening	-	-	-	-	-	-	-	-	-	-	-
	Fatty acids	-	-	-	-	-	-	-	-	-	-	-
	Oil boiled, dehydrated	-	-	-	-	-	-	-	-	-	-	-
	Fat preparations nes	-	-	-	-	-	-	-	-	-	-	-
	Hydrogenated oils	-	-	-	-	-	-	-	-	-	-	-

## Production

For production data, we first fill in the table with any available official figures. In this case, the production quantity is known for all the primary products and thus no imputation is done. If we were to have missing quantities, we would impute data as described in chapter two and as shown in the wheat example.

	Name	Production	Imports	Exports	StockChange	Food	Food Processing	Feed	Seed	Tourist	Industrial	Loss
	Palm oil	-	-	-	-	-	-	-	-	-	-	-
	Oil of palm kernels	-	-	-	-	-	-	-	-	-	-	-
	Margarine and Shortening	<b>3,714,000</b>	-	-	-	-	-	-	-	-	-	-
	Fatty acids	-	-	-	-	-	-	-	-	-	-	-
	Oil boiled, dehydrated	-	-	-	-	-	-	-	-	-	-	-
	Fat preparations nes	<b>194,100</b>	-	-	-	-	-	-	-	-	-	-
	Hydrogenated oils	-	-	-	-	-	-	-	-	-	-	-

## Trade

Please reference chapter 2 and the wheat example for a thorough description of the trade processing. For this example, we simply insert the available trade figures.

	Name	Production	Imports	Exports	StockChange	Food	Food Processing	Feed	Seed	Tourist	Industrial	Loss
	Palm oil	-	<b>1,087,600</b>	<b>94,900</b>	-	-	-	-	-	-	-	-
	Oil of palm kernels	-	<b>0</b>	<b>0</b>	-	-	-	-	-	-	-	-
	Margarine and Shortening	3,714,000	<b>0</b>	<b>0</b>	-	-	-	-	-	-	-	-
	Fatty acids	-	<b>0</b>	<b>0</b>	-	-	-	-	-	-	-	-
	Oil boiled, dehydrated	-	<b>0</b>	<b>0</b>	-	-	-	-	-	-	-	-
	Fat preparations nes	194,100	<b>0</b>	<b>0</b>	-	-	-	-	-	-	-	-
	Hydrogenated oils	-	<b>0</b>	<b>0</b>	-	-	-	-	-	-	-	-

### Stock Changes

Generally, stocks will be held for a select number of primary level products (such as wheat or rice). However, in the case of sugar, it is not uncommon for countries to hold stocks for processed commodities such as raw or refined sugar. The stock change in the table will ideally be a quantity measured within the country, but in almost all cases this is not possible. Thus, the stock change quantity must be imputed, and we do this imputation via the linear regression model on historical stock change data described more thoroughly in chapter 2.

	Name	Production	Imports	Exports	StockChange	Food	Food Processing	Feed	Seed	Tourist	Industrial	Loss
	Palm oil	-	1,087,600	94,900	<b>0</b>	-	-	-	-	-	-	-
	Oil of palm kernels	-	0	0	<b>0</b>	-	-	-	-	-	-	-
	Margarine and Shortening	3,714,000	0	0	<b>3,900</b>	-	-	-	-	-	-	-
	Fatty acids	-	0	0	<b>0</b>	-	-	-	-	-	-	-
	Oil boiled, dehydrated	-	0	0	<b>0</b>	-	-	-	-	-	-	-
	Fat preparations nes	194,100	0	0	<b>0</b>	-	-	-	-	-	-	-
	Hydrogenated oils	-	0	0	<b>0</b>	-	-	-	-	-	-	-

### Food

The module estimating food allocation uses food consumption estimates from the previous year and extrapolates these estimates forward using changes in GDP and product-related income elasticities. Recall that the “Food” variable is only reported at the primary level as the “Food Processing” variable is estimated by standardizing the “Food” quantities for all the processed commodities. Also, sugar is a special case in that the food balance is not done at the level of the sugar crops (i.e. sugar cane and sugar beet) but rather at the level of raw sugar. Thus, when we later refer to the “primary level” for sugar, we will really mean the raw sugar commodity. Now, the “Food” and “Food Processing” variables are filled in for raw sugar.

	Name	Production	Imports	Exports	StockChange	Food	Food Processing	Feed	Seed	Tourist	Industrial	Loss
	Oil palm fruit	-	0	0	0	<b>0</b>	<b>15,000</b>	-	-	-	-	-

	Name	Production	Imports	Exports	StockChange	Food	Food Processing	Feed	Seed	Tourist	Industrial	Loss
	Palm oil	-	1,087,600	94,900	0	-	-	-	-	-	-	-
	Oil of palm kernels	-	0	0	0	-	-	-	-	-	-	-
	Margarine and Shortening	3,714,000	0	0	3,900	-	-	-	-	-	-	-
	Fatty acids	-	0	0	0	-	-	-	-	-	-	-
	Oil boiled, dehydrated	-	0	0	0	-	-	-	-	-	-	-
	Fat preparations nes	194,100	0	0	0	-	-	-	-	-	-	-
	Hydrogenated oils	-	0	0	0	-	-	-	-	-	-	-

### Losses

Losses are estimated using the methodology described in chapter 2, unless losses quantities are measured by the country.

	Name	Production	Imports	Exports	StockChange	Food	Food Processing	Feed	Seed	Tourist	Industrial	Loss
	Oil palm fruit	-	0	0	0	0	15,000	-	-	-	-	<b>0</b>
	Palm oil	-	1,087,600	94,900	0	-	-	-	-	-	-	<b>0</b>
	Oil of palm kernels	-	0	0	0	-	-	-	-	-	-	<b>0</b>
	Margarine and Shortening	3,714,000	0	0	3,900	-	-	-	-	-	-	<b>0</b>
	Fatty acids	-	0	0	0	-	-	-	-	-	-	<b>0</b>
	Oil boiled, dehydrated	-	0	0	0	-	-	-	-	-	-	<b>0</b>
	Fat preparations nes	194,100	0	0	0	-	-	-	-	-	-	<b>0</b>
	Hydrogenated oils	-	0	0	0	-	-	-	-	-	-	<b>0</b>

### Seed

As the country of interest has no production of palm oil fruit, no amount will be allocated to seed. Thus, we can fill the table in with zeros.

	Name	Production	Imports	Exports	StockChange	Food	Food Processing	Feed	Seed	Tourist	Industrial	Loss
	Oil palm fruit	-	0	0	0	0	15,000	-	<b>0</b>	-	-	0
	Palm oil	-	1,087,600	94,900	0	-	-	-	<b>0</b>	-	-	0
	Oil of palm kernels	-	0	0	0	-	-	-	<b>0</b>	-	-	0
	Margarine and Shortening	3,714,000	0	0	3,900	-	-	-	<b>0</b>	-	-	0
	Fatty acids	-	0	0	0	-	-	-	<b>0</b>	-	-	0
	Oil boiled, dehydrated	-	0	0	0	-	-	-	<b>0</b>	-	-	0
	Fat preparations nes	194,100	0	0	0	-	-	-	<b>0</b>	-	-	0

Name	Production	Imports	Exports	StockChange	Food	Food Processing	Feed	Seed	Tourist	Industrial	Loss
Hydrogenated oils	-	0	0	0	-	-	-	0	-	-	0

### Industrial Utilization

As with the wheat example, few of the sugar commodities are used for industrial use. However, bagasse, a byproduct in the processing of sugar cane into raw sugar, can be utilized in industry. This allocation will be made later when we convert the sugar cane quantities into its processed products.

Name	Production	Imports	Exports	StockChange	Food	Food Processing	Feed	Seed	Tourist	Industrial	Loss
Oil palm fruit	-	0	0	0	0	15,000	-	0	-	0	0
Palm oil	-	1,087,600	94,900	0	-	-	-	0	-	-	0
Oil of palm kernels	-	0	0	0	-	-	-	0	-	-	0
Margarine and Shortening	3,714,000	0	0	3,900	-	-	-	0	-	-	0
Fatty acids	-	0	0	0	-	-	-	0	-	-	0
Oil boiled, dehydrated	-	0	0	0	-	-	-	0	-	-	0
Fat preparations nes	194,100	0	0	0	-	-	-	0	-	-	0
Hydrogenated oils	-	0	0	0	-	-	-	0	-	-	0

### Tourist Consumption

As with the wheat example, we see a negative tourist consumption amount. This indicates that more calories are available in the country (a decrease in utilization is mathematically equivalent to an increase in supply) because inhabitants consumed calories abroad.

Name	Production	Imports	Exports	StockChange	Food	Food Processing	Feed	Seed	Tourist	Industrial	Loss
Oil palm fruit	-	0	0	0	0	15,000	-	0	0	0	0
Palm oil	-	1,087,600	94,900	0	-	-	-	0	0	-	0
Oil of palm kernels	-	0	0	0	-	-	-	0	0	-	0
Margarine and Shortening	3,714,000	0	0	3,900	-	-	-	0	0	-	0
Fatty acids	-	0	0	0	-	-	-	0	0	-	0
Oil boiled, dehydrated	-	0	0	0	-	-	-	0	0	-	0
Fat preparations nes	194,100	0	0	0	-	-	-	0	0	-	0
Hydrogenated oils	-	0	0	0	-	-	-	0	0	-	0

## Feed

For the palm oil commodity tree, only one element is allocated to feed (cakes of palm kernels). This commodity is a byproduct in the processing of palm kernels into oil of palm kernels. However, for the country we are considering, no palm kernels are available. Thus, neither “oil of palm kernels” nor “cake of palm kernels” are produced. Also, palm oil itself is never fed directly to animals, and thus we have no commodity to allocate any feed to. Thus, all feed is assumed to be 0.

Name	Production	Imports	Exports	StockChange	Food	Food Processing	Feed	Seed	Tourist	Industrial	Loss
Oil palm fruit	-	0	0	0	0	15,000	<b>0</b>	0	0	0	0
Palm oil	-	1,087,600	94,900	0	-	-	<b>0</b>	0	0	-	0
Oil of palm kernels	-	0	0	0	-	-	<b>0</b>	0	0	-	0
Margarine and Shortening	3,714,000	0	0	3,900	-	-	<b>0</b>	0	0	-	0
Fatty acids	-	0	0	0	-	-	<b>0</b>	0	0	-	0
Oil boiled, dehydrated	-	0	0	0	-	-	<b>0</b>	0	0	-	0
Fat preparations nes	194,100	0	0	0	-	-	<b>0</b>	0	0	-	0
Hydrogenated oils	-	0	0	0	-	-	<b>0</b>	0	0	-	0