Annex to chapter 2

1. Data for SDG 2

SDG 2 comprises eight targets and a total of 13 indicators (five of which contain multiple subindicators). Of these indicators, seven are tier I, three are tier II, and three are tier III for which data are not available, as the indicators are still in the process of methodological definition.

The United Nations Statistics Division provides data sets for a total of 10 indicators: 2.1.1 - Prevalence of undernourishment; 2.1.2 - Prevalence of moderate or severe food insecurity in the population, based on the Food Insecurity Experience Scale (FIES); 2.2.1 - Prevalence of stunting (height for age <-2 standard deviation from the median of the World Health Organization (WHO) Child Growth Standards) among children under 5 years of age; 2.2.2 - Prevalence of malnutrition (weight for height >+2 or <-2 standard deviation from the median of the WHO Child Growth Standards) among children under 5 years of age, by type (wasting and overweight); 2.5.1 - Number of plant and animal genetic resources for food and agriculture secured in either medium or long-term conservation facilities; 2.5.2 - Proportion of local breeds classified as being at risk, not at risk or at unknown level of risk of extinction; 2.a.1 - The agriculture orientation index for government expenditures; 2.a.2 - Total official flows (official development assistance plus other official flows) to the agriculture sector; 2.b.1 - Agricultural export subsidies; and 2.c.1 - Indicator of food price anomalies.

None of the provided datasets includes sex disaggregated data.

The data used in the analysis of SDG 2 was downloaded on 24 August 2018. After a country level data check following a major update of the Global SDG Indicators Database of the United Nations Statistics Division on 8 July 2019, the data series of 2.1.1 (Prevalence of undernourishment (percentage)), and the data series of 2.a.2 (Total official flows (disbursements) for agriculture, by recipient countries (millions of constant 2016 United States dollars)) are replaced with amended data, while the data series 2.5.1 is changed from “Number of local breeds kept in the country” to "Plant breeds for which sufficient genetic resources are stored (number)", thus, all the three series are replaced with amended data.

We examine data availability in the Arab region and implement data substitution, when needed, based on the criterion of having to cover half or more of the total population of the Arab region and at least one third of the Arab countries for an indicator/subindicator to be kept in the analysis. This leads us to omit indicators 2.1.2, 2.5.2, 2.b.1, and 2.c.1. When there are many subindicators that mean the same but are expressed differently (like in the case of the two series under indicator 2.2.1, and the two pairs of series under indicator 2.2.2), we choose the one that is more representative, easier to interpret and has more data availability. This leads us to omit one of the two series of 2.2.1, keeping “Proportion of children moderately or severely stunted (percentage)”; and two of the four series of 2.2.2, keeping “Proportion of children moderately or severely overweight (percentage)” and “Proportion of children moderately or severely wasted (percentage)”.

In fact, 2.5.2 is composed of six subindicators that make three pairs, where each pair contains a subindicator that measures a certain local breeds’ extinction risk level (at risk, not at risk, or unknown) as an absolute number (number of breeds exposed to this level) and another subindicator that measures the same but as a proportion. The sum of the three series that are expressed as proportions gives 100 per cent per observation and per year, for all observations. Moreover, 127 countries out of the total of 183 covered observations, including all of the 18 covered Arab countries, have a value of 100 per cent for the proportion of local breeds classified as being at an “unknown level of risk of extinction”, which is equivalent to a missing value as it hinders the evaluation of the local breeds’ extinction risk level. This is the reason why this indicator is dropped based on the criterion of having insufficient data availability.

The rest of the indicators/subindicators are subject to our data substitution scheme for the year 2017, considering the data spanning 2009–2017. Table 2.1 shows the number of substituted data points for each year, including those from Arab countries.

Table 2.1 Data substitution scheme for selected indicators and subindicators

Indicator or subindicator	Number of substituted data points (Arab)	Year
2.1.1 (Prevalence of undernourishment)	165 (5)	2016
2.2.1 (Proportion of children moderately or severely stunted)	20 (0)	2016
	18 (2)	2015
	23 (4)	2014
	17 (1)	2013
	19 (5)	2012
	9 (2)	2011
	9 (0)	2010
	8 (2)	2009
2.2.2 (Proportion of children moderately or severely overweight)	18 (0)	2016
	18 (2)	2015
	23 (4)	2014
	16 (1)	2013
	20 (5)	2012
	8 (2)	2011
	10 (0)	2010
	7 (2)	2009
2.2.2 (Proportion of children moderately or severely wasted)	20	2016
	18 (2)	2015
	23 (4)	2014
	17 (1)	2013
	19 (5)	2012
	9 (2)	2011
	9 (0)	2010
	7 (2)	2009

2.a.1 (Agriculture orientation index for government expenditures)	50 (2)	2016
	46 (3)	2015
	7 (1)	2014
	6 (0)	2013
	7 (2)	2012
	5 (1)	2011
	3 (0)	2010
	5 (2)	2009
2.a.2 (Total official flows (disbursements) for agriculture, by recipient countries (millions of constant 2017 United States dollars))	2 (1)	2016
	5 (1)	2010

For 2.5.1 (Plant breeds for which sufficient genetic resources are stored (number)), no data needed to be substituted.

This leaves us with seven integral indicators/subindicators with which we can assess the position of the region by 2030, as noted in box 2.1.

Box 2.1	**Summary list of preserved and examined indicators/subindicators**

- Indicator 2.1.1 – Prevalence of undernourishment
- Indicator 2.2.1 – 1 series out of 2 - Prevalence of stunting (height for age <-2 standard deviation from the median of the World Health Organization (WHO) Child Growth Standards) among children under 5 years of age
- Indicator 2.2.2 – 2 series out of 4 - Prevalence of malnutrition (weight for height >+2 or <-2 standard deviation from the median of the WHO Child Growth Standards) among children under 5 years of age, by type (wasting and overweight)
- Indicator 2.5.1 – Plant breeds for which sufficient genetic resources are stored (number)
- Indicator 2.a.1 – The agriculture orientation index for government expenditures
- Indicator 2.a.2 – Total official flows (disbursements) for agriculture, by recipient countries (millions of constant 2017 United States dollars)

However, we lose the ability to determine the region's position on the rest of the targets, indicators, and subindicators as noted in box 2.2, including those that exist in table 2.2 on targets, indicators, tiers and data availability in Arab countries for SDG 2, but that do not have sufficient data.

Box 2.2	**Summary list of omitted targets**

- 2.3 By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment

- 2.4 By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality
- 2.b Correct and prevent trade restrictions and distortions in world agricultural markets, including through the parallel elimination of all forms of agricultural export subsidies and all export measures with equivalent effect, in accordance with the mandate of the Doha Development Round
- 2.c Adopt measures to ensure the proper functioning of food commodity markets and their derivatives and facilitate timely access to market information, including on food reserves, in order to help limit extreme food price volatility

We note that, for 2.1.1, the data set provided by the United Nations Statistics Division contains data points such as "<2.5", indicating a value that is lower than 2.5. Thus, we replace these data points by 2.5 which then represents the floor of the corresponding values of the series. We also note that indicators 2.2.1 and 2.2.2 only address children that are under 5 years of age. Additionally, we note that, for indicator 2.a.2, the main data set provided by the United Nations Statistics Division only includes recipient countries and omits the donor countries that then, by the nature of construction of a full matrix consisting of all countries in the world, take missing values, which are de facto zeroes. Hence, 22 instead of 17 Arab countries become covered by data.

Annex 2.2 contains a graph for each of the evaluated series/indicators, showing the country level data values of the series/indicator for the years whose data points were used for every included country.

The global, regional and subregional aggregates of series 2.5.1, and 2.a.2 are calculated as regional sums, while 2.a.1 is a unweighted mean. The other aggregates are calculated as weighted means. The method of aggregation, in general, is chosen based on what is advised by the corresponding UNSTATS Metadata or by the original source of the corresponding data that is referred to by this Metadata. If none of these two references advise on the aggregation methods or weights, the decisions are made based on the most common scientific logic fitting the case and its feasibility (e.g. the availability of the needed data for the weighting variables).The following weights were actually used for the series/indicators whose global, regional, and subregional aggregates are weighted averages: Total Population in 2015 (World Population Prospects 2017), and Total population of children 0 to 5 years of age in 2015 (World Population Prospects 2017). The chapter includes more details about the weighting variables, including which weight was used for which series or indicator.

We calculate the world, regional, and subregional aggregates for each indicator and include the target value – when available – to facilitate comparability. For 2.1 whose aim is to "end hunger and ensure access by all people…to safe, nutritious and sufficient food all year round, by 2030", we consider the target value as 0 percent of prevalence of undernourishment. As for 2.2 whose aim is to "end all forms of malnutrition by 2030, including achieving, by 2025, the internationally agreed targets on stunting and wasting in children under 5 years of age…" we consider the target value as 0 per cent of prevalence of stunting and malnutrition (wasting and overweight) among children under 5 years of age. However, for 2.5 and 2.a, it is not possible to infer the official desired target values and thus they are not shown.

Table 2.2 Targets, indicators, tiers and data availability for Arab countries – SDG 2 (End hunger, achieve food security and improved nutrition and promote sustainable agriculture)

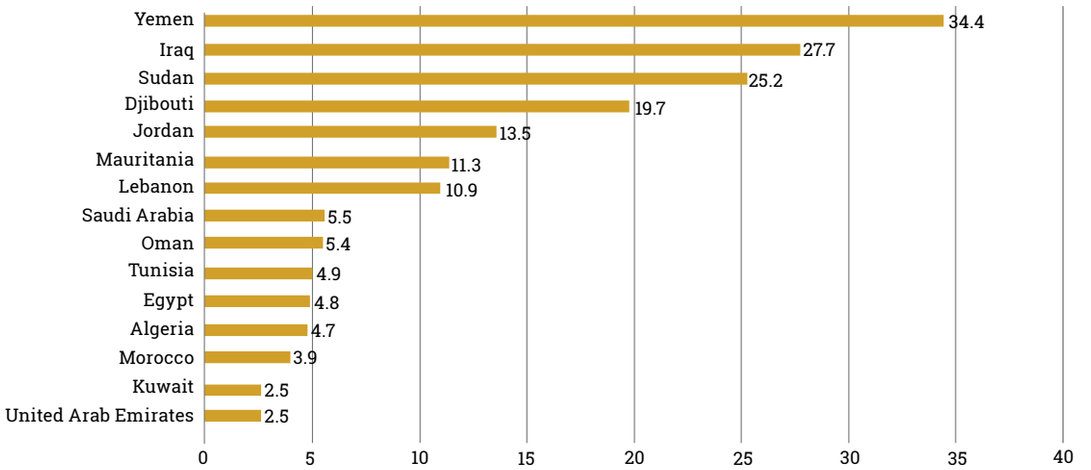
Target	Indicator	Number of subindicators	Tier	Data availability*
2.1 By 2030, end hunger and ensure access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year round	2.1.1 Prevalence of undernourishment	1 chosen out of 1	Tier I	15
	2.1.2 Prevalence of moderate or severe food insecurity in the population, based on the Food Insecurity Experience Scale (FIES)	(Dropped) 4	Tier II	x
2.2 By 2030, end all forms of malnutrition, including achieving, by 2025, the internationally agreed targets on stunting and wasting in children under 5 years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women and older persons	2.2.1 Prevalence of stunting (height for age <-2 standard deviation from the median of the World Health Organization (WHO) Child Growth Standards) among children under 5 years of age	1 chosen out of 2	Tier I	16
	2.2.2 Prevalence of malnutrition (weight for height >+2 or <-2 standard deviation from the median of the WHO Child Growth Standards) among children under 5 years of age, by type (wasting and overweight)	2 chosen out of 4	Tier I	16
2.3 By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment	2.3.1 Volume of production per labour unit by classes of farming/ pastoral/forestry enterprise size	(No data)	Tier III	x
	2.3.2 Average income of small-scale food producers, by sex and indigenous status	(No data)	Tier III	x
2.4 By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality	2.4.1 Proportion of agricultural area under productive and sustainable agriculture	(No data)	Tier III	x

2.5 By 2020, maintain the genetic diversity of seeds, cultivated plants and farmed and domesticated animals and their related wild species, including through soundly managed and diversified seed and plant banks at the national, regional and international levels, and promote access to and fair and equitable sharing of benefits arising from the utilization of genetic resources and associated traditional knowledge, as internationally agreed	2.5.1 Number of plant and animal genetic resources for food and agriculture secured in either medium- or long-term conservation facilities	1 chosen out of 1	Tier I	8
	2.5.2 Proportion of local breeds classified as being at risk, not at risk or at unknown level of risk of extinction	(Dropped) 6	Tier I	x
2.a Increase investment, including through enhanced international cooperation, in rural infrastructure, agricultural research and extension services, technology development and plant and livestock gene banks in order to enhance agricultural productive capacity in developing countries, in particular least developed countries	2.a.1 The agriculture orientation index for government expenditures	1 chosen out of 1	Tier II	11
	2.a.2 Total official flows (official development assistance plus other official flows) to the agriculture sector	1 chosen out of 1	Tier I	17
2.b Correct and prevent trade restrictions and distortions in world agricultural markets, including through the parallel elimination of all forms of agricultural export subsidies and all export measures with equivalent effect, in accordance with the mandate of the Doha Development Round	2.b.1 Agricultural export subsidies	(Dropped) 1	Tier I	x
2.c Adopt measures to ensure the proper functioning of food commodity markets and their derivatives and facilitate timely access to market information, including on food reserves, in order to help limit extreme food price volatility	2.c.1 Indicator of food price anomalies	(Dropped) 5	Tier II	x

Notes: * Figures refer to the number of Arab countries with data for the indicator, while x means there are no data or the indicator was dropped.
Source: https://unstats.un.org/sdgs/indicators/indicators-list/ and author's calculations.

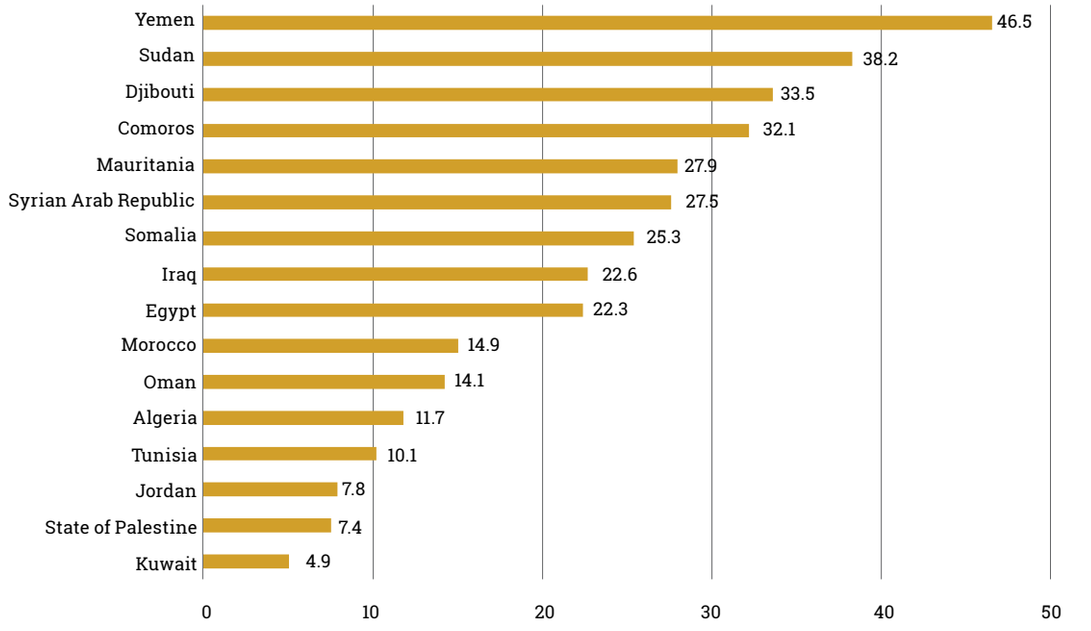
2. Country graphs

Figure 2.1 Indicator 2.1.1 - Prevalence of undernourishment
Prevalence of undernourishment (percentage)



Note: All data are for 2016.

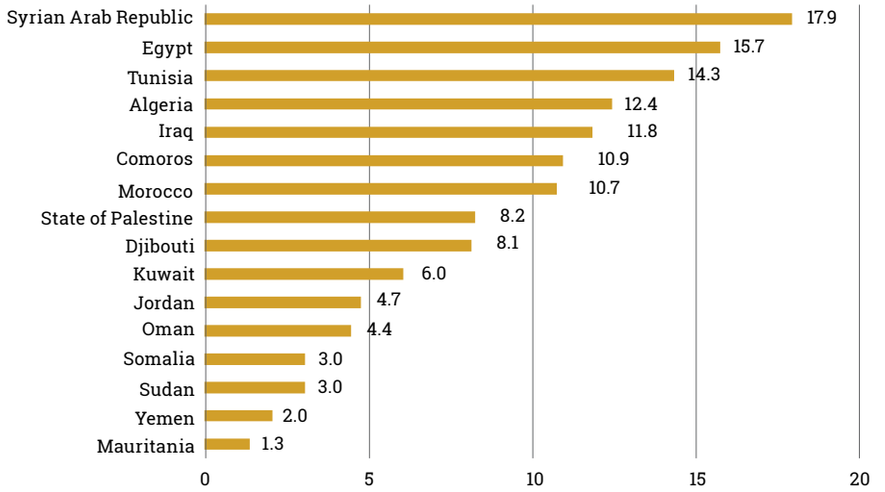
Figure 2.2 Indicator 2.2.1 - Prevalence of stunting (height for age <-2 standard deviation from the median of the World Health Organization (WHO) Child Growth Standards) among children under 5 years of age
Proportion of children moderately or severely stunted (percentage)



Note: Data are from the following years: Somalia and Syrian Arab Republic (2009); Iraq and Morocco (2011); Algeria, Comoros, Djibouti, Jordan and Tunisia (2012); Yemen (2013); Egypt, Oman, State of Palestine and Sudan (2014); Kuwait and Mauritania (2015).

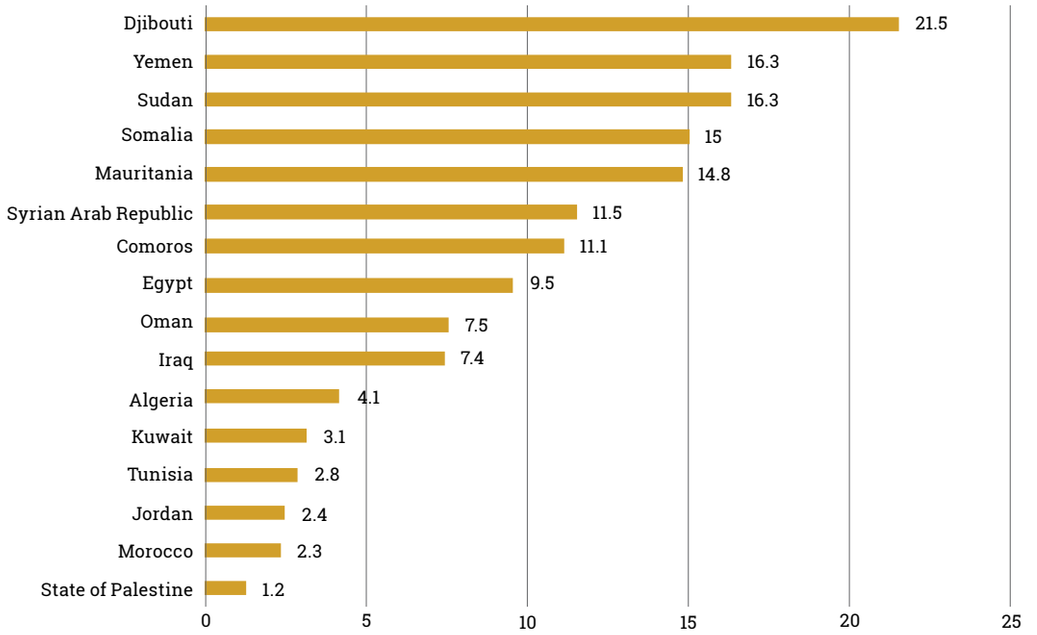
Figure 2.3 Two series of Indicator 2.2.2 - Prevalence of malnutrition (weight for height >+2 or <-2 standard deviation from the median of the WHO Child Growth Standards) among children under 5 years of age, by type (wasting and overweight)

Proportion of children moderately or severely overweight (percentage)



Note: All data are from 2017.

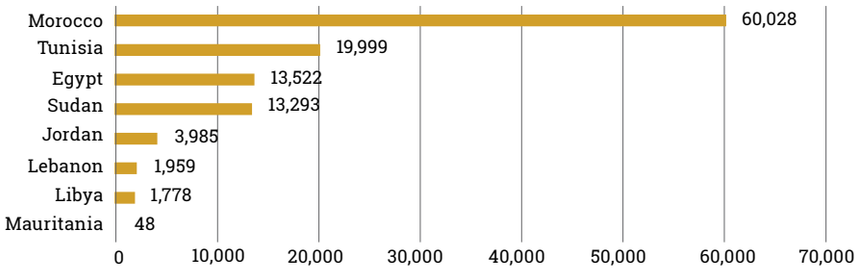
Proportion of children moderately or severely wasted (percentage)



Note: Data for indicator 2.2.2 are from the following years: Somalia and Syrian Arab Republic (2009); Iraq and Morocco (2011); Algeria, Comoros, Djibouti, Jordan and Tunisia (2012); Yemen (2013); Egypt, Oman, State of Palestine and Sudan (2014); Kuwait and Mauritania (2015).

Figure 2.4 Indicator 2.5.1 - Number of plant and animal genetic resources for food and agriculture secured in either medium- or long-term conservation facilities

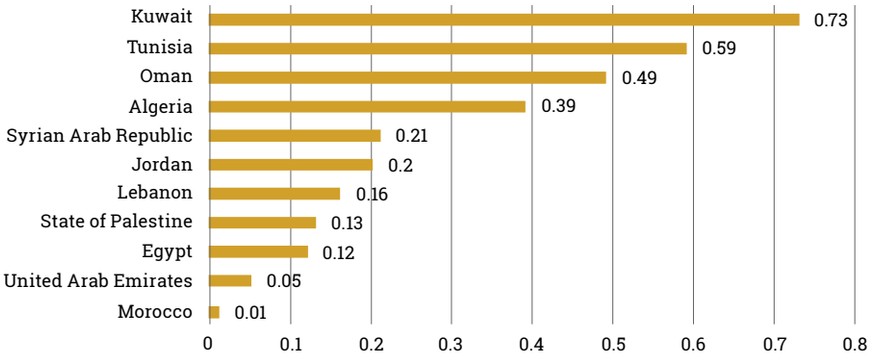
Plant breeds for which sufficient genetic resources are stored (number)



Note: All data are from 2017.

Figure 2.5 Indicator 2.a.1 - The agriculture orientation index for government expenditures

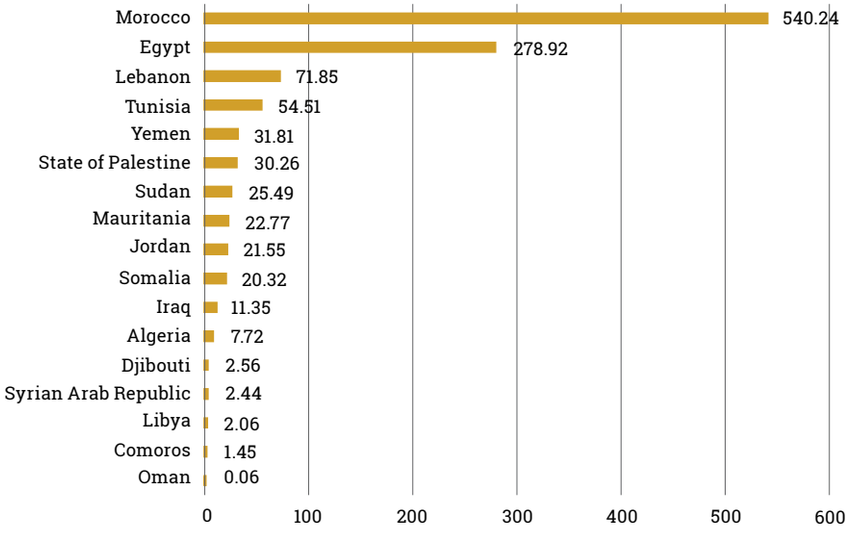
Agriculture Orientation Index (AOI) for government expenditures (no unit)



Note: Data are from the following years: Algeria and Syrian Arab Republic (2009); State of Palestine (2011); Morocco and Tunisia (2012); Oman (2014); Jordan, Kuwait and United Arab Emirates (2015); Egypt and Lebanon (2016).

Figure 2.6 Indicator 2.a.2 - Total official flows (official development assistance plus other official flows) to the agriculture sector

Total official flows (disbursements) for agriculture, by recipient countries (millions of constant 2017 United States dollars)



Note: Data are for 2017 apart from Oman (2010) and Libya (2016).