

# Sudan

This country profile, commissioned by The Netherlands Ministry of Foreign Affairs (Department of Inclusive Green Growth), gives a snapshot of what is happening in the closely related themes Food & Nutrition Security, Water and Climate and Renewable Energy in Sudan. It provides basic statistics on Sudan's performance on key indicators and indexes, but also analyses relevant national policies, current donor interventions, and the main trends on the above mentioned themes. Combined with an overview of Dutch support to Sudan, this profile concludes by suggesting potential priority result areas for The Netherlands.

In total, 12 countries profiles have been made, plus one regional profile for the Sahel.

BURKINA FASO	CHAD	EGYPT
IRAQ	JORDAN	LEBANON
NIGER	NIGERIA	SENEGAL
SOMALIA	TUNESIA	SAHEL REGION

## COUNTRY PROFILE SUDAN

COUNTRY PROFILE SUDAN	METRICS	WHAT NL ACTORS DO
	GOVERNMENT POLICIES	TRENDS & LIMITATIONS
	INTERVENTIONS & PLANS	MAIN RESULT AREAS



### SUDAN, FACTS

#### Government

- Federal dominant-party presidential republic
- President: Omar al-Bashir
- Official language: Arabic
- Religion: Islam
- Area: Total 1,886,068 km² (15th)

#### Population

- 2018 estimate 41,511,526
- Prospect 2050 80,386,000
- Density 21.3/km² (15th)
- GDP (PPP) 2017 estimate
- Total \$ 197.825 billion
- GDP (nominal) 2017 estimate
- Total \$ 138,090 billion
- Per capita \$ 4,700

# Metrics

## GENERAL INDICATORS

### UN Human Development Index

188 countries: 1st = best opportunities for development



### Anti-corruption and Accountability

100 = strongest policies and practices



### World Bank Doing Business Index

100 = most conducive environment for business



### Gender Inequality Index

188 countries: 1st = smallest gender divide



## CLIMATE/RENEWABLE ENERGY INDEXES

### World Bank ESMAP Electrification Index

population with access to electricity



### ND GAIN Index

181 countries: 1st = least climate change vulnerable, and best ready to improve resilience



## FOOD NUTRITION SECURITY INDEXES

### Global Hunger Index (IFPRI)

Range 0 – 100: 0 = no hunger



### Global Food Security Index (Economist)

113 countries: 1st = best food security



### Land Management Index (UNCCD)

180 countries: 1st = most sustainable land governance



## WATER INDEXES

### FAO AquaStat

Variation per capita internal renewable water resources



### World Bank Drinking Water Index

population using at least basic drinking water services



### JMP Sanitation Index

population with access to improved sanitation facilities



# Government policies

This section give a birds-eye overview of the policies of the Government of Sudan on Food and Nutrition Security, Water and Renewable Energy/Climate.

## Agriculture, FNS

The oil-boom of 1999-2011 has had a deep impact on the economic structure of Sudan. The easy revenue from oil got all the attention, at the cost of neglecting the strengthening of productive sectors w (agriculture, dairy and industry). There were massive transfers of oil revenues to revive agriculture under the Agricultural Revival Program but they came to little effect. In fact in this period the big agricultural schemes, such as Gezira and Raha, went in steep decline. Similarly, the industrial sector came apart. This is still reflected in the huge deficit in the trade balance: Sudan's imports are greatly exceeding exports.

A Comprehensive Food Security Policy was formulated in Sudan in 2013 with technical support of FAO. This policy is still awaiting official endorsement. It incorporates actions on food security and nutrition policy, identifying players, timings and synergies to already on-going food security-related endeavors. Food security is also addressed in the different policies on agriculture, prepared as part of the Five-Year Plans. With most revenue coming from oil production, agriculture for a long time

was seen mainly in terms of poverty reduction and self-sufficiency and less as growth sector. This was clear from the Five-Year Plan (2004-2008) prepared by Ministry of Agriculture. The Medium-Term Strategy (2004-2006) calls for reviving agricultural development, with significant shift in emphasis and policies in favor of traditional agriculture. The Second Five-Year Development Plan (2012-2016) and the Three-Year Economic Salvation Programs (2012-2014) also emphasize self-sufficiency in staple crops.

In the Agricultural Revival Programs (2008-2014) livelihood improvement and self sufficiency objectives were strongly promoted, but they also advocated agriculture as the engine to effectively contribute to economic growth and export performance. Elaborating on these general policies, a number of specific acts and policies have been issued:

4. The Gum Arabic Act of 2009 liberalized trade and has had a major impact on improving production and benefits to smallholder farmers. Yet, the Gum Arabic sector is still suffering from government interference.
5. The Seed Act was approved in 2010 to upgrade the National Seed Admin-

istration to ensure plant breeders' rights and provide sound regulation of the seed production chain.

6. The Agricultural and Livestock Professional Organization Act of 2011 replaced existing laws on farmers, producers and pastoral unions and establishes the legal basis for new autonomous producers' organizations.

## Water

The main water policies are the National Water Policy 2000, the National Water Supply and Sanitation policy 2006 and the draft Integrated Water Policy of 2007. Whereas these policies set the overall framework, water is also considered a strategic asset – and not all decisions follow from policy documents. Moreover, there are also other factors that affect the sector. A good example is the Gezira system, the single largest irrigation system in Sudan (and in Africa for that matter). Under international influence a number of reforms were introduced – including the transfer to the Agricultural Department and the hand over to Water Users Associations. These important changes were later revoked – creating an impasse in the management of the mega water systems.

## Climate

In 2006 a National Adaptation Programme was prepared. This was updated

in 2016 following the succession of South Sudan in 2011.

Like other countries in the Greater Horn of Africa, Sudan ratified the UN Convention on Biological Diversity (CBD), the Convention to Combat Desertification (CCD), the Framework Convention on Climate Change (UNFCCC) and the Kyoto and Paris Agreement. Following the latter Sudan also submitted its Nationally Determined Contributions (NDC) – emphasizing low carbon development focusing, among others, on integrating renewable energy in the power system, energy efficiency, afforestation and reforestation and waste management. Climate change adaptation plans focus in particular on agriculture, water and coastal infrastructure and gender. Main priorities are:

- Crop diversification and introduction of improved drought-resistant varieties/early maturing varieties in areas affected by rainfall decrease/variability;
- Agroforestry to enhance agricultural production as well as empower vulnerable communities;
- Water harvesting to assist vulnerable communities to adapt and build resilience;
- Establishment and rehabilitation of hand pumps and construction of water-networks to achieve water security in order to discourage migration from vulnerable areas;

- Creation of buffer zones to accommodate salt marsh, mangroves and sea grass;
- Establishment of women cooperative societies in order to empower them and increase their resilience;
- Enhance adaptive capacity including through establishment of rural women development program.

## Renewable energy

The National Strategic Plan for Sudan, prepared after the signing of the Comprehensive Peace Agreement (CPA) provides a framework for the country's peace and development efforts. It gives priority to the construction of electricity distribution networks and rural electrification projects to promote sustainable economic development, as well as capacity building within institutions.

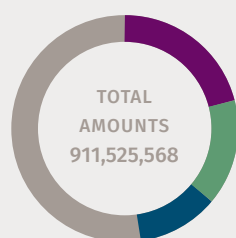
More specific on renewable energy, the Sudan Renewable Energy Master Plan was drafted in 2005 in an effort to promote the use of renewable energy sources, including priority projects such as PV installations and biomass co-generation. This was done so as to avoid dependence on petrol-based energy. There are attempts on-going to conclude contracts in other renewable energy types such as wind. Some Nordic companies are involved.

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# Donor interventions and plans

## Top 3 donors (based on 2017 IATI data<sup>1</sup>)

DONOR	AMOUNT (IN \$)
United Nations World Food Programme (WFP)	171,573,000
United Nations Development Programme	136,162,000
EU Institutions	114,226,000



## Top 3 Sectors attracting development funding in 2017

SECTOR	AMOUNT (IN \$)
Emergency response	371,058,000
Population policies / programmes and reproductive health	97,003,400
Unallocated / unspecified	95,047,800

Due to the Darfur crisis and arrest warrant for the President by the International Criminal Court, donor interventions for a long time have been relatively modest in Sudan, especially given the size of the country, its still widespread poverty (165 on the Human Development Index and Food Security Ration of 34,6) but also its potential. The World Bank operations have been relatively low-key for instance. One of the bottlenecks to engage in new lending are the unpaid debts on earlier loans, amounting to a substantial sum (in excess of 40 B USD).. These arrears rule out new loans from the World Bank Group.

Several of the Nordic donors are active in Sudan – with programs increasing in the last few years. In particular GIZ is working on a substantial vocational training program with emphasis among others on agricultural skills. DFID and EU are supporting watershed and dry land programs. The focus in all these programs is on areas where a large proportion of Sudan's poor population is living and working on making better and more sustainable use of the resource base. JICA is active on domestic water supply projects. For an overview of regional and national program related to climate and environment further reference is made to the Climate Change Profile for the Greater Horn of Africa<sup>2</sup>.

Another source of external development funding is from Arab donors (such as the Islamic Development Bank, Kuwaiti, UAE funds) and investors. In the country is the financial support of the Kingdom of Saudi Arabia in the shape of capital injections to the Central Bank of Sudan.

There are also projects and loans from Turkey and Qatar. These often have a strong business element in them. The Arab Authority For Agriculture Investment And Development for instance is an independent multilateral financial institution established in 1976 in Sudan with the vision of achieving food security in the Arab World. AAAID engages in a range of Agricultural Investment activities including plant processing, animal production, agricultural processing and other related activities. The larger part of its investment (63%) is in Sudan.

<sup>1</sup> This data originates from self-reported data in IATI by major donors. It should be noted that not all aid flows and financial sources are captured.

<sup>2</sup> Warner, Kadi (2018, draft). Climate Change Profile: Greater Horn of Africa. For Ministry of Foreign Affairs/IGG.

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# What NL actors already do

## Major commitments from the Netherlands (based on IATI)

BUDGET SPENT BY NETHERLANDS MINISTRY OF FOREIGN AFFAIRS (IN 2017)	AMOUNT (IN \$)
Population policies / programmes and reproductive health	1,917,580
Conflict prevention and resolution, peace and security	1,845,510
Government and civil society, general	571,850
BUDGET SPENT BY NETHERLANDS ENTERPRISE AGENCY (IN 2017)	AMOUNT (IN \$)
Basic health	294,850
Agriculture	138,560
Industry	11,953

## Top largest programmes supported by the Netherlands (active as of 2017)

THEME	ORGANISATION	PROGRAMME TITLE	COMMITTED (IN \$)
Basic drinking water/ water sector policy	ZOA – with the Netherlands Ministry of Foreign Affairs, EU and DfID funding	Water for Three States (W4TS)	More than 50 million
Basic drinking water/ water sector policy	ZOA – DFID funded	Sustain Darfur	18,000,000
Democratic participation/ government administration/ womens equality	CARE Nederland	Every Voice Counts - Strategic Partnership (also in 6 other countries)	2,897,510
Population policy and administration	Netherlands Ministry of Foreign Affairs / UNDP	Livelihoods Refugees White Nile	1,917,580

The engagement of Dutch supported programs in Sudan has been modest, especially compared to the period 1970-1990. A small number of programs are in place in Sudan, making mainly use of private sector development instruments. Most of these operate in the agricultural sector.

Prominent are the establishment of a peanut processing factory Darfood under PSI, that works with 7000 outgrowers in El Daein, East Darfur. An important outlet for the Al Qaim peanut butter factory is the humanitarian market.

Another PSI funded program centres on the organic value addition of Gum Arabica. A third project has introduced improved potato varieties. All these projects have – irrespective of their size – had good impact and have contributed to the general good reputation of the Dutch Agricultural Sector. This is reinforced by the presence of a larger number (approximately 50) of representatives of Dutch agro-food sector companies – in dairy, poultry, processing equipment or seed supply. There is considerable potential for private sector investment in Sudan, for instance in the milk industry, seeds and fertilizers.

In the water sector there is similarly a long and positive engagement – partly related to long standing Dutch support to the Nile Basin Initiative and partly outside this. The Embassy has helped to bring together stakeholder around water management

in Eastern Sudan, in particular in the Gash Area with a number of small studies commissioned. This has contributed to the development of EU supported Regional Development Project in Kassala and Gedaref States – with Dutch funding amounting to 25% of the Euro 3 Million programme, focussing very much on the value chains (fishery, sorghum, vegetables). This program is about to be approved. There is also long term co-operation between some major water resource knowledge providers and key institutes in Sudan, such as the Hydraulics Research Centre, The cooperation extends from water harvesting, through the management of mega-irrigation systems to modelling of the Nile flows. A number of Dutch organizations operate in Sudan within the context of different development programs on flood based farming, groundwater, integrated water resource management in dry areas and water harvesting around IDP return areas. Under the CCP program a landscape program was formulated in Kordofan that had elements of waste water treatment and climate smart housing but the program was never followed up. FMO has invested in a consortium for the drinking water plant Al Manara Water Facility in Omdurman; an interesting example of developing drinking water services in Khartoum State.

In addition to the above, Netherlands Red Cross just started a project on climate change adaptation in partnership with others, under EU-funding.

# Trends and limitations



## Water

Sudan presents a mixed picture in terms of water availability and water scarcity. Often portrayed as one of the few existing frontiers for new irrigation development and agricultural expansion, predictions are that the fast growing population may catch up with the unused potential in the coming decades, particularly if one takes into account the larger number of person even now living in Sahellian water scarce conditions. Ministry of Water predictions suggest that by 2027 Sudan will need 42 billion m<sup>3</sup> per year, 40% more water for food, people and livestock than it has available (30 billion m<sup>3</sup>). The windfall gain of new Grand Ethiopian Renaissance Dam (see next) will only cover at most 6 billion m<sup>3</sup>. The rest needs to be imported in terms of food. On top of that, much of the irrigated crops are actually cash crops and fodder, part of which are exported in exchange for more imported food.

Sudan holds a pivotal position in the water use of the Nile, being positioned just upstream of Egypt at the confluence of the Blue and White Nile. Under the 1959 Nile Waters Agreement between the Sudan and Egypt the entire average annual flow of the Nile was shared among the Sudan and Egypt, at 18.5 and 55.5 billion m<sup>3</sup> with another 10 billion m<sup>3</sup> allocated for evaporation

from High Aswan Dam. Future projects (like the reclamation of the Sudd) or claims by other riparian country would be accommodated equally.

So far Sudan has not been using its full share (currently 7 billion m<sup>3</sup> remain unused), but it may do so in the future. The major development in the Nile is the Grand Ethiopian Renaissance Dam (GERD) project on the Blue Nile in close proximity to the Sudanese border. The construction of the dam has been welcomed by Sudan – it even sent equipment to Ethiopia to be used in water projects. The downstream effect of the dam for Sudan is diverse. It creates additional storage, regulates the flows, but as a minus also will also in Sudan affect the flood based systems (inundation canals in particular) that were served at time of high flows. Sudan intends to make use of the water gains from GERD.

In March 2015, the political leaders of the three riparian countries signed a framework cooperation deal on the GERD. The three countries jointly commissioned a technical report related to the impact of the dam by French consultant companies. This has not yet brought unity to three parties and an escalation into a hidden or open conflicts (including supporting

discontent) is still possible.

Outside the Nile the agriculture is rain-fed. The bulk of this agriculture (in the sandy plains of Kordofan and East Darfur, and in the clay plains of Gedaref) is without any water conservation practice. Floodwater harvesting and runoff interception (with terraces) is probably applied on less than 20% of total cropland. There is potential for expansion of better agricultural water management, in particular in on-field water conservation.

## Agriculture

In the past ten years Sudan has been giving out leases to foreign investors, in particular from richer and water short countries such as Saudi-Arabia, Jordan and UAE. Sudan also signed an agricultural cooperation agreement with Beijing which gives Chinese companies several options to operate in Sudan.

An example of such an FDI project is the Upper Atbara Irrigation Project where the agricultural procurement agency of Saudi Arabia plans to invest close to 1 billion USD for the development of a 120,000 ha of irrigation system. In return the Government of Sudan

# Trends and limitations



FOOD

will receive 20% of the annual farm proceedings. The duration of the leasehold is 99 years. Whereas such projects bring revenues for the government, they are not inclusive by design: they focus exclusively on export and in many cases are operated by contract farms from the investing countries, and there is little recognition on the displacement they cause. Land rights and issues of forced relocation need to be solved before the investment can take place.

There is controversy around these land<sup>3</sup> and water deals. They increase government revenue but do little to lift people out of poverty or water insecurity. They also create hardly any local jobs. Considering the significant portion of the population living in water scarce situations with low resilience, it could amount to an asset foregone. Such arrangements effectively export virtual water, thereby increasing the water stress for the remainder of the country. There is also a need to come to new forms of water management, storing water from wet years for instance by large scale groundwater recharge to be used during dry cycles. In terms of water governance, efforts are needed to ensure equal access to water resources.

## Climate and energy

Sudan is – according to the ND-Gain Index 7th most vulnerable country to effects of climate change, and the 14th least prepared country. There is general consensus on the temperature rise that can be expected (0.5 – 3 degrees Celsius)<sup>4</sup>. There is some difference of opinion on the impact in terms of droughts and precipitation. The IPCC predicts a slight increase in rainfall (4% per decade), but other detailed analysis focuses on long-term fluctuations in rainfall, which predicts the return of a new cycle of reduced rainfall in the Sahel in the near future<sup>5</sup>. This more detailed analysis is based on an understanding of the long term Atlantic oscillation that brings strong dry winds from the Balkans to Sudan. These strong dry winds push back the moist air and clouds that arrive from the South. These originate from the West Coast of Africa and are transported in about three so-called precipitation cycles of rainfall and new cloud formation travelling down wind and northwards. Deforestation and the hardening of the earth's surface however have reduced the moisture content of the land that was driving this weather effect. Under this analysis the future may hold more droughts for the entire Sahel and isohyets could be pushed southwards, undoing the partial greening that the Sahel has seen since about 1995.

The increased temperature has considerable impact on some of the main rain-fed staples, In Kordofan, Sudan, both millet and sorghum production is predicted to decrease by 2060 due to increased temperatures and more variable rainfall. Potato cultivation is also predicted to become nearly impossible in the near future as winter temperatures increase beyond the feasible bandwidth for the crop.

Climate change acts as a threat multiplier amplifying pre-existing vulnerabilities such as food insecurity and political instability. In spite of its ample water resources, Sudan is vulnerable to climate change because of the large percentage of Sudan's population that rely on rain-fed agriculture and livestock as their primary source of livelihood. There is concern that the isohyets are moving southwards.

3] Taham M.E, (2016), Land use, ownership and allocation in Sudan. Sudan Transparency Initiative.

4] Ministry of Foreign Affairs (2018, draft). Climate Change Profile: Greater Horn of Africa. The Hague: Ministry of Foreign Affairs/IGG.

5] Personal communication Dr T. Gaasbeek (ZOA Sudan).

# Ranking of main result areas

Based on the assessment above a number of directions emerged. These are described below in short taglines. The main consideration is to have programmatic directions that work directly on the structural challenge of Sudan: the risk of marginalization of poor rural population from the new agricultural opportunities that are being developed, the need to provide economic opportunities for youth, the demand for capacity building at different levels, the overall weak governance and integrity, the need to increase resilience against drought and economic migrants.

## 1. Promote inclusive agricultural value chains, making use of relevant smart Dutch agricultural technology and management systems

This would introduce better techniques and improved value chains, engaging for instance out growers (as in the PSI peanut projects) and creating the skill sets for productive employment. This may also require a dialogue on investment climate, as Sudan ranks low on Doing Business indicators.

## 2. Developing inclusive models for export-oriented agri-business

This would require partnership with some of the large foreign investment agricultural investment programs and develop the opportunities for inclusive development in supply chains and in job creation. It may seek cooperation with vocational level capacity building (as under the GIZ program). It would require a gradual shift from the current closed development of export agriculture, seeking probably also partnership with some of Sudan's own most promising agri-business.

## 3. Support to long-term water strategic water policy

Whereas a water shortage is predicted on the strength of a growing population and economy, high potential land is at present given on long-term leases – excluding future Sudanese farmers from benefitting from these resources. The current compulsion towards these long-term land and water leases need to be balanced against other imminent requirements. Building on the long-term cooperation between high level Sudanese and Dutch water expertise, a policy process at cabinet level could be supported – to assess the different water futures.

## 4. Rehabilitating the large-scale small holder irrigation systems

There are several large-scale irrigation systems in Sudan, operated by smallholder farmers. The Ghezira system at close to 1 Million ha is the prime example. It is the largest single irrigation system in Africa and could in principle be an example of mega smallholder based water system. However, its water productivity is very low, after a series of confusing institutional changes. Systematic support could improve the management of such agricultural schemes, improving smallholders' incomes and security, generating government revenue and contributing to environmental goals and water productivity. The same holds true for other large irrigation systems, similar to the Gezira model, such as Rahad (100,000 ha, Suki (40,000 ha), and New Halfa schemes (200,000 ha). Support should be given to the rehabilitation of these systems, connected with the overall overhaul of infrastructure in the country (railways, river transport, cotton ginneries).

## 5. Climate management programs investing in restoration of regional climate cycles

Following the analysis of the risk of drought in Sudan (see section

on Trends and Limitations) there is need and opportunity to manage the regional climate, in particular by restoring and reinforcing the climate sub cycles conveying precipitation from the South. Such an approach would go beyond single-dimension climate adaptation programs, but would try to influence the local and regional climate by careful understanding of land-climate interactions in the region and sustaining precipitation recycling, which carries moisture coming from the West African coast further upwind,

This would work together with programs on re-greening and water harvesting that would optimize the recycling effect. Such programs should introduce new large scale practice as yet unknown in Sudan such as managed natural revegetation, water harvesting with roads or pasture improvement or promote activities that have proven success in relatively limited locality such as community forests. Where possible, links should be made with new business models.

Co-operation could be sought with the programs formulated earlier under the Climate Change Program or under the Nationally Determined Contributions of the Paris Agenda. As part of these NDC 20 projects were formulated – only some of which are under implementation.

## 6. Promoting household energy security with solar energy

At present a large portion of the population in Sudan is energy insecure – with 45% of the population having access to electricity. The balance 55% of household includes large numbers of people in distant areas. Promoting solar energy at household level through local small business and micro financing as is done in Kenya for instance would reduce this inequity and would also contribute to local job creation.

## 7. Entrepreneurship promotion in water services

There is large unemployment in Sudan and at the same time 41% of the population has no access to basic water service. There is considerable scope to create jobs in providing vital services in local WASH systems, be it well development, drinking water systems development, sanitation systems, small town reverse osmosis plants. The strength of small private sector initiative is seen elsewhere in Sudan and should be encouraged in local water services too. Stimulating entrepreneurship is important in almost every sector and a connection should be made between local business development in WASH and vocational skills training

# Ranking of main result areas

In the table these six suggested directions are placed against the (sub) results areas for Inclusive Green Growth.

In the last column a short narrative is given to explain the connection.

FOOD AND NUTRITION SECURITY	SUGGESTED DIRECTION	DESCRIPTION
Reduced malnutrition	<b>Inclusive agricultural value chains</b>	Use modern agricultural breakthroughs to foster inclusive growth, with attention for those most vulnerable
Promote agricultural growth	<b>Rehabilitating the large-scale small holder irrigation systems</b>	Making use of the vast irrigation assets to improve income of small holders in these systems
Create ecologically sustainable food systems	<b>Climate management programs</b>	Making better use of opportunities to store water during wet cycles or rainy season to help reduce the predicted future water deficit
Better governance for food and nutrition security	<b>Inclusive models for export-oriented agri-business</b>	Assuring that the current foreign investment in water resource utilization has a larger local impact in terms of job creation and local sourcing
WATER	SUGGESTED DIRECTION	DESCRIPTION
Improved water resources management	<b>Support to long-term water strategic water policy</b>	Better long term alignment of Sudan's socio-economic development challenges with use of currently underutilized water resources
Transboundary river basins management	<b>Support to long-term water strategic water policy</b>	Placing Sudan's water development strategy in the context of the use of Nile waters
Increased water productivity	<b>Rehabilitating the large-scale small holder irrigation systems</b>	Taking steps at farm and system level to increase water productivity dramatically in the long neglected irrigation systems
Access to safe drinking water and sanitation	<b>Entrepreneurship promotion in water services</b>	Stimulating local enterprise to address the WASH gap and have it as a business opportunity
CLIMATE* / RENEWABLE ENERGY	SUGGESTED DIRECTION	DESCRIPTION
Access to renewable energy	<b>Promoting household energy security with solar energy</b>	Making use of the abundant solar energy potential by stimulating local business service provision
Sustainable forestry management and related practices	<b>Climate management programs</b>	Well considered greening and forest protection is important in keeping local precipitation cycles active in conveying moisture northwards to Sudan

\* The result areas under climate are partly integrated in the resilience components under the Water and Food and Nutrition Security results areas.

# Colofon

**Country profile:** This country profile is part of a series of 12 countries in the Sahel, Horn of Africa, and MENA regions, covering per country the themes of Food & Nutrition Security, Water, Climate and Renewable Energy. Commissioned by the Netherlands Ministry of Foreign Affairs (Department of Inclusive Green Growth, IGG), and implemented by Wageningen Centre for Development Innovation (WCDI), as part of the Support Facility of Food & Nutrition Security.

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Frank van Steenberg (MetaMeta)

**Design:** <http://rco.design>

## Methodology

These country profiles are considered a first reconnaissance for IGG in countries that currently do not have bilateral programmes on food, water, climate or energy. As a consequence, the design of these profiles is light and pragmatic. The consultants based these country profiles primarily on focus group discussions and interviews with staff of the Ministry of Foreign Affairs, Ministry of Agriculture, and RVO.

This data was augmented by interviews with country experts, databases from UN and World Bank Group, and IATI (a voluntary, multi-stakeholder initiative aiming to improve the transparency of aid and development resources. The Netherlands is committed to sharing data on its programmes and target areas in IATI).

Based on this data, the consultants offer for each country several result areas for consideration. These should be seen as general directions towards possible actions which (1) are needed and requested by the

country, (2) are complementary to what others are doing already, and (3) present an opportunity to cooperate on areas of Dutch expertise and interest. These possible result areas are not recommendations for specific programmes to be developed.

## Thank you

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## Documents consulted

Besides internal Ministry of Foreign Affairs documentation and public documents from other agencies (such as WBG, EC, FAO, WFP, USAID, DFID), specific references are footnoted in the text.

## Sources for metrics

**General country statistics:** sourced from CIA World Factbook, UNFPA, UNDESA, IMF, and Wikipedia.

**Human Development:** UN Human Development Index (2016)  
[www.hdr.undp.org/en/countries](http://www.hdr.undp.org/en/countries)

**Anti-corruption and Accountability:** Africa Integrity Indicators [http://aii.globalintegrity.org/scores-map?stringId=access\\_information\\_openness&year=2017](http://aii.globalintegrity.org/scores-map?stringId=access_information_openness&year=2017)

**Doing Business:** WBG Doing Business Index  
<http://www.doingbusiness.org/>

**Gender Inequality:** Gender Inequality Index  
<http://hdr.undp.org/en/content/gender-inequality-index-gii>

**Population 2018** estimate <http://worldpopulationreview.com/countries/>  
**Population 2050** projection UNDESA 2017  
[https://esa.un.org/unpd/wpp/Publications/Files/WPP2017\\_KeyFindings.pdf](https://esa.un.org/unpd/wpp/Publications/Files/WPP2017_KeyFindings.pdf)

**Hunger:** Global Hunger Index (IFPRI) <https://www.ifpri.org/publication/2017-global-hunger-index-data>

**Food security:** Global Food Security Index (Economist) <http://foodsecurityindex.eiu.com>

**Land management:** Land Management Index (UNCCD) [https://global-land-outlook.squarespace.com/s/Preliminary-draft-scoping-paper-fro-LMI\\_May-2017.pdf](https://global-land-outlook.squarespace.com/s/Preliminary-draft-scoping-paper-fro-LMI_May-2017.pdf)

**Renewable water resources:** FAO AquaStat <http://www.fao.org/nr/water/aquastat/main/index.stm>. We calculated the Variation in per capita internal renewable water resources, by comparing the total internal renewable water resources per capita in 2014 (m<sup>3</sup>/inhabitant/year) with same values in 2007.

**Drinking water:** World Bank Drinking Water Index <https://data.worldbank.org/indicator/SH.H2O.SMDW.ZS>

**Electrification:** World Bank ESMAP Electrification Index <http://rise.esmap.org/>

**Climate change vulnerability and readiness:** ND GAIN Index <https://gain.nd.edu/our-work/country-index/>

**IATI:** <http://d-portal.org/> and <https://www.iatiregistry.org/>