

KEY ACTIONS AGAINST CLIMATE CHANGE IN THE SECTORS ENERGY AND AGRICULTURE IN TOGO



<http://www.undpcc.org/en/togo>

The sale and use of firewood for cooking is an important issue that is being addressed in Togo and other countries in the region.
Photo: <http://www.jardin-en-herbes.org/parteneriat-togo.htm>

→ More than US\$ 688.36 million are required in Togo by 2030 to implement priority actions to reduce greenhouse gas emissions in the energy sector and to adapt to climate change impacts in the agriculture sector. According to a national assessment of investment and financial flows (I&FF) completed in November 2010, most of these funds are needed in the subsector petroleum products to implement a policy of economic and environmentally friendly transport and for the promotion of biofuels.

In the agriculture sector, the three main areas that require sustained investment efforts to adapt to climate change are water management (US\$ 9 million by 2015), plant protection (US\$ 8 million by 2015) and improvement of soil quality (US\$ 6 million by 2015). Within the years 2015-2030, for water management US\$ 24 million are required, US\$ 18 million for plant protection and US\$ 13 million for improvement of soil quality, the total additional investment needed up to 2030 are estimated to be US\$ 72 million.

For the energy sector, considerable efforts will be needed especially in the subsector of petroleum products. While during the first two years considerable investments of around US\$ 70 million will be needed, a decrease of costs is expected after 2030. Before 2030 however no cost reductions are expected in the sector.

Climatic constraints are one of the main factors limiting the socio-economic development of Togo. With the information of the assessment, the Government of Togo is

now well placed to enhance sectoral policies and national budgetary planning as well as discussing the real costs of climate change in international negotiations on climate change. The work was conducted as part of a global UNDP project, "Capacity Development for Policy Makers to Address Climate Change", in which 20 countries participate. The project is funded by the governments of Norway, Switzerland, Finland, UNDP and the UN Foundation.

Selection of key sectors

The **energy** sector is a key source of greenhouse gas (GHG) emissions. It should also be noted that emissions of greenhouse gases in the energy sector are growing very quickly, they have increased by 130% in Togo over the period 1992-1998. Over 95% of GHG emissions from the energy sector are related to burning of fossil fuels and biomass. Therefore, it is essential to take climate change into account when implementing programs and projects in the energy sector in Togo.

Agriculture in Togo is mainly rain fed, and considered unproductive for structural reasons as well as climatic reasons due to natural and soil constraints. The agriculture sector was selected as a key sector for adaptation to climate change in Togo due to its vulnerability to climate change and secondly for its substantial contribution to the national GDP (38%) and the share of the workforce in this sector (66%).

Institutional arrangements

The I&FF assessment on mitigation in the energy sector was carried out by a multidisciplinary team comprising an economist, team leader, a forest manager, a statistician as well as energy experts. Besides governmental agencies, the work was conducted in collaboration with the Electricity Company of Togo (CEET), the Energy Company of Benin (CEB), the Regulatory Authority for the Electricity Sector (ACSO), the Union of Workers and Farmers of Wood and

Related Activities Togo (SYTREBACT), the Togolese League of Storage (ETS) the Togo Company of Storage in Lomé (STSL) and the Group of Oil Professionals (GPP). Also documents from international agencies such as UNDP, the International Atomic Energy Agency (IEA) and the European Union have been consulted.

Similarly, in the agriculture sector the I&FF assessment was conducted by a multidisciplinary team consisting of an economist, a team leader, an agronomist, a forest manager, a statistician and an economist. This team has worked in collaboration with the project coordination unit and various government agencies (including the Department of Statistics, Informatics and Documentation, the Department of Agriculture, the Planning Ministry etc.), as well as with the private sector and civil society organizations that are active in the agriculture sector in Togo. International organizations such as UNDP, FAO and the European Union have been consulted as required during the data collection.

The organization Environment and Development in the Third World (ENDA) has been supporting the national team as a Regional Center of excellence, through a training on the I&FF methodology and by ongoing technical support throughout the assessment process.

ASSESSMENT OF INVESTMENT AND FINANCIAL FLOWS

Objectives of the Investment and Financial Flows Assessment

The overall objective of the I&FF assessment is to determine the extent and sources of funds needed to address climate change at the national level, and builds directly on national government strategies, plans and programmes. In essence, the assessment seeks to answer the question: *From a development perspective, what can my country do to address climate change in selected key sectors, and what level of financial contributions will be needed to achieve these objectives?*

In this context, the I&FF team examined the following questions:

- What are the main adaptation / mitigation measures for the selected sectors in the next 25 years?
- Who is investing in the sector / Who are the main stakeholders and sources?
- What changes / increase in I&FF will be needed in the sectors?
- What additional I&FF are needed to address climate change?

The I&FF assessment covered the time period 2005-2030, using a baseline scenario and a reference scenario. Values are given in constant 2005 US\$ (US\$ 1 = 450 CFA). Once the incremental I&FF needed are determined, the political implications are analyzed, following the question how the necessary changes can be induced. These questions are evaluated for each of the investment entities: Households (families), private sector (NGOs and private companies) and the government as the third investment entity.

For the energy sector (mitigation of greenhouse gas emissions)

The national expert team has determined that US\$ 521.60 million are needed by 2030 to reduce greenhouse gas emissions in the energy sector, through the implementation of priority actions including a policy of economic and environmentally friendly transport (US\$ 1.93 million) and promoting the use of butane gas as a substitute for traditional energy (US\$ 22.10 million). The reduction of GHG emissions in the energy sector will be reached through a number of measures:

- Decreasing use of traditional energy in Togo (US\$ 2.22 millions);
- Promoting the use of butane gas as a substitute for traditional energy (US\$ 22.10 million);
- Capacity development for the Ministry of Energy and Environment (US\$ 1.16 million);
- Promotion of renewable energy in Togo (US\$ 443.33 million);
- Implementation of energy efficiency standards (US\$ 73.33 million);
- Rural electrification through the installation of micro-dams (US\$ 4.73 million);



“The assessments of Investment and Financial Flows in the key sectors agriculture and energy in Togo led to an indispensable tool for guiding policy makers on financial needs for adaptation and mitigation in the two sectors.

There is full ownership of this tool by the authorities and development actors in Togo, and it enables them to integrate adaptation to and mitigation of climate change with a proven knowledge on national financial needs (Investment Flows) and funds to be sought from international funding partners (Financial Flows).

The results of the I&FF assessment are also an excellent tool for negotiators in the Togolese international negotiations on climate change, including the necessary funds for adaptation and mitigation in the Least Developed Countries (LDCs). Such assessments across all LDCs would be welcome to respond comprehensively to the needs of these countries to ensure implementation of adaptation and mitigation measures to climate change”

Komi Tomyebe, National UNFCCC Focal Point and National Project Focal Point.

- Promotion of biofuels (US\$ 0.73 million); and
- Establishing a policy of economic and environmentally friendly transport (US\$ 1.93 million).

For the agriculture sector (adaptation to the impacts of climate change)

The I&FF assessment on the agriculture sector focused on crops, livestock and fisheries. US\$ 166.78 million are needed to protect agriculture against the impacts of climate change. For the agriculture sector to adapt to the adverse effects of climate change, a number of actions are promoted. Among these are:

- Integrated water management (irrigation, hydro farms etc.) (US\$ 34.62 million);
- Production of improved seeds (US\$ 8.59 million);
- Conserving and restoring soil quality (amendments, water and soil conservation, conserving soil fertility) (US\$ 23.08 million);
- Improving the agro-meteorological information system and enhancing crop calendars (US\$ 0.59 million);
- Plant protection (US\$ 24.44 million);
- Improving agricultural practices (US\$ 11.89 million);
- Developing breeding species that are more resistant to climate conditions (US\$ 22.14 million);
- Epidemiological surveillance (US\$ 6.00 million);
- Development of fish farming (aquaculture and fishing) (US\$ 10.10 million); and
- Management of mangroves (US\$ 2.43 million).

EVALUATION OF POLICY IMPLICATIONS

For the energy sector (mitigation of greenhouse gas emissions)

- Most investment efforts are needed for the subsectors biomass and petroleum products. The investment estimates for the petroleum products amount 94.61%. This percentage is much higher than for the biomass with 4.44% and electricity with 0.75% of the investments needed. The high rate of expected investments in the petroleum sector is due to the fact that the mitigation measures in this subsector take into account the rehabilitation of road and railway infrastructure, which requires large investments.
- More investment will be needed in the biomass subsector during the first ten years. But after these ten years, there will be less investments needed to reduce GHGs.
- The investment flows for the reference scenario in the subsector electricity will grow slightly during the first fifteen years. But after this period the growth will be higher until 2030.
- Unlike in the biomass subsector, most investments in the electricity subsector are to be realized in the first two years. This is due to the efforts already made in the reference scenario. In terms of additional investment, the mitigation scenario will only require incremental investments during the first two years.

SUMMARY TABLES OF INCREMENTAL INVESTMENT COSTS

Table 1 : Cumulative discounted IF and FF for all Investments in each sector, by investment entity and funding source.
Incremental cumulative (2005-2030) discounted sectoral Investments (million 2005 US\$)

Investment entity	Funding sources		Energy sector (Mitigation)		Agriculture sector (Adaptation)	
			ΔIF	ΔFF	ΔIF	ΔFF
Households	Equity and debt		108.21	72.44	7.73	0.40
	External		302.49	12.49		
	Total Household Funds		410.70	84.93	7.69	0.40
Corporations	Domestic	Domestic equity (including internal cash flow)	-21.06	-38.14	8.12	0.69
		Domestic borrowing (bonds and loans)			8.39	6.18
		Total Domestic Sources			16.37	6.74
	Foreign	Foreign direct investment (FDI)	5.30	10.27	8.39	8.83
		Foreign borrowing (loans)			8.39	6.18
		Foreign aid (ODA)			8.25	4.59
		Total Foreign Sources			25.03	19.60
	Total Corporation Funds		-15.76	-27.87	41.40	26.34
Government	Domestic	Domestic funds (budgetary)	52.58	16.96	8.12	6.27
	Foreign	Foreign borrowing (loans)	0	0	8.12	8.95
		Bilateral foreign aid (bilateral ODA)			42.64	5.41
		Multilateral foreign aid (multilateral ODA)			58.88	20.63
	Total Foreign Sources		0	0	-37.83	-47.49
Total Government Funds		52.58	16.96	66.94	24.02	
Total (all investment entities and all sources)			447.52	74.01	116.03	50.76

IF= Investment Flow, FF= Financial Flow
ΔI&FF = incremental changes of Investment and Financial Flows
Source: National I&FF assessment

For the agriculture sector (adaptation to the impacts of climate change)

- Adaptation measures in the agriculture sector require additional investments for each of the measures analyzed. The modeling performed for the reference and the adaptation scenario, suggests that the additional amount required to address climate change in the agriculture sector in Togo amount to US\$ 117.21 million by 2030.
- The current trend of investments in the agriculture sector, judging by the strategies and policies implemented, shows growing investments, but does not sufficiently take into account aspects of adaptation to

climate change in the sector.

- Compared to the policies and strategies that are already in place that have a time horizon up to 2015, an annual growth rate of at least 6% and additional investments of US\$ 31.5 million are required to take into account adaptation to climate change in the agriculture sector.
- The review of existing policies revealed the necessity of all stakeholders to take into account climate change. The current agricultural development policy does not yet adequately address adaptation issues despite the determination of the government to make agriculture the engine of the economy and to reach sustainable agriculture practices.

**Table 2 : Annual IF and FF for All Investments in Each Sector.
Incremental Annual Sectoral Investments (million 2005 US\$)**

Year	Energy sector (Mitigation)		Agriculture sector (Adaptation)	
	Δ IF	Δ FF	Δ IF	Δ FF
2005	52.03	15.37	-0.85	-0.71
2006	50.70	14.46	-1.97	-1.09
2007	50.33	14.24	-3.16	-1.37
2008	21.39	4.29	3.07	2.56
2009	21.00	4.07	3.28	2.62
2010	18.32	3.36	3.39	2.57
2011	18.29	3.20	3.50	2.51
2012	13.39	1.52	3.63	2.46
2013	13.28	1.47	3.76	2.41
2014	13.18	1.42	3.90	2.36
2015	11.84	1.30	4.06	2.32
2016	12.60	1.24	4.52	2.56
2017	12.49	1.18	4.70	2.51
2018	12.37	1.11	4.90	2.46
2019	12.26	1.05	5.10	2.42
2020	10.58	0.91	5.32	2.37
2021	11.55	0.83	5.56	2.33
2022	11.40	0.75	5.81	2.29
2023	11.25	0.67	6.07	2.26
2024	11.10	0.57	6.35	2.22
2025	9.47	0.47	6.65	2.19
2026	10.71	0.37	6.97	2.16
2027	10.47	0.26	7.30	2.13
2028	10.19	0.13	7.66	2.10
2029	9.82	0.003	8.04	2.07
2030	7.49	-0.14	8.45	2.04

IF= Investment Flow, FF= Financial Flow
 Δ I&FF = incremental changes of Investment and Financial Flows
 Source: National I&FF assessment



Knowledge Platform

The project website (www.undpcc.org) contains information on activities in Togo, the I&FF methodology, and many other resources in English, French, Spanish and Russian.

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More information on activities in Togo

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