



Jemal Musa (on right) showing the maize yields he has achieved using conservation agriculture techniques.
Photo: Irish Aid

ETHIOPIA CLIMATE ACTION REPORT FOR 2016

Resilience and Economic Inclusion Team | Irish Aid | November, 2017

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COUNTRY CONTEXT

Ethiopia is the second-most populous country in Sub-Saharan Africa with an estimated population of over 100 million, and population growth rate of 2.5% (2015), 80% of whom live in rural areas. Geographically, Ethiopia is a landlocked country covering 1,104,300 km² with extreme climatic diversity ranging from equatorial rainforest in the south, to the desert-like conditions in the northeast. Ethiopia has a diverse topography, with elevations ranging from 126m below sea level and mountains exceeding 4,500 m. The majority of Ethiopia's population inhabits rural highland areas, due in part to greater rainfall.

Over the last decade, high economic growth and enhanced pro-poor investments have helped reduce poverty in both urban and rural areas. Since 2005, 2.5million people have been lifted out of poverty, and the share of the population below the poverty line fell from 39% in 2004/05 to 26% in 2012/13. However, according to the International Monetary Fund (IMF) 2016 country report, Ethiopia's macroeconomic outturn since 2015/16 has been adversely affected by a severe drought and the weak global economic environment. As a result, output growth is estimated to have slowed down. The Notre Dame Global Adaptation Initiative (ND-GAIN) Index ranks Ethiopia as the 36th most vulnerable and 40th least ready to adapt to climate change, of the countries it covered for 2015.

Ethiopia has a vision to become a middle-income country by 2025 and is implementing its Climate Resilient Green Economy (CRGE) Strategy to underpin this ambition and to strengthen its capacity to adopt to the effects of climate change. Reducing vulnerability to climate change risks and shocks as well as increasing adaptive capacity will be key for Ethiopia as climate related disasters increase. The recently adopted second Growth and Transformation Plan (GTP II) acknowledges that in the long term, if climate change is not tackled, growth itself will be at risk.

Country Statistics



Population 2016 (est.)¹:
102,403,196



Income (GNI) per
capita 2016²: \$660



HDI Rank 2016³: 174
out of 188 countries



Vulnerability Rank
2015⁴: 147 out of 182
countries



Climate Risk Index
2105⁵: 66 out of 187
countries



Map of Ethiopia: Irish Aid

¹ <http://data.worldbank.org/country/Ethiopia>

² <http://data.worldbank.org/indicator/NY.GNP.PCAP.CD?locations=ET>

³ <http://hdr.undp.org/en/countries/profiles/ETH>

⁴ <http://index.gain.org/country/ethiopia>

⁵ The CRI indicates a level of exposure & vulnerability to extreme events, which countries should understand as warnings in order to be prepared for more frequent and/or more severe events in the future
<https://germanwatch.org/en/download/i64u.pdf>

Overview of Climate Finance in Ethiopia in 2016

In 2016, Ireland provided a total of € 14,178,725 to Ethiopia in climate finance through its bilateral aid programme. In addition, Ireland provided € 1,886,257 in 2016 in climate finance to projects in Ethiopia through its civil society programme. Climate relevant expenditure provided by Irish Aid to civil society organizations in 2016 was Rio marked and accounted for systematically for the first time, in cooperation with the project partners themselves. Projects funded directly by Irish Aid under the bilateral aid programme include the Productive Safety Nets Programme, improving livelihoods and resilience through climate smart agriculture, support for rural livelihoods through dissemination of energy efficient cookstoves, and the promotion of sustainable community based seed production systems. Civil Society partners Concern, Trocaire, GOAL, Self Help Africa, Misean Cara, and Vita are helping to build resilience to climate change through a wide range of projects including improvement of the asset base, resilience, and inclusion of the extreme poor; increasing community access to and quality of water, sanitation and improved hygiene practices in targeted communities; and reducing hunger and poverty and promoting economic development by increasing smallholder production and return from enterprises. More detail is provided on these projects on pages 13 to 26, with methodology behind these figures available in the Annex to this report.

	Bilateral €	Civil Society
Climate Finance Adaptation (UNFCCC)	13,244,000	1,575,574
Climate Finance Mitigation (UNFCCC)	934,725	750
Climate Finance Cross-cutting (UNFCCC)	0	309,933
Biodiversity (UNCBD)	6,097,370	1,193,594
Desertification (UNCDD)	5,200,000	1,564,069
Disaster Risk Reduction (DRR)	10,700,000	N/A
Total Climate Finance	14,178,725	1,886,257

Note: Climate Finance, Biodiversity, Desertification and DRR amounts should not be aggregated as some disbursements have multiple co-benefits. A fuller explanation of the marking for climate adaptation, climate mitigation, cross-cutting and co-benefits is set out in the Annex on Methodology.

CLIMATE CHANGE TRENDS AND POLICY FRAMEWORK

RECENT CLIMATE TRENDS IN ETHIOPIA

According to the UNDP climate change country profile, Ethiopia's mean annual temperature has increased by 1.3°C between 1960 and 2006, an average rate of 0.28°C per decade¹. The increase in temperature in Ethiopia has been most rapid in July, August and September at a rate of 0.32°C per decade. Daily temperature observations show significantly increasing trends in the frequency of hot days², and much larger increasing trends in the frequency of hot nights. The average number of 'hot' days per year in Ethiopia has increased by 73 (an additional 20% of days) between 1960 and 2003.

Most of Ethiopia experiences one main wet season from mid- June to mid- September (up to 350mm per month in the wettest regions). Parts of northern and central Ethiopia also have a secondary wet season of sporadic, and considerably lesser rainfall from February to May. The southern regions of Ethiopia experience two distinct wet seasons. The Eastern corner of Ethiopia receives very little rainfall at any time of year.

According to the UNDP country profile, strong inter-annual and inter-decadal variability in Ethiopia's rainfall makes it difficult to detect long term trends. There is not a statistically significant trend in observed mean rainfall in any season in Ethiopia between 1960 and 2006.

The regional models for East Africa also state that over the past half century there has been substantial multi-decadal variability in rainfall. Parts of central Ethiopia were unusually wet in the 1970s and unusually dry in the 1980s and 1990s, while other parts of East Africa experienced the opposite pattern.

PROJECTIONS OF FUTURE CLIMATE IN ETHIOPIA

The mean annual temperature is projected to increase by 1.1 to 3.1°C by the 2060s, and 1.5 to 5.1°C by the 2090s. Under a single emissions scenario, the projected changes from different models span a range of up to 2.1°C. All projections indicate substantial increases in the frequency of days and nights that are considered 'hot'.

Ethiopia's projections from different models in the ensemble are broadly consistent, indicating increases in annual rainfall in Ethiopia. These increases are largely a result of increasing rainfall in the 'short' rainfall season of October, November and December (OND) in southern

¹ UNDP Country Profiles: Ethiopia. McSweeney et al (2010)

² Hot' day or 'hot' night is defined by the temperature exceeded on 10% of days or nights in current climate of that region and season

Ethiopia. The OND rainfall is projected to change by 10 to +70% as an average over the whole of Ethiopia. The Proportional increases in OND rainfall in the driest, eastern most parts of Ethiopia are large. The Projections of change in the rainy seasons April, May, June (AMJ) and July August and September (JAS) which affect the larger portions of Ethiopia are more mixed, but tend towards slight increases in the south west and decreases in the north east. The models in the ensemble are broadly consistent in indicating increases in the proportion of total rainfall that falls in 'heavy' events. The largest increases are seen in JAS and OND rainfall.

GREENHOUSE GAS EMISSIONS

According to the CAIT climate data explorer for Ethiopia³ for the years 1990-2013, latest emission values excluding Land Use Change and Forestry (LUCF) were 123.37 % with per capita GHG emissions of 1.30 tCO₂ e presenting 99.26% absolute change from earliest emission values to the latest value. Total emissions values including LUCF were at 143.01% with per capita emissions of 1.51 tCO₂ e and 48.80% as absolute change from earliest to latest value⁴. The highest emission contributions are from agriculture, energy and LUCF respectively.

The majority of country emissions are from livestock (42%) and deforestation (37%); therefore reduction goals are focused on Agriculture, Forestry, and Other Land Use (AFOLU). According to Ethiopia's Second National Communication (2015), the largest contributors to future GHG emissions will be agriculture (emissions are expected to reach 70-160 MtCO₂e in 2030) and the industry sector (50-70 MtCO₂e in 2030).

Ethiopia intends to reduce emissions of at least 64% below the Ethiopian business-as-usual (BAU) scenario by 2030, where emissions including LULUCF are projected to reach 400 MtCO₂e⁵. The corresponding GHG emissions reduction target for 2030, excluding LULUCF, is 40% below BAU, or 185 MtCO₂e. Full implementation of the INDC is conditional on finance, technology transfer and capacity building support under the framework of Ethiopia's Climate Resilient Green Economy (CRGE) strategy, which is integrated in Ethiopia's Second Growth and Transformation Plan.

³ <http://cait.wri.org/profile/Ethiopia>

⁴ FAO 2014, FAOSTAT Emissions Database

⁵ Ethiopia Intended Nationally Determined Contribution (INDC) 2015.

CLIMATE CHANGE IMPACTS AND VULNERABILITY

Ethiopia is prone to droughts, floods, landslides, pests, earthquakes, and urban and forest fires. The country's vulnerability to natural hazards is due to a number of factors including dependence on rain-fed agriculture, land degradation, and weak institutions. It has a long history of recurring droughts, which since the 1970s have increased in magnitude, frequency, and intensity. Furthermore, pasture and water shortages have caused massive livestock deaths in the south and south eastern parts of the country. Climate change studies show that vulnerability to cyclic hazards is increasing, especially among the poor. Moreover, due to climate change as well as additional human-induced factors, the areas affected by drought and desertification are expanding in the country.⁶ Ethiopia, due to its geo-physical position and socio-economic context, is prone to several types of recurrent natural and human-induced disasters. Its geographical location and topography, in combination with low adaptive capacity entail a high vulnerability to the impacts of climate change.

The Government of Ethiopia is focused on combating recurrent droughts and food insecurity through a proactive approach to Disaster Risk Management (DRM). In recent past years, the Government has created the Disaster Management and Food Security Agency, drafted a National Policy and Strategy on Disaster Management, and designed a DRM Strategic Program and Investment Framework for government and donor interventions. The principal challenges remain, including insufficient capacity to carry out analysis and advocacy for enhanced understanding of risks and impacts, development and strengthening of building codes, land-use and urban planning, contingency planning, among others.

In Ethiopia, there is a strong link between climate change, food security and rural livelihoods. For many decades, agricultural production in the country has not kept pace with population increase. Especially in the drought prone and food insecure areas, food insecurity with high malnutrition has long remained a major problem where millions can quickly become dependent on relief aid during major droughts and in times of widespread livestock deaths, crop infestations and unseasonal floods. On the other hand, during prolonged drought years, increasing distances between water and pasture cause problems to the health of cattle and create local conflicts over resources in pastoral areas (NEPAD, 2012).

Crop production in Ethiopia is affected by failure of rains or occurrence of successive dry spells during the growing season. Food shortages resulting from adverse weather conditions are not new in Ethiopia. However, food shortages have increased in severity, with frequent shortages in recent years. The degree of vulnerability varies between the different regions based on wealth, technology, availability of infrastructure and institutions, potential for irrigation, and literacy rates. In general, vulnerability to climate change in Ethiopia is highly

⁶ GFDRR, 2013

related to poverty.⁷ Integrated rural development initiatives aimed at reducing poverty can play a role in increasing adaptive capacity to climate change.

The major effects of climate change on crop production include changes in regular crop planting times, length of growing season and shift in crop type or cultivars. Crop production in the country is highly correlated to the rainfall patterns. Rainfall variability and recurrent drought are leading to frequent crop failures, loss of life and property. Indigenous and improved technologies are used to reduce crop yield losses. Climate change exhibited through higher temperatures, rainfall variability, water scarcity, flooding, drought and displacement, negatively impacts agricultural production and causes breakdown in food systems.

Climate change will reduce water quality and even pose risks to treated drinking water because of anticipated increases in extremes. Increased intense rainfall will bring increased floods and soil erosion, which introduces sediments and pollutants in fresh water bodies. Soil erosion is already a serious problem in Ethiopia. Every year, 1.5 billion metric tons of topsoil erodes from the highlands into streams and rivers, thus increasing sediments, pollutants and reducing stream flows. Climate change is only one of the many pressures that will determine access to water in future decades.

According the World Bank, 2015, by 2050, climate change could reduce Ethiopian GDP by 8-10 per cent and increase variability in agricultural production by a factor of two. Adapting to climate change in the areas of agriculture, energy provision and road infrastructure may cost an annual average of US\$0.8-2.8 billion. Climate change impacts are likely to be felt most by the rural poor and particularly women. The poor in urban areas are also likely to be negatively impacted due to increasing food prices. Climate change will make the prospect of economic development harder for Ethiopia in at least two ways: first, by reducing agricultural production and output in sectors linked to agriculture, which is likely to reduce Ethiopia's GDP by about 10% from its benchmark level; and second, by raising the degree of income inequality which is likely to further decrease economic growth and fuel poverty. In addition, extreme climatic events have historically been shown to be costly to individuals, reducing consumption or forcing the sale or destruction of assets; thereby re-enforcing poverty.⁸

Climate change poses a statistically significant impact on agricultural production. The major impact of climate change on Ethiopia's economy will result from more frequent occurrences of extreme hydrologic events, which cause losses in the agricultural and non-agricultural sectors. If further irrigation development is not undertaken, the country will lose between

⁷ Climate change vulnerability and risk assessment of agriculture and food security in Ethiopia: which way forward? CCAFS Working Paper No. 59

⁸ Alebacheu, A. and Woldeamlak, B, 2011

US\$28 billion and US\$32 billion by the year 2050. The loss can be reduced to 35% if the water sector development plan is implemented (FAO 2013).

Under climate change, renewed efforts will be necessary to buffer the economy from more frequent and/or severe climate shocks. These include strengthening social safety nets, access to relief funds, drought early warning systems, crop insurance programs, grain banks, and strengthening infrastructure design. In the longer term, however, accelerated diversification of income and employment sources away from climate-sensitive sectors such as agriculture is likely to become increasingly important under a more erratic climate.

ETHIOPIA'S CLIMATE CHANGE POLICY FRAMEWORK

In 2011, the government of Ethiopia finalised its 'Climate-Resilient Green Economy' (CRGE), Strategy, the first of its kind in Africa. The CRGE strategy builds on the Growth and Transformation Plan (GTP), the government's ambitious development plan, which sets the aspiration for Ethiopia to reach middle income levels by 2025. As the highest national policy framework, it governs developmental policies, budgets and government organisations. The CRGE strategy has been integrated into the second Growth and Transformation Plan for 2015-2020. The strategy describes a new model of development that integrates measures of economic performance, such as GDP growth, infrastructure development poverty reduction, job creation, and social inclusion, with those of environmental performance, such as improving resilience to climate shocks, mitigation of GHG emissions, reducing biodiversity loss and ensuring access to clean water and energy. Strong economic development and economic inclusion objectives are addressed simultaneously with environmental and social objectives: the green economy that will lead Ethiopia to middle-income status before 2025.

In addition to the CRGE and the GTP II, the other principal climate relevant policies and strategies are:

- National Adaptation Plan of Action (NAPA),
- Nationally Appropriate Mitigation Actions (NAMAs),
- Climate Resilience Strategy: Agriculture and Forestry (2015),
- Intended Nationally Determined Contribution (INDC), 2015,
- Environmental Policy (1997),
- National Energy Policy (1994),
- Ethiopian Programme of Adaptation to Climate Change (2010),
- REDD+ strategy,
- National Policy and Strategy on Disaster Risk management, 2013.

NDC IMPLEMENTATION PROGRESS

Ethiopia was one of the first countries to submit its INDC in June 2015. The INDC includes a 64% decrease in the 2030 carbon emissions Business as Usual target covering key agriculture, forestry, transport, electric power, industry and construction sectors. The outlined financial needs of US\$ 150 billion to implement the proposed activities might be revised following dedicated ongoing studies.

The INDC is building on the Climate Resilient Green Economy (CRGE) Strategy and the second Growth and Transformation Plan (GTP II), Ethiopia's flagship national 5-year development plan. CRGE is the foundation of Ethiopia's INDC. The energy sector, supported through CIF, is one of seven CRGE priority sectors. The proposed adaptation measures are based on the National Adaptation Programme of Action (NAPA) and the Ethiopia Programme of Adaptation to Climate Change.

The Government of Ethiopia received support from the Climate and Knowledge Development Network (CKDN) and the Global Green Growth Institute (GGGI) who were involved in the INDC development process. Multiple international development partners are cooperating with Ethiopia on CRGE, the strategy underlying the INDC Stakeholder consultations were conducted to ensure quality of the INDC and Ministries have been very active in decentralized consultations. The CRGE and GTP II form the basis of the INDC.

PROGRESS ON NATIONAL ADAPTATION PLAN (NAP)

Through the support of the UNDP Africa Adaptation Programme, baseline studies on climate change vulnerability and adaptation capacity, options and costs have been completed for eight sectors and 11 geographic regions and have been used to inform key national policies such as the CRGE and GTPII. Momentum to advance the policies was created through engagement of more than 300 parliamentarians and the heads of relevant government departments and bureaus through awareness-raising and sensitization workshops. These workshops also led to climate change considerations being integrated into district-level development plans.

Ethiopia has finalised a draft NAP document with priorities drawn from the CRGE as the guiding document. NAP strategies have also been developed for some of the government sectors.

KEY PARTNER COUNTRY'S BILATERAL PROJECTS & PROGRAMMES

PRODUCTIVE SAFETY NET PROGRAMME (PSNP)

Established in 2005, the Productive Safety Net Programme (PSNP) is a government led national programme aimed at enabling the rural poor facing chronic food insecurity to resist shocks, create assets and become food self-sufficient. The PSNP provides multi-annual predictable transfers, as food, cash or a combination of both, to help chronically food insecure people survive food deficit periods and avoid depleting their productive assets while attempting to meet their basic food requirements. Key objectives are:

- Sustainably rehabilitate the highly degraded environments which are one of the causes of food-insecurity.
- Provide support in three livelihoods pathways (crop and livestock, off-farm income generation, and employment).
- Provides grants to households who are labour-poor and cannot undertake public works.

The PSNP is enhancing community-level infrastructure and contributing to environmental transformation. At the household level, families are experiencing improved food security, increased asset creation and protection, increased utilization of education and health services and improved agricultural productivity. The PSNP surpasses repeated relief interventions by also addressing slower onset climatic stresses and shocks. ***Climate relevant funding provided by Irish Aid in 2016: €10,400,000.***

ENHANCING INTEGRATED WATERSHED MANAGEMENT WITH CLIMATE SMART AGRICULTURE IN GERGERA WATERSHED.

The objective of the project is to enhance eco-system resilience and food security through climate smart agriculture. The project is developing an enhanced model for integrated watershed management based on the inclusion of agroforestry practices, and rural institutional engagement, in the integrated watershed model design. As well as producing food, and improving incomes, the project also achieves environmental sustainability by promoting climate smart agriculture. ***Climate relevant funding provided by Irish Aid in 2016: €200,000.***

IMPROVING FOOD AND NUTRITION SECURITY AND CLIMATE RESILIENCE THROUGH ADOPTIVE RESEARCH IN TIGRAY.

The overall goal of the programme is to contribute to food and nutrition security, gender equity and building a climate resilient economy through adaptation, evaluation and dissemination of improved agricultural technologies.

Ethiopia is highly vulnerable to climate change, not least because most agricultural production is rain-fed. The introduction of new crops and varieties contributes to the diversification of the farming system, food security and builds climate resilience. This project also tackles the seed supply challenge by facilitating access to improved varieties of seed. ***Climate relevant funding provided by Irish Aid in 2016: €200,000.***

IMPROVING FOOD AND NUTRITION SECURITY AND CLIMATE RESILIENCE THROUGH ADOPTIVE RESEARCH IN SNNPR

This project is undertaken by the South Agricultural Research Institute (SARI) and contributes to poverty reduction and improved food security, nutrition, and climate resilience in seven woredas of the region. The overall goal is to address food and nutrition insecurity by helping farmers cope with emerging change, adapt and diversify their livelihoods and manage the ecosystem, so that they will be able to better withstand future shocks arising from climate change. ***Climate relevant funding provided by Irish Aid in 2016: €150,000.***

IMPROVING SMALLHOLDER LIVELIHOODS AND RESILIENCE THROUGH CLIMATE SMART AGRICULTURE AND ECONOMIC DEVELOPMENT

This project promotes a Climate Smart Agricultural (CSA) approach towards achieving food security built on the three key CSA pillars: increasing productivity and incomes; enhancing resilience of livelihoods; and reducing agriculture's contribution to climate change.

The goal of the project is to contribute to poverty alleviation and resilient, sustainable livelihoods in the SNNPR and Oromia through climate smart agricultural economic development. Undertaking a landscapes level approach and incorporating ecosystems aspects; forestry, fisheries, crops and livestock systems, the project aims to respond to and mitigate against the impacts of climate change. The project includes the scaling up of previously tested climate-smart practices and the piloting of innovative practices. Through the scaling up of climate-smart practices, the project intends to strengthen community and institutional capacities for effective management of disaster risk and long-term development, including strengthening of early warning schemes and enhancing access to weather/climate information.

Throughout the project life cycle, tools and knowledge on climate-smart agriculture will be further developed and shared. ***Climate relevant funding provided by Irish Aid in 2016: €1,300,000***

INTEGRATED LIVELIHOOD IMPROVEMENT PROJECT IN EASTERN TIGRAY

The project is run by the Adigrat Catholic Church Secretariat in the Eastern Tigray region where a combination of factors (such as recurrent drought and war) have led to serious and growing problems of food insecurity and social crisis. The goal of the project is to increase resilience of affected communities to climate shocks, through increasing the food security and income of vulnerable people (landless and jobless youth) living in 9 tabias of Gulomk da woreda in Eastern Tigray. ***Climate relevant funding provided by Irish Aid in 2016: €200,000.***

SUPPORT FOR RURAL LIVELIHOODS THAT ARE CLIMATE SMART THROUGH PROMOTION AND DISSEMINATION OF IMPROVED COOK STOVES IN TIGRAY AND SNNPR

Working with the German International Development Agency (GIZ), the overall objective of the project is to improve the livelihood of poor, rural households and to contribute to regional development and implementation of the Climate Resilient Green Economy Strategy in SNNPR and Tigray. The improved cookstoves provide a much cleaner and safer method of cooking for poor families, and can reduce air pollution by up to 80% and also cut fuel consumption by up to 60%. They also relieve women and girls of many hours' heavy work collecting firewood and will give them more time for other activities, such as going to school. ***Climate relevant funding provided by Irish Aid in 2016: €670,000.***

SUSTAINABLE COMMUNITY BASED SEED PRODUCTION SYSTEM IN TIGRAY

The project is run by the Agricultural Transformation Agency and the overarching goal of the community-based seed production project is to contribute to the transformation of the intermediate seed sector (CBSPs) in Tigray and SNNPR. Improved seeds yield crops that are high-producing and resistant to pests and disease, thereby increasing crop production. The project helps to build the resilience of farmers to climatic and other shocks. ***Climate relevant funding provided by Irish Aid in 2016: €400,000.***

ESTABLISHMENT AND IMPLEMENTATION OF A LONGITUDINAL ASSESSMENT THROUGH PARTICIPATORY MONITORING, EVALUATION AND LEARNING OF THE LAKE HAWASSA WATERSHED PROJECT

The project is run by the International Institute for Environment and Development (IIED). Lake Hawassa is one of the major Ethiopian Rift Valley Lakes which is under threat from the impacts of climate change and human activities. The objective of the project is to generate evidence to support implementation, learning and future programming around what contributes to climate-smart outcomes and resilience. The project will contribute to environmental sustainability and improvement of livelihood security for households which are dependent on Lake Hawassa and its surrounding ecosystem through introduction and promotion of sustainable land and natural resource management practices and help to build the resilience of vulnerable communities. ***Climate relevant funding provided by Irish Aid in 2016: €24,740.***

SUSTAINABLE AGRICULTURE TO IMPROVE FOOD SECURITY

The objective is to contribute to economic empowerment and better nutrition for poor women and landless youth. The project is run by Farm Africa and the emphasis is on integrating community-owned high-quality management of natural resources and stimulating income generation opportunities for the poor. In a resource constrained, drought-prone environment, ensuring soil health and integrity, and sustainable water management are critical issues for future prosperity. ***Climate relevant funding provided by Irish Aid in 2016: €200,000.***

SCALING OUT SWEET POTATO AND POTATO LEAD INTERVENTIONS TO IMPROVE NUTRITION AND FOOD SECURITY IN TIGRAY AND SNNPR

Chronic food insecurity and malnutrition are major public health problems facing Ethiopia, which are exacerbated by the impacts of climate change. The objective of the project is to expand smallholder production, increase consumption and improve and diversify the market for Orange Fleshed Sweet Potato. Vitamin A deficiency (VAD) is a serious public health problem in developing countries like Ethiopia. To combat this problem, a food-based intervention is an appropriate and sustainable approach in the Ethiopian context. Given its high Pro-vitamin A content, low input requirements and adaptation to African farming systems, orange-fleshed sweet potatoes can make a sustainable and significant contribution to satisfy the vitamin A dietary requirement of resource poor people. The project is therefore

helping to build resilience by improving nutrition in vulnerable communities and helping them to adapt to the impacts of climate change. ***Climate relevant funding provided by Irish Aid in 2016: €350,000.***

AQUATIC ECOSYSTEM BASED SOLUTIONS FOR SUSTAINABLE RIVER BASIN MANAGEMENT AND DEVELOPMENT.

The project focuses on the promotion of terrestrial and aquatic ecosystem based solutions for sustainable river basin management and development in the upper catchments of the Omo-Gibe river basin. The project is run by the Population, Health & Environment Consortium (PHE-EC) in Ethiopia and the aim is to enhance institutional capacity and multi-sectoral integration towards sustainable management of Omo-Gibe basin. ***Climate relevant funding provided by Irish Aid in 2016: €39,985.***

STRENGTHENING A COMMUNITY DRIVEN CLIMATE RESILIENCE BUILDING INITIATIVE IN MAO KOMO WOREDA OF BENISHANGUL GUMUZ REGION.

The project partners are Christian Aid Ethiopia (CAE) and the Education for Development Association (EfDA). Strengthening Community Driven Climate Resilience Building Initiative in Mao Komo Woreda of Benishangul Gumuz Region aims to foster and influence a process of ongoing changes in favour of the poor through community based development initiatives to bring about sustainable development and change in the lives of the community. ***Climate relevant funding provided by Irish Aid in 2016: €44,000.***

CASE STUDY: GULLY MAINTENANCE AND REHABILITATION FOR INCREASED ECOSYSTEMS AND LIVELIHOODS RESILIENCE

Torrential rain in Gergera, Ethiopia, has resulted in soil erosion from farm land and creation of gullies and valleys. This has resulted in 150 farmers losing over 36 ha of farm land, with further farm land under threat due to high runoff and flooding. ICRAF, in partnership with the Bureau of Agriculture, through community mobilization, has saved over 23 ha of farmland from being washed away by floods, with 5.5 ha of farm land reclaimed and reallocated to 87 landless youth to support their livelihoods. Gully maintenance and rehabilitation through gabion-check dam construction has resulted in improvement of the micro-climate, development of a spring for drinking water, irrigation and household consumption, which has contributed to improvements in ecosystems and livelihoods.

Prior to 1998, the Gergera area was highly degraded with communities considering resettlement elsewhere. Between 1998 and 2000, Irish Aid supported a programme of integrated soil and water conservation and rehabilitation of the watershed, through a well-designed watershed management approach. Following on from this success, the integrated watershed approach is now being implemented on a regional and national level.

In 2014, Irish Aid supported the World Agroforestry Centre (ICRAF) to implement 'Enhancing Integrated Watershed Management with Climate Smart Agriculture in Gergera Watershed', in order to build on the successes and earlier investments in the watershed management approach. The overall objective of the project is to enhance **food security and ecosystem resilience through climate-smart landscape management and restoration practices, approaches and technologies** and through strengthening of rural institutions and vulnerable community members including women, poor and the youth.



Images above show the change in landscape from a highly degraded area following an Irish Aid supported programme of integrated soil and water conservation and rehabilitation, through a watershed management approach. Photo Credit: ICRAF

The project is addressing the existing land management gaps, including improper management and utilization of rehabilitated hillsides and grazing lands. As a result about 456 households have benefited in various ways. More than 60 hectares of degraded hillsides and gullies were enriched with economically and ecologically important trees, shrubs and grass species. As a result of the gully maintenance and rehabilitation, a spring was developed below the check dam with water available for drinking (human and livestock), irrigation and household consumption. 5.5 ha of productive land has been reclaimed from the valley and is now being used by 87 landless youth and 23.5 ha of farm land has been saved from being washed away by floods. In addition, one Rural Resources Centre (RRC) was established and ownership transferred to a Gergera Cooperative, comprising of 15 members of landless youth, women and poor farmers, to serve as source of income and job opportunities to these vulnerable groups, while supporting the watershed communities technically, and supplying quality planting materials and agricultural inputs. This RRC is the first of its kind in the region where the government (through Bureaus of Agriculture and Natural Resources) and other organizations are currently keen to replicate across the region as a model.



Images above show before and after pictures of the valley following construction of a check dam, which provides a source of drinking water, irrigation and household consumption. Photo Credit: ICRAF.

MAPPING OF BILATERAL EXPENDITURE ETHIOPIA 2016

Project/Programme	Recipient	Disbursed €	Rio Marker Score: Miti gation	Rio Marker Score: Adapt ation	Rio Marker Score: Biod iversity	Rio Marker Score: Dese rtific ation	Agri cultu re	Disa ster Risk Red uctio n	Capa city Buil ding	Te chn ology Tra nsfer	For estr y & Agr ofor estry	Total Climat e Accou nting Weigh t	Total Accoun ted Climat e Amoun t €	Miti gation Total €	Adapt ation Total €	Cross cuttin g Climat e Chang e €
Enhancing integrated Watershed Management with Climate Smart Agriculture in Gergera Watershed.	World Agroforestry center (ICRAF)	200,000	2	1	2	0	2	0	0	1	1	100%	200,000	200,000		
Improving Food and Nutrition Security and Climate Resilience through Adoptive Research in Tigray.	Tigray Agricultural Research Institute (TARI)	200,000	0	2	0	0	1	1	1	2	0	100%	200,000	0	200,000	
Improving Food and Nutrition Security and Climate Resilience through Adoptive Research in SNNPR.	South Agricultural research Institute (SARI)	150,000	0	2	0	0	2	0	1	2	0	100%	150,000	0	150,000	

Improving smallholder livelihoods and resilience through climate smart agriculture economic development.	Consortium of NGOs (SOS Sahel Ethiopia, Farm Africa, VITA and Self Help Africa)	1,300,000	1	2	0	0	2	0	1	1	0	100%	1,300,000		1,300,000	
Integrated livelihood improvement Project in Eastern Tigray.	Adigrat Catholic Church Secretariat	200,000	0	2	0	0	2	0	0	0	0	100%	200,000	0	200,000	
Support for rural livelihoods that are climate smart through promotion and dissemination of improved Cook Stoves in Tigray and SNNPR.	GIZ	670,000	2	0	1	0	0	0	0	2	0	100%	670,000	670,000	0	

Sustainable community based seed production system in Tigray.	Agricultural transformation Agency	800,000	0	1	0	0	2	0	2	2	0	50%	400,000	0	400,000	
Longitudinal Assessment through Participatory Monitoring, Evaluation and Learning of the Lake Hawassa Watershed Project.	IIED	24,740	2	1	1	0	1	0	2	0	0	100%	24,740	24,740	0	
Sustainable Agriculture to Improve Food Security.	Farm Africa	200,000	0	2	0	0	2	2	0	0	0	100%	200,000	0	200,000	
Orange Fleshed Sweet Potato promotion for improved Nutrition and Food security	International Potato centre	700,000	0	1	1	0	1	0	1	1	0	50%	350,000	0	350,000	
Productive Safty Net Programme (PSNP).	Ministry of Agriculture	10,400,000	1	2	1	1	0	2	1	0	1	100%	10,400,000		10,400,000	

Aquatic ecosystem based solutions for sustainable river basin management and development.	Population, Health & Environment Consortium (PHE-EC).	39,985	2	1	0	0	0	0	0	0	0	100%	39,985	39,985		
Strengthening Community Driven Climate Resilience Building Initiative in Mao Komo Woreda of Benishangul Gumuz Region.	Christian Aid Ethiopia (CAE)	44,000	1	2	0	0	0	0	0	0	0	100%	44,000		44,000	

MAPPING OF ETHIOPIA CIVIL SOCIETY EXPENDITURE 2016

Civil Society partners Concern, Trocaire, GOAL, Self Help Africa, Misesan Cara, and Vita are helping to build resilience to climate change through a wide range of projects including improvement of the asset base, resilience, and inclusiveness of extreme poor; increasing community access to and quality of water, sanitation and improved hygiene practices in targeted communities; and reducing hunger and poverty and promoting economic development by increasing smallholder production and return from enterprises. More detail is set out in the table below:

Project/ Programme	Irish Aid Funding in 2016 €	Climate Relevant €	Adaptation €	Mitigation €	Cross cutting €	Biodiversity €	Desertification €
Concern: Contribute to improve the asset base, resilience, and inclusiveness of extreme poor in Dessie Zuria and Delanta Woredas of South Wollo Zone of Amhara Region and Kindo Koyesha and Duguna Fango Woredas of Wolaiata zone of SNNPR region	1,125,000	731,249	731,249	0	0	843,749	1,102,500
Trocaire: Contribute to the sustainable improvement of the livelihood of the target beneficiaries by providing access to water and other natural resources, and increasing productivity of poor pastorlists	208,826	166,017	107,024	0	58,993	166,017	187,421
GOAL: Increased community access to and quality of water, sanitation and improved hygiene practices in targeted communities in Borena and West Haraghe	444,763	222,382	0	0	222,382	0	222,382
GOAL: Improved access, availability and utilisation of food and reduced vulnerability to disasters in Borena and West Haraghe	167,055	83,528	83,528	0	0	0	0

GOAL: Increased and improved availability of and access to diversified income sources in Borena and West Hararghe	44,045	22,023	22,023	0	0	0	0
GOAL: Strengthened institutions and policies influenced in Borena and West Hararghe to create conditions for implementation of programmes that lead to improved access, availability and utilisation of food, and diversification of income sources	80,106	40,053	40,053	0	0	0	0
GOAL: Strengthen GOAL's programming through the effective mainstreaming of HIV, Environment, Gender and Child Protection	55,616	27,808	0	0	27,808	0	0
Self Help Africa: Contribute to reducing hunger and poverty and developing an economically prosperous rural Africa by increasing smallholder production and return from enterprises	377,324	264,127	264,127	0	0	132,062	0
Misean Cara: Spiratans - Dita-Chencha Water, Sanitation, and Hygiene Improvement project	147,038	147,038	147,038	0	0	0	0
Misean Cara: Spiratans - Arba Minch Zuria - Livelihoods Improvement and Food Security project	103,532	103,532	103,532	0	0	51,766	51,766
Vita: Programme comprising potato production, seed systems, improved stoves and capacity building	168,000	78,500	77,000	750	750	0	0

METHODOLOGY

The Organisation for Economic Co-operation and Development (OECD) Development Assistance Committee (DAC) Rio Marker methodology underpins the UNFCCC climate finance figures totals quoted on page five and in the tables above. The Rio Marker definitions were employed to identify and score disbursements as climate mitigation, adaptation or cross-cutting relevant. The Rio Markers and the anticipated Disaster Risk Management Marker⁹ work on a three-score system. Activities can be identified with;

- Principal marker of 2
- Significant marker of 1
- Or not targeted; 0.

The choice of principle, significant or not-targeted relates to hierarchy of objectives, goals and intended outcomes in the programme or project design. A principle marker is applied if the marker policy is one of the principle objectives of the activity and has a profound impact on the design of the activity. A significant marker is applied if the marker policy is a secondary objective, or a planned co-benefit, in the programme or project design. The zero marker is applied to show that the marker policy was not targeted in the programme or project design. If this is unknown, the marker is left blank.

The mapped climate finance in this report includes financial support both for activities scored as 'principal' (2) and for activities scored as 'significant' (1). This report categorises disbursements as adaptation where the scoring against the adaptation marker exceeds the scoring against the mitigation marker and vice versa. Where scoring is equal (and >0) under both adaptation and mitigation markers, the disbursement is counted as cross-cutting. In reporting bilateral climate finance we place a different weight on support for principal and significant activities. In aggregating finance for principal and significant activities, 'principal' activities are weighted with a coefficient of 100% and 'significant' activities are weighted with a coefficient of 50%. Where an activity has both adaptation and mitigation benefits, or is cross-cutting, it is weighted according to its highest score i.e. weights in mitigation and adaptation are not aggregated.

Under OECD DAC reporting guidelines, disbursements can be marked for multiple Rio Markers and policy markers. This is critical as it reflects and recognises the importance of achieving as much as possible with limited resources. Many of the Irish climate relevant disbursements have multiple co-benefits and therefore are scored under more than one Rio Marker and in particular may be marked for both mitigation and adaptation. However, in reporting climate finance to the UNFCCC and the EU both formats only one column in which to identify if the activity supported is climate change mitigation, adaptation or cross-

⁹ An OECD DRR marker definition is nearing completion but is not yet agreed. Therefore we employed a simple approach by only marking or counting those projects or programmes where objectives and/or plans explicitly included and specified disaster risk management or disaster risk reduction components. Projects or programmes where early warning systems, or risk mitigation for natural hazards were specified in the activity documentation were also considered to be relevant to DRM.

cutting. A large share of Irish disbursements are marked for both mitigation and adaptation and could thus be considered as cross-cutting. However in most of these cases, one objective supercedes the other. Therefore in calculating total finance for adaptation and total finance for mitigation respectively, this report categorises all disbursements as adaptation where the scoring against the adaptation marker exceeds the scoring against the mitigation marker and vice versa. Where scoring is equal (and >0) under both adaptation and mitigation markers, the disbursement is counted as cross-cutting. This methodology means that amounts for mitigation, adaptation and crosscutting climate may be aggregated together for total climate finance. However, it is still *not* appropriate to aggregate climate with biodiversity or desertification finance as these categories contain overlaps.