



Emmanuel Uggi working in his field at Farmer Field School, Ibumila Village, Mgama Ward, Iringa Region, Tanzania. *Photo: Aliakber Hakimjee/Indigo MTPC Ltd*

TANZANIA CLIMATE ACTION REPORT

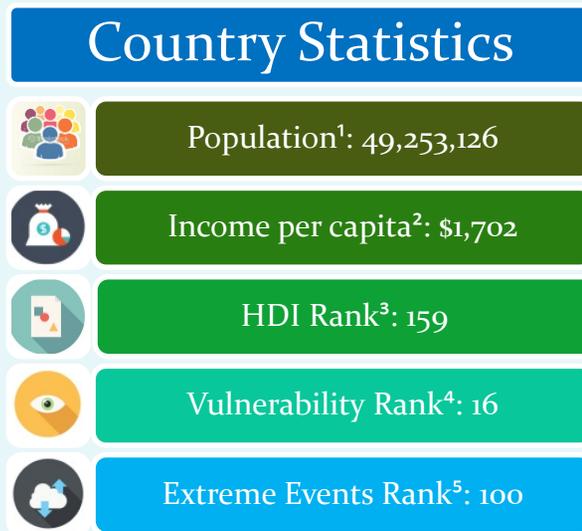
Resilience Policy Team | Irish Aid | November, 2015

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COUNTRY CONTEXT

With a total area of 945,087 square kilometres and with an estimated population of over 49 million, Tanzania is one of the largest countries in East Africa. Tanzania is ranked 152nd on the HDI ranking and 16th in terms of vulnerability. The average annual temperature in Tanzania has increased by 1.0°C since 1960 and is projected to increase by 1.0°C to 2.7°C by the 2060s. Ireland supports Tanzania in a number of agricultural, water management and storage, land degradation and carbon sequestration programmes with approximately €1,541,500 provided in climate finance in 2014.



Map of Tanzania, Irish Aid, 2015

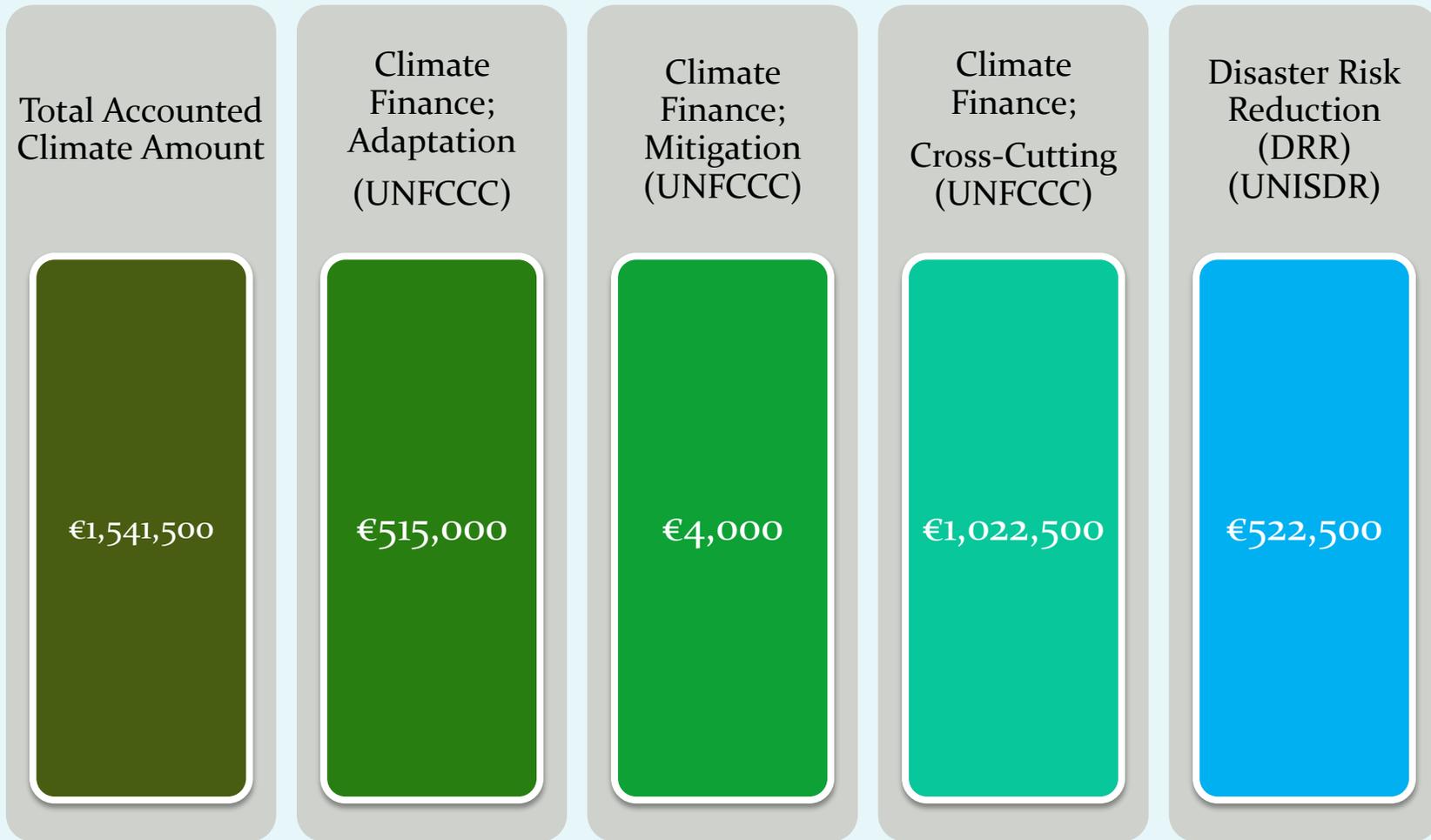
1 (The World Bank, 2015)

2 (The World Bank, 2015)

3 (UNDP, 2015)

4 (GAIN, 2013)

5 (Kreft, 2015)



Climate finance and DRR amounts should not be aggregated as some disbursements have multiple co-benefits and are marked for multiple environmental impacts. For the data and methodology behind these numbers see pages 16-18.

TANZANIA, CLIMATE CHANGE AND THE UN FRAMEWORK CONVENTION ON CLIMATE CHANGE (UNFCCC)

Tanzania is a member of the Least Developed Countries (LDCs) Group and has a position in the LDC Expert Group (LEG). Tanzania is an alternate member of the Green Climate Fund board. Tanzania is also a member of the Consultative Group of Experts. The CGE offers expert advice to developing (non-Annex 1) countries on the preparation of National Communications and Biennial Reports. Tanzania produced a National Adaptation Programme of Action (NAPA) in 2007. This plan states *“Since Tanzania’s economy is largely dependent on agriculture, it is deemed that sustainable development can only be achieved when strategic actions, both short and long term are put in place to address climate change impacts on agriculture and other key economic sectors”*. In 2012, Tanzania produced a National Climate Change Strategy which addresses mitigation, adaptation and cross-cutting interventions to realize opportunities available for developing countries in their efforts to tackle climate change.

RECENT CLIMATE TRENDS IN TANZANIA

Average annual temperature has increased by 1.0-C since 1960. The increase in night-time temperatures has been much more pronounced than daytime temperatures. While the number of cold nights has decreased significantly, there is no discernable decrease in the number of cold days.

Decreases in observed rainfall have been significant with observations showing annual rainfall decreasing by 2.8mm per month per decade since 1960. The greatest annual decrease has occurred in the southern-most parts of Tanzania (McSweeney et al, 2010).

The Fifth National Report of Tanzania to the UN Convention on Biological Diversity, further described below, found that severe droughts have exerted pressure on biodiversity and ecosystems (Vice-Presidents Office Tanzania, 2014). Frequent and prolonged droughts have led to the drying out of water bodies such as rivers, reservoirs, lakes and wetlands with a consequent loss of biodiversity. Grazing lands have been diminished and electricity supply from hydropower has also been impacted. There has been a 68% decrease in dry season flow in the Mara River since 1972.

A submission by Tanzania to the UNFCCC in 2013 identified that currently more than 70% of all natural disasters are hydro-meteorologically related. Both floods and droughts have each had significant and serious impacts on local and national economy.

PROJECTIONS OF FUTURE CLIMATE IN TANZANIA

Average annual temperature is projected to increase by 1.0 to 2.7C by the 2060s. Therefore, hot days and nights will become increasingly frequent. It is projected that average annual

rainfall will increase, but this will be more likely to fall in 'heavy' events than in the current climate and so may not contribute to year round water availability. In Tanzania, an increase in temperature or rainfall increases the number of cholera cases (IPCC, 2014). The IPCC WG II report cites Cook and Vizzy (2013) who project shortened spring rains by the mid-21st Century over eastern Tanzania. There is a high degree of uncertainty about how the impact of El Niño on Tanzania weather will impact in conjunction with climate change (McSweeney et al, 2010).

The National Climate Change Strategy of 2012 outlines findings from the Tanzania Meteorological Agency that some of the previously highly productive areas of Tanzania such as the southern and northern highlands will continue to be affected by declining rainfall, frequent droughts and significant increase in spatial and temporal variability of rainfall. This will have long-term implications in the agricultural sector including in planning and resource allocation, such as seeds and pesticides which may result in shifts in types of agricultural produce. It also notes that while models predict a future expansion in the geographical range of diseases such as malaria. In Tanzania, there are already reported incidences of malaria in highland areas that were traditionally free from mosquitoes and malaria.

ADAPTATION

The Tanzania National Adaptation Programme of Action (NAPA) was prepared as part of the overall integrated plans, policies, and programmes for sustainable development at the national level. Vulnerability assessments were performed across key sectors; Agriculture, Energy, Forestry and Wetlands, Health, Human Settlements, Coastal, Marine and Freshwater resources. After identification of vulnerabilities in each sector, key adaptation options and strategies to best address those vulnerabilities were developed. Consultations were undertaken at national, regional, and district levels. This helped prioritise 14 adaptation activities to address the most urgent needs that were then ranked based on criteria of; impact on poverty reduction and health; and sustainability. These 14 adaptation activities are as follows:

1. Water efficiency in crop production irrigation to boost production and conserve water;
2. Alternative farming systems and water harvesting;
3. Developing alternative water storage programmes and technology for communities;
4. Community based catchments conservation and management programmes;
5. Exploration and investment in alternative clean energy sources;
6. Promotion of co-generation in the industry sector for lost hydro potential;
7. Afforestation programmes in degraded lands using more adaptive and fast growing tree species;
8. Development of community forest fire prevention plans and programmes;
9. Establishment and strengthening of community awareness programmes on preventable major health hazards;

10. Implementation of sustainable tourism activities in the coastal areas and relocation of vulnerable communities from low-lying areas;
11. Enhanced wildlife extension services and assistance to rural communities in managing wildlife resources;
12. Water harvesting and recycling;
13. Construction of artificial structures, e.g. sea walls, artificially placing sand on beaches and coastal drain beach management systems; and
14. Establishment of a good land tenure system and facilitation of human settlements.

The NAPA further elaborates on these priorities and it is worth noting the many co-benefits to these identified priorities. For example, actions 5, 6, 7 and 8 have mitigation co-benefits by promoting low carbon energy and actions by supporting carbon sinks in existing and new forestry. In 2015, Tanzania also submitted an Intended Nationally Determined Contribution (INDC) to the UNFCCC, which included adaptation elements. These are further described below.

NATIONAL CLIMATE CHANGE STRATEGY

The goal of the National Climate Change Strategy (NCCS) is to enable Tanzania to effectively adapt to and participate in global efforts to mitigate against climate change with a view to achieving sustainable economic growth. The Strategy is aligned to Tanzania's national development blueprint, Vision 2025; Five Years National Development plan; and national cross-sectoral policies in line with established international policy frameworks. The NCCS sets eight objectives;

- a) To build the capacity of Tanzania to adapt to climate change impacts;
- b) To enhance resilience of ecosystems to the challenges posed by climate change;
- c) To enable accessibility and utilization of the available climate change opportunities;
- d) To enhance participation in climate change mitigation activities that lead to sustainable development;
- e) To enhance public awareness on climate change;
- f) To strengthen information management on climate change;
- g) To enhance institutional arrangements to adequately address climate change; and
- h) To enhance mobilization of resources in particular finance to address climate change.

The strategy builds on these objectives to identify a large number of interventions for each relevant sector such as promoting rain water harvesting, promoting sustainable coastal land-use planning, supporting alternative livelihood initiatives for forest dependent communities, and strengthening wildlife information database and management systems. Similarly, a large number of interventions for mitigation are identified for all relevant sectors.

RESOURCES:

IPCC 5th Assessment Report (2014), Working Group II Impacts, Adaptation and Vulnerability: <http://ipcc-wg2.gov/AR5/>

McSweeney et al (2010), UNDP climate change profile for Tanzania:

<http://www.geog.ox.ac.uk/research/climate/projects/undp-cp/index.html?country=Tanzania&d1=Reports>

National Adaptation Programme of Action (2007);

<http://unfccc.int/resource/docs/napa/tza01.pdf>

National Climate Change Strategy (2012):

<http://tanzania.um.dk/en/~media/Tanzania/Documents/Environment/TANZANIA%20CLIMATE%20CHANGE%20STRATEGY/TANZANIA%20CLIMATE%20CHANGE%20STRATEGY.pdf>

UNITED REPUBLIC OF TANZANIA'S INTENDED NATIONALLY DETERMINED CONTRIBUTION (INDC)

The United Republic of Tanzania's INDC has a Mitigation and Adaptation component up until 2030.

Mitigation: Tanzania will reduce greenhouse gas emissions economy wide between 10-20% by 2030 relative to the BAU scenario of 138 - 153 Million tons of carbon dioxide equivalent (MtCO_{2e}) gross emissions, depending on the baseline efficiency improvements, consistent with its sustainable development agenda. The BAU emissions represent projected future emissions in the absence of further climate policies or other measures. For developing countries, increasing emissions in the BAU scenario reflect assumptions e.g. population growth, economic development and technology deployment. The emissions reduction is subject to review after the first Biennial Update Report (BUR).

Adaptation: Tanzania will embark on a climate resilient development pathway. In doing so, Tanzania's adaptation contributions will reduce climate related disasters from 70% to 50%. The INDC will also significantly reduce the impacts of spatial and temporal variability of declining rainfall, frequent droughts and floods which have long-term implications to all productive sectors and ecosystems, in particular the agricultural sector. Access to clean and safe water will be increased from 60% to 75%. In addition, based on a conservative and a worst-case scenario of 50cm and 1m sea-level rise, the contributions will verifiably reduce the impacts of sea level rise to the island and coastal communities, infrastructure and ecosystems.

Monitoring and Evaluation: The implementation of the INDC is based on Tanzania's various policies, development vision programmes, strategies and action plans, which are set to be reviewed regularly. Therefore, the submitted INDC will be reviewed in a participatory manner to reflect the emerging needs, changes and decisions, particularly the outcome of the 21st Conference of the Parties (COP 21) of the United Nations Framework Convention on Climate Change, December 2015.

Fairness, equity and ambition: Tanzania's intended contribution is focused in the sectors of energy, transport, forestry and waste management and will enable the country to achieve low emission growth pathway while achieving the desired sustainable development. These sectors are among the top contributors towards economic development in Tanzania. In light of Tanzania's national circumstances, Tanzania states that the intended contributions by these sectors are considered fair and ambitious for achieving the UNFCCC objective.

CASE STUDY: APPROACHES FOR SUPPORTING PASTORALIST GROUPS FACING CLIMATE CHANGE EFFECTS IN TANZANIA

The impacts of climate change are posing a direct threat to pastoralists and agro-pastoralists livelihoods in the arid and semi-arid lands of Tanzania. Both livelihood strategies are dependent on resources such as soil, water, minerals and good quality pastures, all of which are directly affected by changing weather patterns. Increasing variability of seasonal onset, intensity of rainfall and rising temperatures are creating risks of more virulent crop and animal diseases, emergence of new species that affect environment and production systems, weakened soil quality and periods of severe water stress. Coupled with increasingly frequent and severe droughts, the long term sustainability of pastoralist livelihoods are being threatened.

Irish Aid, in collaboration with the International Institute for Environment and Development (IIED) is currently establishing a learning platform on climate change. This platform seeks to build capacity of Irish Aid staff and partners to incorporate climate change into development planning, and improve tracking and reporting of climate change activities.

Irish Aid has therefore commissioned a study of three projects in Tanzania that seek to enhance climate risk management and build adaptation capacity in areas dominated by pastoralist livelihoods:

- A programme to establish a “devolved level climate finance mechanism” funded by UK-DFID and implemented by the International Institute for Environment and Development (IIED). The project is focused on capacity building and institutional strengthening of district governments in Longido, Monduli and Ngorongoro to develop knowledge of climate change in dryland ecologies and to enhance development planning.
- A “Pastoralist Programme”, funded by Irish Aid and implemented by Care International and the Tanzania Natural Resource Forum (TNRF). The programme provides capacity building and funding for community-based organisations (CBOs) on securing resource access through improved local land management, gender rights and climate change awareness training. It also supports civil society organisations to advocate for “pro-pastoralist” policy at the level of national government.
- A Pastoralism programme that focussing on community support, national and international level advocacy. The programme is managed by Oxfam Tanzania and implemented by national CSOs in Tanzania. The programme funds pastoralist CBOs to support planning for disaster risk reduction and efforts to secure equitable rangeland governance and management. Funding was also provided for pro-pastoralist advocacy.

The study aimed to assess how climate change is being integrated into development planning either by governments or development agencies in Tanzania. The study used an appreciative inquiry approach to draw out the strengths and learning from each project, in order to channel these findings into future programming. The analysis of the finding of the study was guided by the Tracking Adaptation and Measuring Development (TAMD) framework which tried to assess and understand more about both incremental and transformational adaptation.

For further information on this Case Study, please access the [Climate Learning Platform](#)



The focus group discussion that involved Pastoralist village council members, village livestock committee members, village land tribunals and pastoralists during the climate change study at ENGANG'UNGARE village, Lengatei ward in Kiteto district. *Photo: IIED/TNRF*

KEY PARTNER COUNTRY'S BILATERAL PROJECTS AND PROGRAMMES

AGRICULTURE SECTOR DEVELOPMENT PROGRAMME (ASDP). NATIONAL AGRICULTURE PROGRAMME FOCUSING ON SMALL HOLDER FARMERS PRODUCTIVITY AND INCREASED INCOMES

The aims of the programme are to promote private investment based on an improved regulatory and policy environment and to enhance sustainable agricultural production and productivity through better access to and use of; agricultural knowledge, improved marketing systems and infrastructures. The programme promotes conservation agriculture practices, agro-forestry practices, thus supporting carbon sinks and promotes drought resistant crops, water conservation and improved irrigation and the use of indigenous crops and livestock species, thus supporting climate resilience.

COCOA VALUE CHAIN; DEVELOPING A HIGH QUALITY COCOA VALUE CHAIN IMPROVING PRODUCTION AND MARKET ACCESS

Development of sustainable high quality cocoa value chain: aims to increase the incomes of 5,000 smallholder farmers by improving quality and linking farmers to markets in two regions, Mbeya and Morogoro. This project will introduce technologies and practices to reduce environmental impact and adapt to climate change. The primary climatic risk for farmers in Tanzania is drought. The project aims to improve access to affordable irrigation equipment, such as small-scale irrigation pumps, through access to microfinance. In Mbeya, where farming is organic, they will introduce organic methods for increasing soil fertility. In Morogoro where farming is not organic, they will aim to reduce the amount of chemical inputs used on-farm.

PASTORALIST PROGRAMME: SUPPORT TO PASTORAL CIVIL SOCIETY ORGANISATION AND COMMUNITIES TO IMPROVE LIVELIHOOD AND MITIGATE CLIMATE CHANGE

The goal of this programme is to reduce the poverty and vulnerability of pastoralist communities in Tanzania. The pastoralist strategy of flexible tracking of resources is well-adapted to short-term climate variability and is a pre-condition for adaptation to more frequent extreme events and long-term climate changes. By promoting and supporting pastoralism as an adaptive and resilient way of life, this project contributes to adaptation to climate change. By promoting local livestock landraces¹ which have greater resilience to drought, this project also supports biological diversity.

MVIWATA; STRENGTHEN LOBBYING AND FARMERS NETWORKS, CAPACITY OF FARMERS

This programme supports the Network of Small-Scale Farmers' Groups in Tanzania. The focus of this programme is the strengthening of farmer groups and networks at all levels including through capacity building, economic empowerment and advocacy. Climate change has caused increasing concern and exacerbates existing problems. These are manifested in increasing food insecurity, conflicts over land use and struggle for land between investors and small, native producers. This programme builds the knowledge and training of farmers in climate change and mainstreams climate change and environmental concerns in MVIVATA strategy and policy. Weak natural resource management is also addressed.

SNV: OIL SEEDS VALUE CHAIN PROJECT; IMPROVING PRODUCER ASSOCIATION AND OIL SEED VALUE CHAIN AND MARKETS

The programme promotes edible oilseeds such as sunflower and sesame seeds to support improved household nutrition and food security in poor communities. Sunflower and sesame seeds were chosen for this project for their potential for increased processing capacity, income and employment, and for being climate smart crops.

INCREASE INCOME OF POOR HOUSEHOLDS THROUGH JOB CREATION (AMDT)

The overall objective of the AMDT is to increase the incomes and employment opportunities of poor women, men and young people in agricultural value chains in Tanzania including through increasing the ability of smallholder farmers and related

¹ Livestock landraces are a local variety of a domesticated plant or animal species which has developed adaptation to the natural and cultural environment in which it lives.

MSMEs to compete and prosper in selected agricultural markets, and improving the enabling environment. Agricultural markets were selected based on criteria that included inter alia 'weather resilience', green growth potential, food security, and addressing of environmental concerns. The project will assess the selected agricultural markets' "resilience under changing precipitation and temperature patterns" and aims to raise the ability of CSOs and the private sector to assess and respond to environmental risks.

INSTALL SOLAR WATERSYSTEM & DEVELOPMENT POULTRY PROJECT

Irish Aid funded the Pallotine Rehabilitation Centre, in the Singida district, to install a solar water system and develop poultry. The main aim of the centre is to help those with intellectual special needs to have access to primary school education and education in the wider sense, giving them the opportunity to mix socially with others, to learn everyday tasks and to develop the "skills" necessary for life. Physical and occupational therapies are also provided.

IRISH AID FUNDING TO IRISH CIVIL SOCIETY PROGRAMME PARTNERS IN TANZANIA

The following disbursements by Irish Aid were identified as relevant to climate change, environment and/or disaster risk reduction by the beneficiary CSOs but are not included in Ireland Climate finance reports;

- Irish Aid disbursed €308,572 to promote the economic empowerment of marginalised women and men through secure access to land and other productive and/or natural resources;
- Irish Aid disbursed €63,200 to support Oxfam Ireland to strengthen coping mechanisms in targeted pastoralist communities through support for the development of early warning systems and drought cycle management plans;
- Irish Aid disbursed €21,024 to World Vision to improve water and sanitation access and practices at household level.

MAPPING OF BILATERAL EXPENDITURE

| Project/Programme | Recipient | 2014 Disbursed / provided | CC Mit | CC Ad | CBD | CCD | Agri | DRM | CB | TT | Forestry & Agroforestry | Total Climate Accounting Weight | Total Accounted Climate Amount | Mitigation Total | Adaptation Total | Cross- cutting Climate Change |
|---|---|---------------------------------|-----------|----------|-----|-----|------|-----|----|----|----------------------------|--|---|---------------------|---------------------|--|
| Agriculture Sector Development Programme (ASDP) | Ministry of Agriculture, Food Security and Cooperatives | 45,000 | 1 | 1 | 1 | 1 | 2 | 1 | 2 | 2 | 1 | 50% | 22,500 | 0 | 0 | 0 |
| Cocoa value chain; developing a high quality cocoa value chain improving production and market access | Technoserve | 1,000,000 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 50% | 500,000 | 0 | 0 | 0 |
| Support to pastoral CSO and communities to improve livelihood and mitigate against climate change | CARE International | 500,000 | 1 | 1 | 1 | 0 | 1 | 0 | 2 | 0 | 1 | 50% | 250,000 | 0 | 0 | 0 |
| MVIWATA; strengthen lobbying and farmers networks, capacity of farmers | MVIWATA; small holder farmers and farmer's networks | 300,000 | 0 | 1 | 0 | 0 | 2 | 0 | 2 | 2 | 0 | 50% | 150,000 | 0 | 150,000 | 0 |
| SNV: oil seeds value chain project; improving producer association and oil seed value chain and markets | SNV: Tanzania | 500,000 | 1 | 1 | 0 | 1 | 2 | 0 | 2 | 1 | 0 | 50% | 250,000 | 0 | 0 | 0 |

| Project/Programme | Recipient | 2014 Disbursed / Provided | CC Mit | CC Ad | CBD | CCD | Agri | DRM | CB | TT | Forestry & Agroforestry | Total Climate Accounting Weight | Total Accounted Climate Amount | Mitigation Total | Adaptation Total | Cross-cutting Climate Change |
|---|--|---------------------------|--------|-------|-----|-----|------|-----|----|----|-------------------------|---------------------------------|--------------------------------|------------------|------------------|------------------------------|
| Increase Income of Poor Households through Job Creation | Agricultural Market Development Trust (AMDT) | 730,000 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 50% | 365,000 | 0 | 365,000 | 0 |
| Install solar water system & develop poultry project | Pallotine Rehabilitation Centre | 8,000 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 50% | 4,000 | 4,000 | 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 four and in the table 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 Marker² 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.

² An OECD DRR marker definition 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.