



Christopher and Matilda of the Mynororo Sunflower Producers Group, Chunya district, Mbeya, Tanzania.
Photo: Irish Aid

TANZANIA CLIMATE ACTION REPORT FOR 2015

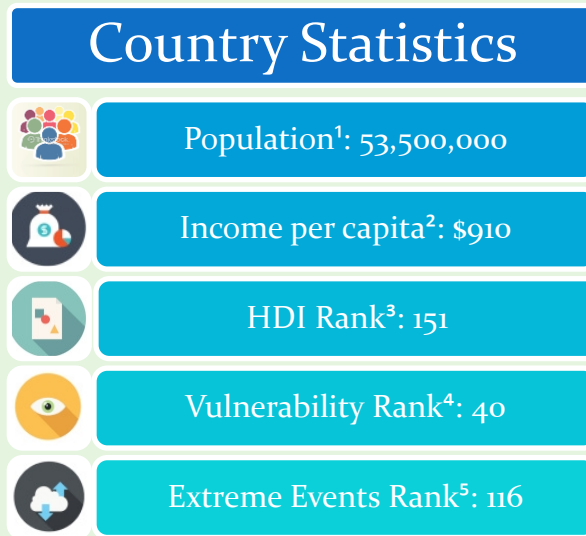
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COUNTRY CONTEXT

With a total area of 945,087 square kilometres and with an estimated population of over 53 million, Tanzania is one of the largest countries in East Africa. 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. In the last 40 years Tanzania has experienced severe and recurring droughts with devastating effects to agriculture, water and energy sectors. Currently more than 70% of all natural disasters in Tanzania are climate change related and are linked to recurrent droughts and floods. Tanzania published its National Climate Change Strategy in 2012, to address both adaptation and mitigation in line with the country's vision for sustainable development.



Map of Tanzania, Irish Aid, 2015

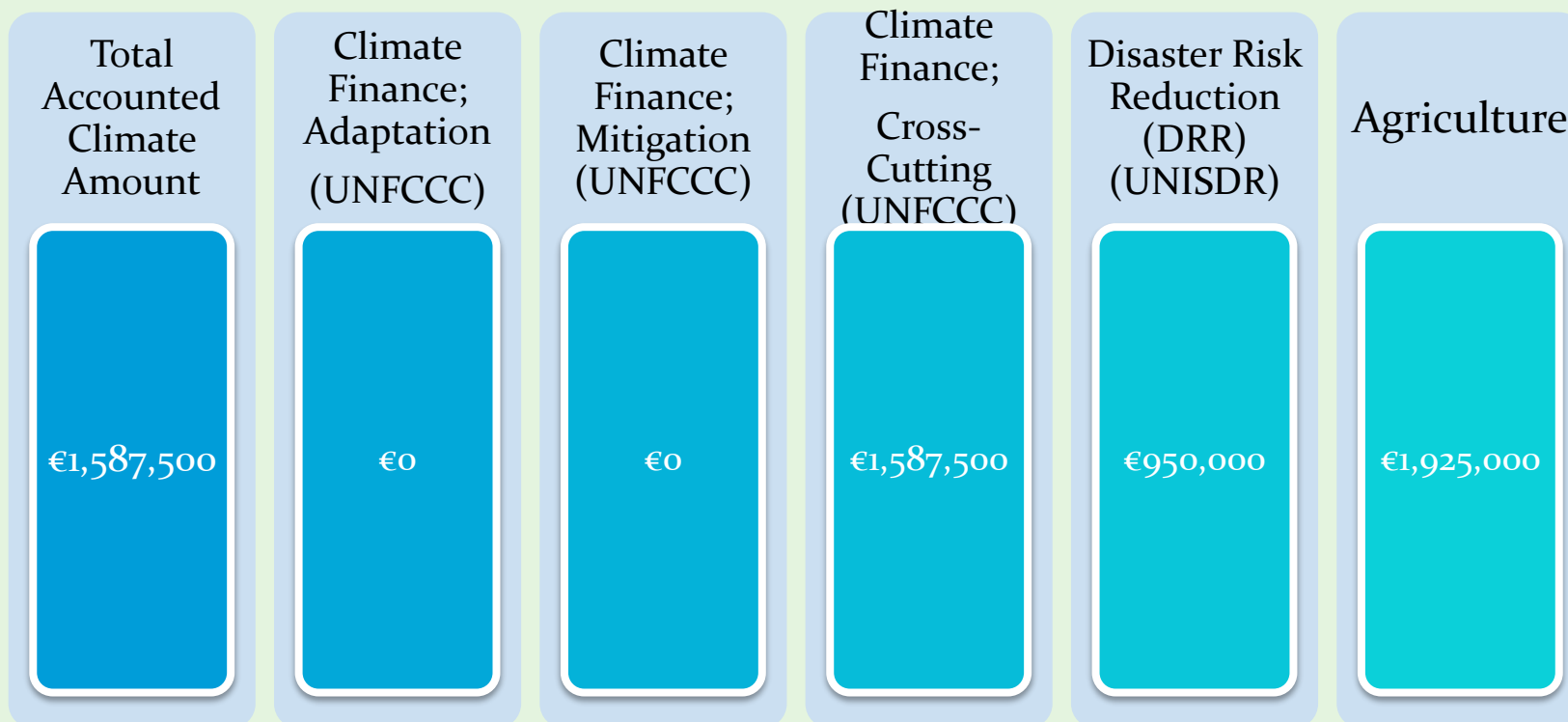
1 <http://data.worldbank.org/indicator/SP.POP.TOTL?locations=TZ>

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

3 <http://data.worldbank.org/indicator/SP.POP.TOTL?locations=TZ>

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

5 <https://germanwatch.org/en/download/13503.pdf>



The agriculture sector is vital to the success of the economy, accounting for 25% of GDP and 24% of exports. Moreover, 75-80% of Tanzanians earn their livelihood through smallholder agriculture, making it important to mainstream climate change adaptation measures within agricultural development strategies. In 2014, the Ministry of Agriculture, Food Security, and Co-operatives published an Agriculture Climate Resilience Plan to outline the risks climate change poses to agriculture in Tanzania, as well as a strategy for sustainable agricultural development and adaptation. Ireland contributed €1,587,500 in climate finance to Tanzania in 2015. Agriculture remains a strong focus with funding for agriculture related projects amounting to €1,925,000 in 2015.

Climate Finance, Agriculture 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 15-17.

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 produced a National Adaptation Programme of Action (NAPA) in 2007. 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.

The agriculture sector is vital to the success of the economy, accounting for 25% of GDP and 24% of exports. Approximately 75-80% of Tanzanians earn their livelihood through smallholder agriculture, making it important to mainstream climate change adaptation measures within agricultural development strategies.

Following the publication of the National Climate Change Strategy in 2012, the Ministry of Agriculture, Food Security, and Co-operatives (MAFC) developed a sector specific response in the Tanzania Agriculture Climate Resilience Plan published in 2014. A risk assessment detailed in the Plan, identifies three priority risks:

- (i) amplified water stress;
- (ii) decreased crop yield, and
- (iii) increased vulnerability of smallholder farmers.

The plan outlines four “priority resilience actions:”

- (i) improving agricultural land and water management,
- (ii) accelerating uptake of climate smart agriculture (CSA),
- (iv) improving risk management to reduce climate-related shocks, and
- (v) strengthening knowledge and systems to target climate action.

Specific policy highlights aimed at addressing the former include: the establishment of pest, disease, and early warning systems; the development of policy briefs and financial incentives to assist with mainstreaming CSA into agricultural programmes; the updating of irrigation master plans to consider availability and climate; incentivising the development of water management technologies.

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>

London School of Economics - Grantham Research Institute 2015 Climate Legislation Study – Tanzania <http://www.lse.ac.uk/GranthamInstitute/legislation/countries/tanzania/>

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:

PASTORALISTS ADAPTING TO CLIMATE CHANGE IN TANZANIA

“Some 20 years back we had consistent and reliable rainfall, plenty of food, water and pasture for livestock” said Mr. Leiyoo.

Mr. Leiyoo is a 36 year old Tanzanian pastoralist living at Dihamba village of Mvomero district in Morogoro region. He benefited from climate change training conducted by UMWEMA in 2013 through Irish Aid funded Pastoralist Programme implemented by CARE and TNRF. He explained: **“Weather patterns changed drastically in the 2000’s with notable erratic and unpredictable rainfall, floods and prolonged droughts”.**

This negatively affected livelihoods with devastating effects on water and pasture availability for livestock. Traditionally, we relied on mobility as a coping strategy although practically we faced land conflicts, suffering from livestock diseases and deaths attributed to long travel distance in search of water and pasture. **“I lost 20 cattle in 2003 and 10 last year due to drought”.**

UMWEMA training excitingly awakened me to undertake these climate adaptive strategies:-

- Selling old and weak animals for purchasing replacement stock and feed supplements;
- Constructed a 375 m² and 16 m depth chaco dam and water trough in November 2015 spending TZS 6,500,000¹ (€ 2,608.60) in total. **“Am proud the dam is so helpful to me and community at large”.**
Specifically:-
 - Improved animal health, reduced stress and drudgery experienced through 4 km travel to livestock watering point;
 - Saved time and energy for other productive activities;
 - Reduced disputes and strengthened social fabric with farmers;

Potable water has been provided to around 60 households, a saving of about TZS 3,500¹ (€ 1.40623) previously spent per day in buying water in dry season. **“I’m passionately serving my fellow community members to access this basic need”.**



Mr Leiyoo with his cattle. Photo: John Joseph Coba/UMWEMA

KEY PARTNER COUNTRY'S BILATERAL PROJECTS AND PROGRAMMES

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

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.

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.

ANSAF: TRAINING FOR LOCAL LEVEL LEADERS ON CLIMATE CHANGE

The aim of the project is to provide training for local level leaders to sensitise citizens on climate change adaptation and mitigation measures with major emphasis conservation agricultural practises and growing climate resilient crops.

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.

REPOA: RESEARCH ON AGRICULTURE POLICY IMPLEMENTATION AND PERFORMANCE

This is a research project on agriculture public policy implementation to provide information on the agricultural sector performance particularly in terms of production, productivity and profitability from the perspective of recent investment.

FAO: SMALL AREA STATISTICS ESTIMATES

This is a 2 year project (2015-2017) undertaken by FAO with the Ministry of Agriculture, Food Security and Fisheries. The aim is to support the implementation of Tanzania's Agriculture Statistics Strategic Plan: Improving district level data using Small Area Estimates methods on the Tanzania mainland.

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 provided €306,000 to Oxfam Ireland to promote the economic empowerment of marginalised women and men through secure access to land and other productive means and/or natural resources;
- Irish Aid disbursed €61,200 to support Oxfam Ireland to strengthen coping mechanisms in targeted pastoralist communities through support for the development of early warning systems;
- 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	2015 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
Cocoa value chain; developing a high quality cocoa value chain improving production and market access	Technoserve	900,000	1	1	1	2	2	1	2	1	2	50%	450,000	0	0	450,000
Support to pastoral CSO and communities to improve livelihood and mitigate against climate change	CARE International	500,000	2	2	1	1	1	0	1	0	1	50%	500,000	0	0	500,000
MVIWATA; strengthen lobbying and farmers networks, capacity of farmers	MVIWATA; small holder farmers and farmer's networks	225,000	1	1	0	0	2	0	2	2	1	50%	112,500	0	0	112,500
Training for local level leaders to sensitise citizens on climate change adaptation and mitigation	ANSAF members organisations and small-holder farmers	100,000	1	1			1	0	1	0	0	50%	50,000	0	0	50,000

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	250,000
Research on agriculture public policy implementation and performance	REPOA/ Small scale farmers	200,000	1	1	0	0	0	0	0	0	0	50%	100,000	0	0	100,000
Small Area statistics estimates to support to the Implementation of Tanzania's Agriculture Statistics Strategic Plan:	FAO/Ministry of Agriculture Food Security and Fisheries	250,000	1	1	0	0	0	0	0	0	0	50%	125,000	0	0	125,000

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.