Luchimua bridge, Niassa province. Photo: Irish Aid

MOZAMBIQUE CLIMATE ACTION REPORT FOR 2015

Climate Policy | Irish Aid | September, 2016

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COUNTRY CONTEXT

Mozambique is on the south-east coast Africa and covers a territorial area of 799,380 square kilometres and has a population of approximately 28 million. It has a tropical to subtropical climate, with some semi-arid regions in the southwest of the country. The east consists of lowlands while the west is more mountainous. Mozambique has a coastline of approximately 2,700 kilometres. Annual temperature has increased by 0.6C degrees from 1960 to 2006 and has a projected increase of between 1.0 to 2.8C degrees by the 2060s (McSweeney et al, 2010). Generally, projections suggest that the climate may become more extreme, with hotter drought spells and more extreme floods. The central zone is likely to be hardest hit, especially at low altitudes (INGC, 2009).

Country Statistics

- Population[1]: 28,000,000 (est.)
- GNI per capita[2]: $580
- HDI Rank[3]: 180
- Vulnerability Rank[4]: 31
- Extreme Events Rank[5]: 23

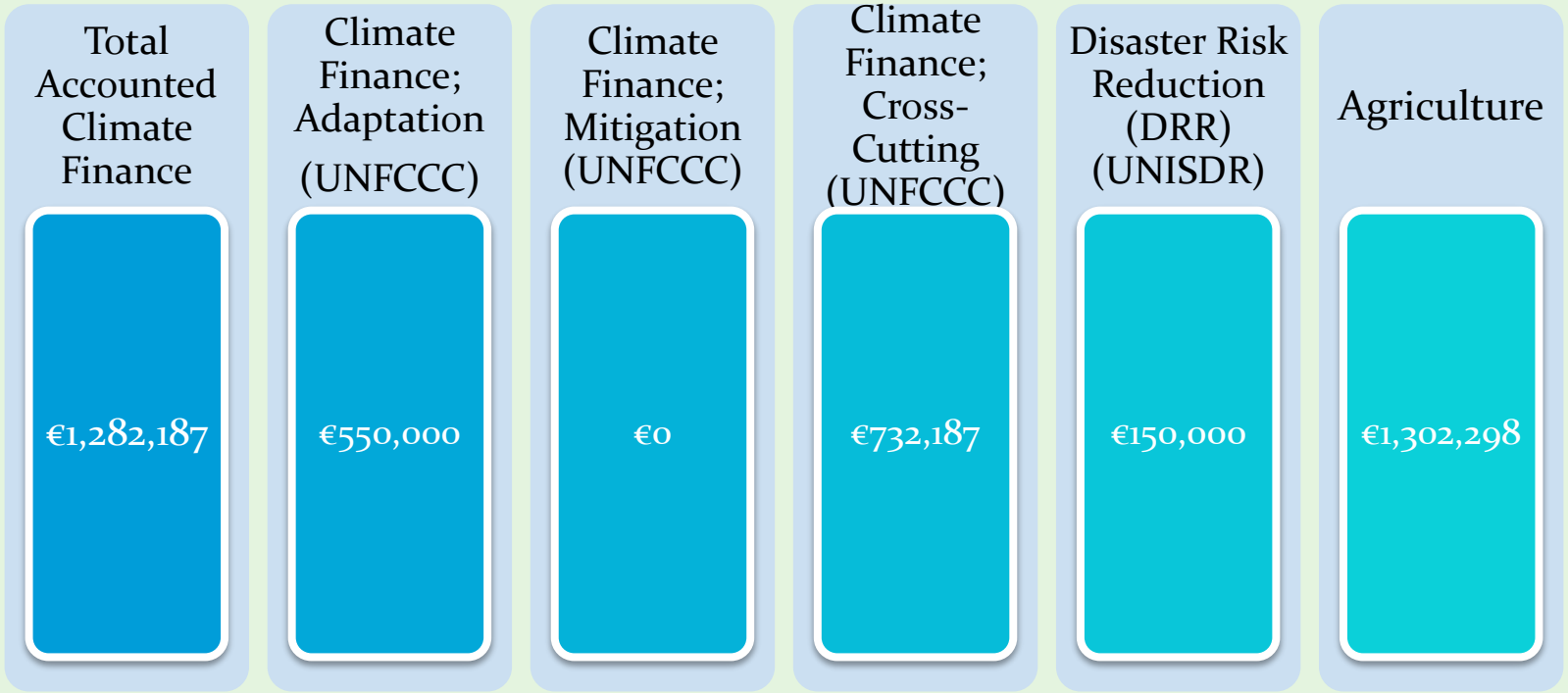
1 http://data.worldbank.org/country/mozambique

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

3 http://hdr.undp.org/en/countries/profiles/MOZ

4 http://index.gain.org/country/mozambique

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



Mozambique's vulnerability is to a large extent due to its dependence on agriculture, which contributes about 25% of its GDP and employs 80% of its labour force. Most of the country's agricultural production is done by small-scale subsistence farmers and 95% of food production is rain-fed and highly dependent on natural resources that may be decreased or degraded due to climate change.

Ireland contributed approximately €1,282,187 in Climate Finance to Mozambique in 2015. Agriculture remains a strong focus with funding for agriculture related projects amounting to €1,302,298 in 2015.

Climate finance, DRR and agriculture 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.

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

Mozambique's First National Communication to the UNFCCC was submitted in 2006. As a Least Developed Country (LDC) in the UNFCCC, Mozambique published a National Adaptation Programme of Action (NAPA) in 2007, identifying the most vulnerable areas to climate change, and proposing immediate actions to promote adaptation to these urgent issues. In 2012, the Mozambique Government published its National Climate Change Strategy 2013-2025. This strategy widened the government's approach to climate change in proposing actions that combine measures of adaptation and mitigation with the development of a low-carbon economy. The strategy provides a policy framework for climate priorities identified at sector, provincial and district levels.

In September 2015, Mozambique submitted its Intended Nationally Determined Contribution (INDC) to the UNFCCC.

RECENT CLIMATE TRENDS IN MOZAMBIQUE

The country-wide average annual temperature increased by 0.6C between 1960 and 2006 (McSweeney et al, 2010). The increase had been observed in all months except September – November. The centre of the country saw increases of up to 1.6C and an increase of 1.1C was recorded in the north (INGC, 2009). The frequency of hot days and hot nights has increased significantly since 1960. Average annual rainfall has decreased at a rate of 2.5mm per month between 1960 and 2006 (McSweeney et al, 2010). Despite this decrease, the proportion of rainfall falling in heavy events has increased significantly with the largest increases in the wet season of December to February (IPCC, 2014). There are also indications of a later start to the rainfall season and an increase in the length of drier spells (INGC, 2009).

PROJECTIONS OF FUTURE CLIMATE IN MOZAMBIQUE

The average annual temperature is projected to increase by 1.0C to 2.8C by the 2060s. The projected rate of warming is more rapid in the interior regions of Mozambique than the coastal areas. All projections indicate substantial increases in the frequency of days and nights that are considered 'hot' in the current climate (McSweeney et al, 2010). By mid-century (2046-2065), the greatest increase is expected in inland areas of 2.5 to 3C (INGC, 2009).

Projections of average annual rainfall do not indicate substantial changes. However, seasonal changes are expected, tending towards decreased rainfall in the dry season which is offset partially on an annual basis by an increase in rain in the rainy season (McSweeney et al, 2010). Higher increases in rainfall are suggested for coastal areas but increases in

precipitation are less than the expected increases in evapotranspiration from June-November (INGC, 2009).

It is expected that the dry season will become drier across the country by 2055 which may lead to decreased soil moisture before the main cropping season starts (INGC, 2009). All models are consistent in showing that the proportion of total rainfall that falls in heavy events from December through to May is projected to increase. Tropical cyclones are generally expected to increase in intensity but it is unclear whether frequency or storm path will also be impacted. Tropical cyclones could in fact add to already projected increases in wet-season rainfall. There is insufficient data to assess recent trends in cyclones but climate models suggest a decreasing frequency of tropical cyclones but an increase in intensity.

Generally, projections suggest that the climate may become more extreme, with hotter drought spells and more extreme floods. The central zone is likely to be hardest hit, especially at low altitudes (INGC, 2009). Furthermore, Mozambique's coastal regions are likely to be impacted by sea-level rise, although data on sea-level rise in Mozambique is very limited (INGC, 2009).

ADAPTATION

As a Least Developed Country (LDC), Mozambique submitted its National Adaptation Programme of Action (NAPA) to the UNFCCC in July 2008. The NAPA, in accordance with UNFCCC guidelines, was developed based on a participative process in which the most vulnerable regions, sectors and communities to climate change and poverty were consulted and prioritised. The NAPA presents the most immediate and urgent needs of the country that have emerged from this consultation process.

Mozambique is vulnerable to climate change due to its geographic location which consists of approximately 2,700 kilometres of coastline, at the confluence of many international rivers flowing into the Indian Ocean, and extensive land area that is under sea level. In addition, Mozambique has high temperatures, aridity, infertile soils, many endemic diseases, lack of communication infrastructure, high levels of illiteracy, a high population growth rate, absolute poverty and a high dependence on natural resources that are dependent on precipitation. Agriculture, livestock and fisheries are the most important sectors of the economy, with agriculture representing 80 percent of the country's labour force.

The NAPA identifies four high level priority actions for Mozambique;

- Strengthening of an early warning system;
- Strengthening capacities of agricultural producers to cope with climate change;
- Reduction of climate change impacts in coastal zones; and
- Management of water resources under climate change.

These actions are further elaborated in the NAPA.

In 2012, Mozambique approved its National Strategy for Climate Change (2013-2025). The overall objective of which is to "establish guidelines for action to build resilience, including

the reduction of climate risks for the communities and the national economy and promote the development of low carbon and green economy, through their integration in the sectorial and local planning processes". The specific objectives are to:

(i) become resilient to the impacts of climate change in Mozambique, while minimizing climate risks to people and property, restoring and ensuring the rational use and protection of the natural and built capital;
(ii) identify and implement opportunities to reduce Green House Gas (GHG) emissions that contribute to: sustainable use of natural resources, access to financial resources and technological affordable resources; and the reduction of pollution and environmental degradation by promoting low-carbon development; and
(iii) build the institutional and human capacity as well as exploring opportunities to access technology and financial resources to implement the national climate change strategy.

IRISH AID'S BILATERAL PROGRAMME IN MOZAMBIQUE AND CLIMATE CHANGE

Irish Aid's Country Strategy Programme (CSP) for Mozambique specifically addresses climate change as a key component of a comprehensive approach to addressing vulnerability in Mozambique. High dependence on unproductive agriculture and few alternative livelihoods leaves populations particularly vulnerable to stresses and shocks. This is exacerbated by the impacts of climate change. A key outcome for the CSP is increased capacity for mitigation and adaptation at local level. Climate change is a particular focus in Inhambane province. Activities supported through the bilateral aid programme are described in more detail below.

Outside of the bilateral aid programme, Ireland also supported the Environment Sector programme Support (ESPS) Phase II and the Poverty and Environment Initiative (PEI) in Mozambique.

RESOURCES:

INGC (2009); Study of the Impact of Climate Change on Disaster Risk in Mozambique, Phase I Synthesis Report; National Institute for Disaster Management, Available at: http://ingc.dirisa.org/
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 Mozambique: http://www.geog.ox.ac.uk/research/climate/projects/undp-cp/index.html?country=Mozambique&d1=Reports
National Adaptation Programme of Action, Mozambique (2008); http://unfccc.int/resource/docs/napa/moz01.pdf

INTENDED NATIONALLY DETERMINED CONTRIBUTION (INDC) OF MOZAMBIQUE TO THE UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE (UNFCCC)

Mozambique's INDC aligns with its National Climate Change Adaptation and Mitigation Strategy (NCCAMS) where the national priority is defined in its mission "***to increase resilience in the communities and the national economy including the reduction of climate risks, and promote a low-carbon development and the green economy through the integration of adaptation and mitigation in sectorial and local planning***". Therefore, Mozambique's INDC covers both mitigation and adaptation activities that Mozambique intends on implementing between 2020 and 2030.

Mitigation: Mozambique estimates, on a preliminary basis, a total reduction of about 76,5 MtCO2eq in the period from 2020 to 2030, with 23,0 MtCO2eq by 2024 and 53,4 MtCO2eq from 2025 to 2030. These reductions are estimates with a significant level of uncertainty and will be updated with the results from the Biennial Update Report (BUR) which will be available in early 2018. Mozambique's INDC highlights that the implementation of any proposed reduction is conditional on the provision of financial, technological and capacity building from the international community.

Adaptation: The National Climate Change Adaptation and Mitigation Strategy (NCCAMS) identifies adaptation and the reduction of the climate risk as a national priority and presents eight strategic actions aimed at creating resilience and reducing the climate risk in the communities, ecosystems and national economy. The eight strategic actions are aimed at; reducing climate risk, water resources, agriculture, fisheries and food security and nutrition (SAN), social protection, health, biodiversity, forests and infrastructure.

Monitoring and Evaluation: The Government of Mozambique has approved the National System to Monitor and Evaluate Climate Change and this will be used for the Measurement, Reporting and Verification (MRV) of the adaptation actions. This system is currently being tested and will be functioning before 2020 and onwards.

Fairness, equity and ambition: Mozambique's historical GHG emissions are relatively low compared to the global total. Mozambique is willing to create adaptive capacity and face the national challenges of reducing poverty, including those of the most vulnerable.

Mozambique recognizes that achieving resilient and low carbon development can be a catalyser to reduce poverty and diminish the inequalities towards the most vulnerable. Therefore, the implementation of the INDC will include the most vulnerable communities, promoting an inclusive climate proofed development, with a higher degree of access to efficient technologies and cleaner energy sources, promoting environmental integrity and the creation of green jobs.

Mozambique intends to update its National Adaptation Plan (NAP) in the medium (2020 to 2025) and long (2026 to 2030) terms. Therefore, from 2020 to 2025, the country intends to increase its resilience at the provincial level and to include adaptation in provincial planning. From 2026 to 2030, Mozambique intends to increase resilience at the national level, achieving in this way the vision of the NCCAMS – ***"A prosperous and climate change resilient Mozambique, with a green economy in all social and economic sectors".***

SUPPORTING SMALL FARMERS FACE DROUGHT THROUGH AGRICULTURAL INPUT TRADE FAIRS

2015 brought many challenges to Mozambique and to its rural population that depends largely on family farming activities to survive. The global El Niño phenomenon began changing weather conditions. The southern part of the country is the most affected, having received less than 50% of normal rainfall in 2015.

Funhalouro and Homoíne districts in Inhambane province are two of the most affected areas. Some water wells dried up, others turned salty/brackish. Families lost not one, but two or more planting seasons during the year leaving them with little or no food, let alone seeds to plant again.

Affected households reduced their daily food consumption (from 3 to 2 times a day). They relied increasingly on alternative means such as harvesting wild fruits, selling household assets (chickens, livestock) and migrating to find water sources.

Irish Aid joined efforts with Care International to quickly respond to this crisis in coordination with the Provincial Government of Inhambane through Input Trade Fairs (ITF). The fairs were all about ensuring that smallholder farmers experiencing drought, whose food and seed stocks were depleted, were able to access the necessary inputs for the next agricultural season. No seeds to plant, no food to harvest.

Four thousand smallholders were assisted through a voucher system. A renewed hope came over them as they gained access to peanuts (47,2 Kg), sorghum (19,4 Kg), cowpea (4,7 Kg), machetes (7,900 units) and hoes (8,800 units). Assistance also included training of community volunteers to recognize malnutrition and undertake nutritional counselling for families.

The Drought Response through Input Trade Fairs with funding from Irish Aid of €200,000 was coordinated to take advantage of rainfall in end 2015, increasing the possibility of successful planting of short cycle drought tolerant crops. Even though some farmers saw their fields green and thriving, again rainfall was low which heavily reduced harvest yields. Still, total food production was estimated at 382 tons of peanut, 85 tons of sorghum and 74 tons of cowpea.

Irish Aid's prompt emergency intervention was catalytic leading Provincial Government and other donors to quickly plan and approve their interventions as a complementarity to Irish Aid's initiative. This action **was considered by the Council of Ministers of Mozambique as an example of good practice in terms of swift response** and widely disseminated in the media.

Smallholder farmers obtaining inputs as part of the agricultural trade fairs, Inhambane Province. Photo: Irish Aid

KEY PARTNER COUNTRY'S BILATERAL PROJECTS AND PROGRAMMES

ARENA - AGRICULTURE AND NATURAL RESOURCES (2013-2016)

ARENA aims to address the main problems identified for Niassa which include low productivity, undiversified agriculture with low economic profit, access to land and threatened natural resources. The aim is to improve outcomes in application of sustainable and climate adaptive agricultural techniques. ARENA promotes good natural resource and environmental management as a means to tackle poverty reduction and economic growth. ARENA also promotes natural resource management through enhanced agroforestry techniques. Activities identified for the project include training of farmers on conservation agriculture, adaptation techniques including resistant food crops and diversification, soil conservation, early warning systems and renewable energy sources.

PROVINCIAL MULTIANNUAL PLAN FOR THE AGRICULTURE SECTOR, INHAMBANE (2014-2016)

Inhambane is prone to cyclical floods and droughts, which have become more frequent and intense over recent years. A high percentage of the provincial population is dependent on subsistence agriculture and natural resource extraction. The Provincial Directorate of Agriculture (DPA) of Inhambane has 4 priorities of which the third is natural resource management with an objective to promote the sustainable use of land, forestry and wildlife. The plan specifies increased capacity at the local level for mitigation and adaptation to climate change. Specific activities include promotion of conservation agriculture, planting of coconut trees to help preserve soil, promoting drought resistant crops, education and training of natural resource management committees, and legislation for forests and community lands.

MULTIANNUAL PROVINCIAL SUPPORT TO WATER AND SANITATION IN INHAMBANE PROVINCE (DPOPH 2014-2016)

Inhambane is prone to cyclical floods and droughts, which have become more frequent and intense over recent years. The Directorate of Public Works and Housing's (DPOPH) first priority is to ensure sustainable water resources management, in combination with the availability of water and sanitation for socioeconomic activities. The programme's main objective is to increase the coverage of safe drinking water in rural districts, vulnerable to climate change and natural disasters. Activities specified under this priority include the construction of community cisterns for rain water harvesting in drought prone communities and support to the construction and rehabilitation of boreholes for safe drinking water (built with solar panel pumps), rehabilitation of small systems for water supply in villages, construction of sanitation demonstration centres and latrines, and provision of institutional

support through training of WASH technical staff from districts, and the purchase of equipment required for improved performance in programme implementation.

BUILDING A COMPETITIVE HORTICULTURE CLUSTER & REVITALISING THE COCONUT SECTOR

The aim of this project (2013-2017) is to stimulate growth of the agricultural economy and enhance long-term resilience of the poorest households by improving productivity of horticulture and in particular, coconut trees through re-planting and intercropping. This is expected to lead to increased productivity due to improved soil fertility while also building the capacity of the Provincial Directorate of Agriculture (DPA). Climate change is recognised within the project with an early objective to increase capacity for mitigation and adaptation at the local level.

Farmers will also receive training in organic farming techniques, improved crop rotation techniques and improved water management and irrigation for conservation of water resources thus contributing both to protection of bio-diversity and combatting desertification.

CARE INTERNATIONAL FOOD SECURITY PROJECT INHAMBANE PROVINCE

CARE International in joint partnership with the local government and civil society organisations is implementing PROSAN, a 5 years program in 2 districts in Inhambane province (Homoine and Funhalouro), covering 23 community villages (15 in Funhalouro and 8 in Homoine) with a total of 28,875 participants (5,250 poor and food insecure households, of which 80% are women) *experiencing food and nutritional insecurity and high dependency on natural resources.*

Low agricultural production, the dependence on farm and natural resource based incomes and limited climate change adaptive capacity are addressed in an effort to reduce the poverty and vulnerability of targeted communities and increase resilience to climate shocks. This multi-faceted process involves several strategies that include conservation agricultural techniques, diversification and greater control of income sources in order to safeguard the food security and nutritional status of families. Addressing the underlying causes of vulnerability is therefore a fundamental component of PROSAN's framework.

Aimed at strengthening the food security status of 4,000 vulnerable, agriculture-based households already being targeted by PROSAN in two of the most severely drought affected districts (Funhalouro and Homoine) by *restoring 4,000 HH smallholders food production through agricultural input trade fairs* with provisions of drought resistant seeds (72 tons) and farm hand tools (12,000) and nutrition-specific interventions to improve the nutrition status of participating households (including skills training for 350 community volunteers and food preparation sessions conducted in 50 Farmer Field Schools to enhance nutrition counseling at HH level).

MUNICIPAL DEVELOPMENT PROGRAMME (PRODEM) FOR NORTH AND NORTH-CENTRAL MOZAMBIQUE (2015-2018)

The overall objective of PRODEM is to contribute to urban poverty reduction and sustainable development of the municipalities, through improvements in municipal governments' administration and service delivery, resilience to climate change impact, social accountability and citizen participation. The main sub-objectives include "*Responsible municipal governance: municipalities with improved urban management, enhanced climate change resiliency, better provision of key services and citizens aware of their rights and duties enabled to hold municipal governments accountable*". This pillar entails a specific component on urban management for improved climate resilience. The aim for PRODEM is to cover up to 26 municipalities.

IMPROVING VITAMIN A AND ENERGY INTAKE OF RURAL HOUSEHOLDS IN NIASSA WITH DROUGHT TOLERANT ORANGE FLESHED SWEET POTATO (OFSP)

The overall objective of this project is to improve vitamin A and energy intake for at least 20,000 rural households directly, in four districts of Niassa Province and up to 80,000 rural households indirectly. The project aims to improve vitamin A and energy intake through increasing more drought tolerant OFSP varieties, and strengthening the resilience and livelihoods of vulnerable households, particularly pregnant women, women of reproductive age and young children less than 2 years old. OFSP's flexible planting and harvest times and its relatively short maturing period compared to maize means that it is considered a crop which strengthens the resilience of households facing fluctuations in grain output.

The project promotes full integration of OFSP into provincial and district level policies and programs and into other community-based development programs with the aim of ensuring that at least 20% of households growing OFSP earn 50 USD or more per year from OFSP sales, and increase average sweet potato yields by 50%.

IRISH AID FUNDING TO IRISH CIVIL SOCIETY PROGRAMME PARTNERS IN MOZAMBIQUE

The following disbursements by Irish Aid were identified as relevant to climate change and/or disaster risk reduction by the beneficiary CSOs but are not included in Ireland Climate Action Reports:

- Irish Aid provided €500,000 in support for Concern Worldwide to ensure key government and private sector actors use evidence from the programme to adapt and improve service delivery to the extreme poor and increase food security for extreme poor households;

- Irish Aid provided €200,000 to support Concern Worldwide in reducing vulnerability and increasing capacity of poor farm families to respond to hazards.
- Irish Aid provided €200,000 to Concern Worldwide to ensure that extreme poor priorities are integrated into Government Nutrition and Social Protection Policy and Strategy

IRISH AID BUDGET SUPPORT

Irish Aid also contributed €8,000,000 budget support in 2015 which includes support for implementation of climate priorities. As it is not possible at this time to determine the extent to which this is focused on climate objectives, it is not included in climate finance figures here.

MOZAMBIQUE 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
Multiannual provincial support to water and sanitation in Inhambane province (DPOPH 2014-2016)	DPOPH Inhambane Province	200,000	0	2	0	1	0	0	1	0	0	100%	200,000	0	200,000	0
ARENA - Agriculture and Natural Resources (2013-2016)	We Effect, Niassa Province	200,000	1	1	1	1	1	0	1	1	1	50%	100,000	0	0	100,000
Provincial multianual plan for the agriculture sector (DPA) Inhambane (2014-2016)	DPA Inhambane	300,000	0	1	0	1	2	0	1	1	0	50%	150,000	0	150,000	0
Building a Competitive Horticulture Cluster & Revitalising the Coconut Sector	Tecnoserve (TSN)	524,152	1	1	1	1	1	0	1	1	0	50%	262,076	0	0	262,076

Municipal Development Programme (PRODEM) for North and North-Central Mozambique (2015-2018)	PRODEM, central & north Mozambique	300,000	1	1	0	0	0	1	1	1	0	50%	150,000	0	0	150,000
Improving vitamin A and energy intake of rural households in Niassa with drought tolerant Orange Flesh Sweet Potato	International Potato Center (CIP)	440,223	1	1	0	0	2	0	1	1	1	50%	220,112	0	0	220,112
To strengthen the food security status of vulnerable, agriculture-based households in drought affected districts	CARE International Inhambane Province	200,000	1	2	0	1	2	0	1	1	0	100%	200,000	0	200,000	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 Marker[1] 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.

[1] 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.