Children gather around a water pump in Niassa province. Photo: Irish Aid

MOZAMBIQUE CLIMATE ACTION REPORT FOR 2016

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

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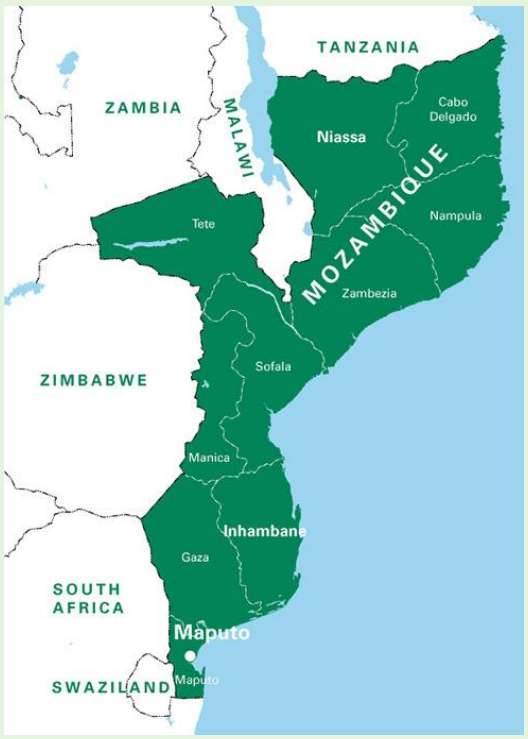
COUNTRY CONTEXT

Mozambique is on the south-east coast of 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 is one of Africa's most vulnerable countries to climate change. The Notre Dame Global Adaptation Initiative (ND-GAIN) Index ranks Mozambique as the 31st most vulnerable and 32nd least ready to adapt to climate change, of the countries it covered for 2015. It is exposed to a number of extreme weather events including droughts, floods and tropical cyclones. Mozambique has a long coastline of about 2700 km, with more than 60% of its population living in coastal areas, exposing large numbers of people to sea-level rise and climate extremes.

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. Destruction to crops from extreme weather and falls in agricultural productivity and drought threaten the health and economic stability of many Mozambicans.

Country Statistics

- Population 2016 (est)[1]: 28,829,476
- Income (GNI) per capita 2016[2]: $480
- HDI Rank 2016[3]: 181
- Vulnerability Rank 2015[4]: 153 out of 182 countries
- Climate Risk Index Rank 2015[5]: 22 out of 187 countries



Map of Mozambique: Irish Aid

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 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/16411.pdf

Overview of Climate Finance in Mozambique in 2016

In 2016, Ireland provided a total of € 3,480,866 to Mozambique in climate finance through its bilateral aid programme. In addition, Ireland provided € 639,244 in 2016 in climate finance to projects in Mozambique 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 Prosan- programme for food security and nutrition; preparedness and disaster risk reduction; building a competitive horticulture cluster and revitalizing the coconut sector; and, responding to the nutrition emergency in drought affected provinces. Civil Society partners Concern, Child Fund, Serve and Help age are helping to build resilience to climate change through a wide range of projects including ensuring that extreme poor farm families and vulnerable groups have increased access to, control of, and returns from productive livelihood and social support mechanisms; reducing vulnerability and improvement of livelihood security for poor children, young people, women and men in targeted communities; and providing that older men & women benefit from more accessible social protection programmes. More detail is provided on these projects on pages 11 to 28, with methodology behind these figures available in the Annex to this report.

	Bilateral €	**Civil Society**
Climate Finance Adaptation (UNFCCC)	3,261,366	599,594
Climate Finance Mitigation (UNFCCC)	0	0
Climate Finance Cross-cutting (UNFCCC)	219,500	39,650
Biodiversity (UNCBD	339,000	419,653
Desertification (UNCDD)	1,860,273	39,650
Disaster Risk Reduction (DRR)	245,224	N/A
Total Climate Finance	3,480,866	639,244

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.*

MOZAMBIQUE: CLIMATE CHANGE TRENDS AND POLICY FRAMEWORK

RECENT CLIMATE TRENDS IN MOZAMBIQUE

Mozambique has a tropical to subtropical climate which is moderated by the influence of mountainous topography in the north- west of the country. Seasonal variations in temperature are around 5° between the coolest months (June, July and August) and the warmest months (December, January and February). Geographically, temperatures are warmer near to the coast, and in the southern, lowland regions compared with the inland regions of higher elevation. Average temperatures in these lowland parts of the country are around 25- 27°C in the summer and 20- 25°C in winter.

Mean annual temperature has increased by 0.6°C since between 1960 and 2006, an average rate of 0.13°C per decade[1]. This increase in temperature has been observed in the seasons December, January and February (DJF), March, April and May (MAM), and June, July and August (JJA) only, at a rate of 0.15- 0.16°C per decade, but no discernible warming has been observed in the season of September, October and November (SON). Daily temperature observations show significantly increasing trends in the frequency of 'hot 'days and nights in all seasons.

The Mean annual rainfall over Mozambique has decreased at an average rate of 2.5mm per month (3.1%) per decade between 1960 and 2006. This annual decrease is largely due to decreases in DJF rainfall, which has decreased by 6.3mm per month (3.4%) per decade. Daily precipitation observations indicate that despite observed decreases in total rainfall, the proportion of rainfall falling in heavy[2] events has increased at an average rate of 2.6% and 5day annual rainfall maxima have increased by 8.4 mm per decade, with largest increases in the wet season, DJF.

PROJECTIONS OF FUTURE CLIMATE IN MOZAMBIQUE

The mean annual temperature is projected to increase by 1.0 to 2.8°C by the 2060s, and 1.4 to 4.6°C by the 2090s. Under a single emissions scenario, the projected changes from different models span a range of up to 1.8°C. The projected rate of warming is more rapid in the interior regions of Mozambique than those areas closer to the coast. All projections indicate substantial increases in the frequency of days and nights that are considered 'hot' in current climate.

Projections of mean rainfall do not indicate substantial changes in annual rainfall. The range of projections from different models is large and straddles both negative and positive changes (- 15 to +20mm per month, or - 15% to +34%). Seasonally, the projections show a more coherent

[1] McSweeney et al, (2010), UNDP climate change profile for Mozambique
[2] A 'Heavy' event is defined as a daily rainfall total which exceeds the threshold that is exceeded on 5% of rainy days in current the climate of that region and season

picture, with the projections tending towards decreases in dry season rainfall, offset partially by increases in wet season rainfall.

While evidence indicates that tropical cyclones are likely to become more intense under a warmer climate as a result of higher sea- surface temperatures, there is great uncertainty in changes in frequency, and changes to storm tracks and their interactions with other features of climate variability (such as the El Niño Southern Oscillation) which introduces uncertainty at the regional scale.

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[3]. 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.

GREENHOUSE GAS (GHG) EMISSIONS FOR MOZAMBIQUE

According to the WRI CAIT[4] climate data explorer for Mozambique for the years 1990-2013, latest emission values excluding Land Use Change and Forestry (LUCF) were 27.46% with per capita GHG emissions of 1.04 tCO_2 per capita emissions presenting 50.53% absolute Change from earliest to latest value. Total emissions values including LUCF were at 66.72% with per capita emissions of 2.52 tCO_2 e and 21.26% as absolute change from earliest to latest value. The highest emission contributions are from LUCF, agriculture and energy respectively.

According to the INDC 2015, Mozambique estimates, on a preliminary basis, to reduce emissions by a total 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.[5]

CLIMATE CHANGE IMPACTS AND VULNERABILITY

Mozambique is one of Africa's most vulnerable countries to climate change. Poverty, weak institutional development and frequent extreme weather events make Mozambique especially vulnerable. Climate-related hazards such as droughts, floods and cyclones are occurring with increasing frequency, which is having a cumulative and devastating impact on the population. Droughts occur every three to four years, in a country where most people depend on agriculture for their livelihoods. Many regional river basins converge in Mozambique, and flooding is a perennial threat, especially when coupled with tropical cyclones. The country urgently needs a

[3] INGC (2009): Study of the Impact of Climate Change on Disaster Risk in Mozambique, Phase I Synthesis Report; National Institute for Disaster Management.
[4] http://cait.wri.org/profile/Mozambique
[5] Government of Mozambique INDC, 2015

coordinated approach to tackling climate change and disasters. In January 2015, heavy rains resulted in severe flooding in the north and central areas of the country, causing deaths and substantial economic damage including to critical infrastructure. According to the INDC, 2015, floods from 2000 to 2015 affected about 4,629,000 people, caused 1,204 deaths anddamage to 1,176, 000 houses, of which 638,700 were destroyed.

An economic analysis of climate change in Mozambique reveals that climate change may cause the GDP to fall between 4 and 14%, with significant declines in national welfare by 2050. In the worst-case scenario, climate change costs could reach US$7.6 billion dollars, which is equivalent to an annual cost of more than US$400 million, if no adaptation measures are implemented. The above projections notwithstanding, real GDP growth dropped in 2016 to an estimated 15-year low of 4.3% from 6.6% in 2015. Since 2014, the two main drivers of growth have contracted, with foreign Direct Investment (FDI) shrinking to pre-2011 levels due to a stalled gas project development and investors' apprehension regarding the business climate, and to high debt levels forcing fiscal tightening[6].

Approximately 80 percent of households are involved in the agriculture, livestock, fisheries or forestry sectors and of these 83% are women. Nearly all agricultural activity (99.7 percent) is small-scale and 95 percent of agricultural production is rain fed, making the sector highly vulnerable to rain fall variability. More than 50% of households are considered food insecure, and 24% of the households are chronically food insecure (UNDAF, 2017-2020).

According to the WFP 2017 assessment report[7], 2.1 million people were food insecure from October 2016 through March 2017. The total funds spent for the drought response amounted to US$ 121 million out of US$ 179, 1 million that was required to ensure assistance till March 2017, leaving a funding gap of 32%. Furthermore, the revised strategic response plan (SRP) includes a flood component estimated to cost US$ 32 million to respond to possible flood related emergency according to the contingency plan 2016/2017 scenarios. Climate induced disasters are likely to increase thus increasing pressure on humanitarian assistance requirements which are already high.

More than 60% of Mozambique's population lives near the coast and fisheries are of critical importance to the food security as about 50% of Mozambicans' animal protein comes from fish, 85% of the country's fish catch is made by small-scale fishermen indicating the importance of healthy oceans and fish stocks for vulnerable communities. Coastal zones have already begun to, and will likely continue to, experience rises in sea level. Projected sea level rise is anticipated to increase the vulnerability to erosion and flooding of ecosystems and land.

Mozambique is likely to face increased droughts and floods that will have consequences for the nation's water resources. Every year it is estimated that the country loses 1.1% of its GDP due to the impacts of droughts and floods on economic resources and activity. Mozambique is particularly vulnerable to the flooding of water sources, as it is situated downstream of nine major

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[7] WFP, 2017. Mozambique El Niño Response Situation Report #6, 1 August 2017

river systems which are already affected by climate variability; climate change is likely to exacerbate this vulnerability. From 2000 to 2001 and in 2007, Mozambique experienced severe flooding in many river basins and dams mainly due to torrential rains in the country and the region. Non-climate stresses exacerbating flooding in Mozambique include poor dam management in the country and the region, particularly upstream. Water resources in Mozambique are affected by pollution from mining, industrial, agricultural, and household waste. There are areas in the regions classified as semi-arid and arid (Gaza, Inhambane, and Maputo), where rain, even when above average is inadequate and results in critical water shortages leading to limited agriculture productivity.

Wood fuel is the most important source of domestic energy and 85% of total household energy requirements derive from wood fuels. Only 7% of Mozambicans have access to electricity. Logging for wood fuels is a significant driver for deforestation and leads to soil erosion and increased risk of flooding and drought. Deforestation will also increase the amount of effort (especially from women and children) needed to find energy sources for household needs[8].

MOZAMBIQUE'S CLIMATE CHANGE POLICY FRAMEWORK

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, and in 2012, 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. In September 2015, Mozambique submitted its Intended Nationally Determined Contribution (INDC) to the UNFCCC[9].

Mozambique also has some sectoral instruments that are already aligned with the need to reduce vulnerability to climate change and promote low-carbon development, including the PARP; the Strategic Plan for Agricultural Development (PEDSA); the Strategy for Basic Social Action; the Tourism Strategy; the National Water Resources Strategy; the Master Plan for Disaster Management; the Policy for Disaster Management; the Strategy for the Intervention in Informal Settlements in Mozambique and respective Action Plan; the Strategy for Gender, Environment and Climate Change; the Energy Strategy; the Strategy for Reducing Emissions Resulting from Deforestation and Forest Degradation (REDD+). These instruments explicitly recognize that extreme weather events are one of the greatest threats to development and integration is required. Mitigation is beginning to be recognized as an opportunity, with references to it in the Energy Strategy (carbon tax and promoting the use of indigenous energy resources for clean and renewable energy), the Biofuels Policy and in strategies in preparation such as REDD+.

The principal climate relevant policies and strategies are:

[8] Wingqvist, O., G., 2011. Environment and Climate Change Policy Brief – Mozambique

[9] Irish Aid, 2015. Climate Action report for Mozambique

- Government's Five-year Plan (*Plano Quinquenal do Governo)* 2015 – 2019
- Intended Nationally Determined Contribution (INDC), 2015
- Poverty Reduction Action Plan (PARP) 2011-2014
- National Climate Change Strategy 2013-2025
- Government's Five-year Plan 2010–2014
- Gender, Environment and Climate Change National Strategy, 2010
- National Adaptation Programme of Action (NAPA) (2008)
- Mozambique's 2003 Agenda 2025
- Action Plan for the Reduction of Absolute Poverty 2006-2009 (PARPA II)
- Initial National Communication (2003)
- National Policy on Disaster Management 1999
- National Environmental Policy 1995

NDC IMPLEMENTATION PROGRESS

The Mozambique Government has submitted the Paris Agreement to the National Parliament for review and is expected to ratify by October 2017. This will support opening of discussions and actions on the NDC implementation.

However, the process of reviewing the INDC has started and the Government of Mozambique is working with the World Bank and is also being supported by the NDC Partnership and UNEP to define specific actions for all the goals proposed in the INDC.

Implementation of the INDC 2015, may include participation in the Second Phase of the Technology Needs Assessment Project (TNA), covering energy and waste, agriculture and coastal zones, including infrastructure. This process could result in a Technological Action Plan identifying the needs, including the financial and capacity building needs in those sectors. This information is relevant to identify the necessary means to implement the proposed actions. This exercise will be concluded by the end of 2017. Another relevant source of information to be considered will be the ongoing process for making the National Climate Change Network operational which includes the assessment of the existing institutional and technical capacities and their needs for the implementation of the National Climate Change Adaptation and Mitigation Strategy (NCCAMS) to formulate and implement the Capacity Building Plan.

PROGRESS ON NATIONAL ADAPTATION PLAN (NAP)

Mozambique submitted the road map for the NAP to the UNFCCC and UNDP is supporting the process, the launch for the NAPS will be in October 2017. The World Bank is supporting development of some sectoral NAPs

The roadmap was launched for validation at central level. The consultation process with national stakeholders and awareness raising of the NAP process is starting soon. The Government is

working with UNDP and DANIDA and have submitted a proposal for support of $3m in readiness funding to the Green Climate Fund.

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

AFRICAN RENEWABLE ENERGY INITIATIVE

During the Climate Conference held in 2016 in Marrakesh, (COP22), Ireland, alongside fellow EU Member States, signed joint declarations of intent (DOI) on renewable energy with Mozambique. The joint declarations are part of the African Renewable Energy Initiative (AREI), supported by the EU and are designed to reinforce cooperation in the field of renewable energy in Mozambique. The DOIs indicate that Ireland, alongside EU Member States, will coordinate and endeavour to: 1. Contribute to an improved dialogue with all relevant actors in the energy sector, 2. Provide technical assistance and technical knowledge transfer, 3. Help to identify and bring forward relevant energy projects to increase access to clean, renewable and sustainable energy sources, 4. Assist in the development of off-grid solutions to complement or improve rural electrification efforts and 5. Promote the mobilisation of the private sector and civil society in the field of energy.

KEY PARTNER COUNTRY'S BILATERAL PROJECTS AND PROGRAMMES

PROSAN - PROGRAMME ON FOOD SECURITY AND NUTRITION (2012-2017)

Includes two main pillars: economic empowerment and social empowerment. The economic pillar tackles household food and nutrition insecurity while strengthening resilience to natural disasters and climate change. 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. The social pillar, which increases the efficacy of the economic pillar, addresses gender and power inequality. Addressing the underlying causes of vulnerability is therefore a fundamental component of PROSAN's framework, distinguishing its methodology from typical food security and adaptation initiatives. PROSAN"s strategy includes empowerment of the most vulnerable, women in particular, in decision-making in their households, communities, and in local governance. Using a rights based approach, PROSAN ensures all actors and stakeholders reached by the initiative understand their rights and obligations, as well as the most appropriate and effective ways of claiming and exercising them.

The key strategies for improving household food security under the economic empowerment pillar are to use a mixed intercropping system, primarily designed for home consumption, using conservation agriculture techniques. This is supported through a cost effective, responsive and flexible agricultural extension system that is designed around Farmers Field Schools and a network of community promoters and producers groups linked to formal extension services. The project also supports the cashew sector. Besides improved production and marketing, participating households and producers groups are supported to engage in the processing of Raw Cashew Nuts (RCN) at household or group level and organic cashew commercialization will be piloted. The social equity pillar also addresses raising women's control at different stages of the cashew value chain. This is combined with livelihood diversification efforts aimed at generating non-farm and non-natural resource based incomes for which PROSAN uses community based micro finance through CARE"s Village Saving and Loans Associations (VSLA) model, to allow PROSAN"s participants access basic financial services at an affordable price and invest in nonfarm businesses and income generating activities. PROSAN also promotes linkages between VSLAs and existing social protection schemes as they are mutually reinforcing. For issues affecting producers to make their way to the local and district development plans, PROSAN as well supports linkages between producers groups and consultative councils (conselhos consultivos) at locality level. ***Climate relevant funding provided by Irish Aid in 2016: €800,000***.

ARENA - AGRICULTURE AND NATURAL RESOURCES (2013-2016)

ARENA is a space and a forum where different partners and stakeholders active in agriculture and natural resources in Niassa can meet and exchange experiences and information for development. ARENA aims to address the main problems identified for Niassa which are low productivity, undiversified agriculture with low economic profit, access to land and other threatened natural resources. ARENA promotes good natural resource and environmental management as a means to tackle poverty reduction and economic growth. Sustainable and equitable land and natural resource management is a key component. ARENA also promotes natural resource management through enhanced agroforestry techniques, thus contributing to biodiversity. 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. ***Climate relevant funding provided by Irish Aid in 2016: €100,000***.

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 which is dependent on subsistence agriculture and natural resource extraction, so managing the response to these problems is critical. The Provincial Directorate of Agriculture (DPA) has 4 priorities of which the third is natural resource management. The strategic objective under this priority is to promote the sustainable use of land, forest and wildlife and 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. ***Climate relevant funding provided by Irish Aid in 2016: €65,405.***

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

Key measures supported by Ireland in Inhambane Province related to climate change adaptation includes support to the Provincial Directorate of Public Works and Housing (DPOPH). The DPOPH has as its first priority to ensure integrated and sustainable water resources management, ensuring the availability of water and sanitation in quantity and quality for socioeconomic activities. The programme's main objective is to increase the coverage of safe drinking water in rural areas of districts vulnerable to climate change and natural disasters. Activities specified under this priority include the construction of cisterns for rain water harvesting at community level in low

rainfall and drought prone areas; support to the construction and rehabilitation of boreholes to improve access to safe drinking water (built with solar panel pumps to increase the availability of water sources). ***Climate relevant funding provided by Irish Aid in 2016: €176,737.***

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

The programme includes 4 objectives guided to increased use and sustainable access to water and sanitation in rural population: (1) increasing the coverage on water and sanitation (2) the consolidation of management models of water resources consumption, (3) improving the capacity of institutions dealing with water and rural sanitation and (4) strengthening the processes of planning and monitoring in this sector. The DPOPH in Niassa has a strategic objective to protect water supplies and infrastructure in areas prone to disaster risk, particularly from heavy rains and high winds. Water committees are being revitalised as part of this activity. It is a priority under the multi-annual plan to protect water and sanitation infrastructure from natural disasters as these are vital to emergency and recovery. In anticipating natural disasters, which are projected to increase under climate change, and working to reduce their impact and enhance recovery through protection of water and sanitation infrastructure, this activity contributes both to climate change adaptation and disaster risk reduction. ***Climate relevant funding provided by Irish Aid in 2016: €45,224.***

PREPAREDNESS AND DISASTER RISK REDUCTION (2013-2015)

The aim of the programme is (i) creating, training and equipping 30 Local Disaster Risk Management Committees in Niassa, Cabo Delgado and Sofala which are often the first responders in the event of an emergency and (ii) introducing sustainable approaches led by the trained committees, through the promotion of agro-fisheries activities in Zambezia province. ***Climate relevant funding provided by Irish Aid in 2016: €200,000.***

BUILDING A COMPETITIVE HORTICULTURE CLUSTER & REVITALISING THE COCONUT SECTOR (2013-2017)

The aim of this project 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. ***Climate relevant funding provided by Irish Aid in 2016: €262,076.***

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. ***Climate relevant funding provided by Irish Aid in 2016: €150,000.***

IMPROVING NUTRITION 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 the availability of 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%. ***Climate relevant funding provided by Irish Aid in 2016: €200,112.***

GORANGOSA NATIONAL PARK RESTORATION PROJECT.

The overall goal of the project is to reduce the threats of the Park biodiversity by attracting communities living and hunting in the park to a buffer zone with basic social services and while addressing at the same time interventions aimed at enhancing the productivity and resilience of small-scale agricultural production systems of food insecure households, a situation that is aggravated by the serious drought affecting the area. ***Climate relevant funding provided by Irish Aid in 2016: €119,500.***

RESPONDING TO NUTRITION EMERGENCY DROUGHT AFFECTED PROVINCES (EL NINO RELATED IMPACTS)

In 2016, El Niño conditions resulted in Mozambique experiencing the worst drought in 30 years, severely impacting food security and agricultural production across the country. The provinces of Tete, Sofala and Zambezia in the central region and Maputo, Gaza and Inhambane in the south were most affected. Results from the food security and nutritional assessment released in March 2016, estimated that 1.5 million people were currently food insecure. The response, under the direction of UNICEF, focused on two critical areas of intervention: water, sanitation and hygiene and nutrition. ***Climate relevant funding provided by Irish Aid in 2016: €474,000.***

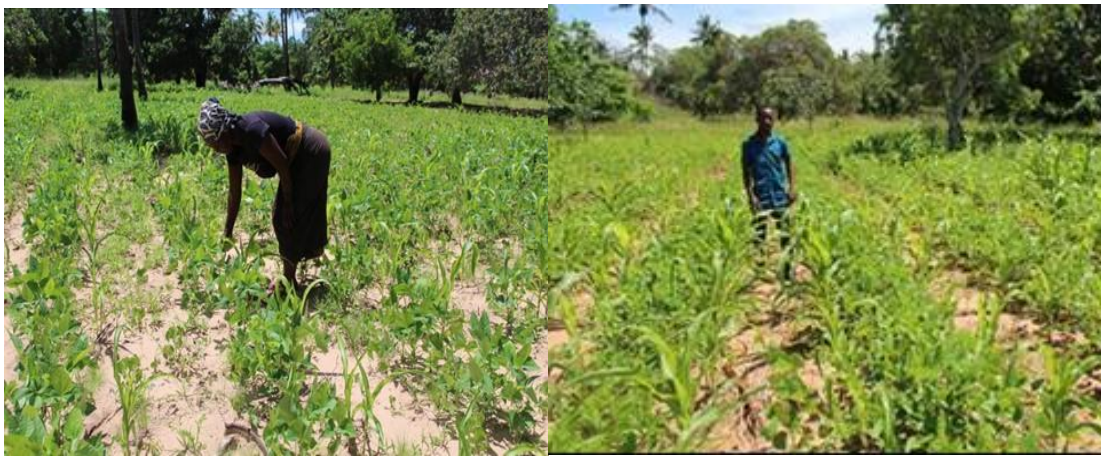
EMERGENCY ASSISTANCE IN AREAS SUBJECT TO DROUGHT/EL NINO RELATED IMPACTS

The programme, run by the World Food Programme, provided immediate life-saving and life-sustaining assistance to the population affected through provision of essential commodities, support for the restoration of livelihoods through resilience-building activities and mainstreaming of cross-cutting issues. ***Climate relevant funding provided by Irish Aid in 2016: €1,500,000.***

CASE STUDY: PROMOTING CONSERVATION AGRICULTURE TO ADDRESS CLIMATE CHANGE IMPACTS

The PROSAN programme is funded by Irish Aid and implemented by CARE, in strategic partnership with the government at national, provincial and district levels and local civil society organizations. The Programme has been promoting conservation agriculture in Petane D Community, in Inhamússua, Homoine District. As part of the programme, groups of farmers are trained on Conservation Agriculture techniques and introduced to crop varieties which are drought tolerant, using the 'Farmer Field School (FFS)' approach, acquiring farming techniques to be replicated in their own fields. Txuvukelane group, comprised of 23 women and 7 men opened demonstration fields to increase learning for the group members.

According to Sérgio Carlos, an extension worker who supports the group, farmers have shown active interest in uptake of these new farming methods. They have exhibited a lot of voluntarism in ensuring that learning is shared and different agricultural practices are replicated. Farmers recognize the advantages of new farming methods over the traditional farming practices, which have been challenged by current climate change impacts. The new seed varieties were well adopted and the entire community has been engaged in the learning process. Interest was also shown from non-group members in taking part in the meetings so they could also learn new agriculture techniques from the farmer field school members, adding to the numbers of farmers and households benefitting from the programme. The project also has capacity for continued scale up to manage climate risks and increase nutrition and food security in the area.



Images display intercropping grown in Teresa Cumbe's field in Inhamussua Homoine District as part of the Farmer Field School, and Sergio Carlos, Extenstion Supporter, Txuvukelane group

"Taking part in the group activities granted me and my family access to new farming techniques and crop varieties that are drought resistant. We get very little rains but we have managed to grow quick maturing crops which are suitable for this climate. We have been using seeds such as Cow peas (Nhemba beans/Vigna unguiculata) and Lab-Lab since December 2016, which are unlike the seeds we have locally, that usually take too long to harvest, and could not survive with reduction in rains."- Teresa Fernando Cumbe.

CASE STUDY: CLIMATE FRIENDLY CUISINE; FARMERS IDENTIFY NEW FOOD VARIETIES TO COPE WITH DROUGHTS

Irish Aid also funds the PROSAN (Food and nutrition security programme) in Homoine and Funhalouro districts, Inhambane Province, Mozambique. The programme is implemented by CARE in strategic partnership with the government at national, provincial and district levels and local civil society organisations. It aims to reach 28,875 participants spread in 5,250 poor and food insecure households, of which 80% are women.

Elisa Mazive is a small-scale farmer from a small community called Culuvalala in Manhiça village, Funhalouro District, which was one of the districts most affected by severe droughts caused by the El Nino phenomenon in Inhambane Province. Like many farmers in rural areas, she does subsistence agriculture and has limited options for crops to grow due to the agro-climatic conditions in that region, which reduces access and availability to a variety of food that would otherwise ensure food and nutritional security for the family.

Elisa participated in programs promoted by CARE and partners and learned new techniques on food conservation and processing for foods which she did not know were edible. This includes some native fruits that can guarantee food stocks in those months which are critical in terms of food shortages.

''All my life I have taken this weed out of the field in all crops to feed the pigs because I never imagined that it could be edible. I was impressed with the various forms of preparation of Moguda (Baldroega) that I have learned, ranging from eating it as a salads or cooked vegetable.''- Eliza Mazive, beneficiary of PROSAN Programme

Baldroega is a weed that can be grown and consumed as a salad, in soups or part of a curry. It is rich in Omega 3 and Vitamin A, B, C and E. It is also rich in Iron, Calcium, Potassium and Magnesium. In Mozambique, Funhalouro district specifically, Baldroega is commonly used to feed pigs and most people do not know its benefit to human health.

Images above show some of the plants and fruits that are available locally, which are rich in vitamins and can support food security during critical periods.

MOZAMBIQUE MAPPING OF BILATERAL EXPENDITURE

Project/Programme	**Recipient**	**2016 Disbursed €**	**Rio Marker Score; Mitigation**	**Rio Marker Score; Adaptation**	**Rio Marker Score Biodiversity**	**Rio Marker Score Desertification**	**Agriculture**	**Disaster Risk Reduction**	**Capacity Building**	**Technology Transfer**	**Forestry &Agroforestry**	**Climate Accounting Weight**	**Total Climate Amount €**	Mitigation Total €	**Adaptation Total €**	**Cross cutting €**
PROSAN - Programme on Food Security and Nutrition (2012-2017)	CARE International Inhambane Province	800,000	1	2	0	1	2	0	1	1	0	100%	800,000		800,000	
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			100,000
Provincial multianual plan for the agriculture sector (DPA) Inhambane (2014-2016)	DPA Inhambane	130,809	0	1	0	1	2	0	1	1	0	50%	65,405	0	65,405	
Multiannual provincial support to water and sanitation in Inhambane province (DPOPH 2014-2016)	DPOPH, Inhambane Province	176,737	0	2	0	1	0	0	1	0	0	100%	176,737	0	176,737	

Multiannual provincial support to water and sanitation in Niassa province (DPOPH 2014-2016)	DPOPH Niassa Province	90,447	0	1	0	0	0	1	1	0	0	50%	45,224	0	45,224	
Preparedness and disaster risk reduction (2013-2015)	INGC	200,000	0	2	0	1	0	2	1	0	0	100%	200,000	0	200,000	
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 and north Mozambique	300,000	1	1	0	0	0	1	1	1	0	50%	150,000	0	0	150,000
Improve nutrition of rural households in Niassa Province with drought tolerant sweet potatoes.	International Potato Center (CIP)	440,223	1	1	0	0	2	0	1	1	1	50%	220,112	0	0	220,112
Gorangosa National Park Restoration Project.	Gorongosa National Park	239,000	1	1	2	1	2	0	1	1	0	50%	119,500	0	0	119,500

Responding to nutrition emergency drought affected provinces (El Nino related impacts)	UNICEF	474,000	0	2	0	1	0	0	1	1	0	100%	474,000	0	474,000	
Emergency assistance to drought/El Nino related impacts	WFP	1,500,000	0	2	0	1	2	0	1	1	0	100%	1,500,000	0	1,500,000	

MAPPING OF MOZAMBIQUE CIVIL SOCIETY EXPENDITURE 2016

Civil Society partners Concern, Child Fund, Serve and Help age are helping to build resilience to climate change through a wide range of projects including providing that extreme poor farm families and vulnerable groups have increased access to, control of and returns from productive livelihood and social support mechanisms; reducing vulnerability and improvement of livelihood security for poor children, young people, women and men in targeted communities; and providing that older men & women benefit from more accessible social protection programmes. More detail is provided in the table below:

Project/ Programme	**Irish Aid Funding in 2016 €**	**Climate Relevant €**	**Adaptation €**	**Mitigation €**	**Cross cutting €**	**Biodiversity €**	**Desertification €**
Concern: To provide that extreme poor farm families and vulnerable groups have increased access to, control of and returns from productive livelihood and social support mechanisms	900,000	555,000	550,000	0	0	350,000	0
Childfund: To improve culture of learning and knowledge management on ECD approaches and practices	79,301	39,650	0	0	39,650	39,650	39,650
Serve: Reduce vulnerability and improve livelihood security for poor children, young people, women and men in targeted communities in Mozambique	97,047	48,523	48,523	0	0	30,003	0
Help Age: To provide that older men & women benefit from more accessible social protection programmes	2,143	1,071	1,071	0	0	0	0

ANNEX - 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 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 Marker[10] 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

[10] An OECD DRR marker definition is nearing completion but 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.

which to identify if the activity supported is climate change mitigation, adaptation or cross-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.