

**Common Format for Project/Program Concept Note for the Use of Resources from the  
PPCR Competitive Set-Aside**

<b>1. Country/Region:</b>	Mozambique	<b>2. CIF Project ID#:</b>	
<b>3. Project/Program Title:</b>	Lurio Green Resources Forestry Project		
<b>4. Date of Endorsement of the Investment Plan:</b>	29 June 2011		
<b>5. Funding Request (in million USD equivalent):</b>	Grant: N/A	<i>Non-Grant (loan, equity, guarantee, etc.): Up to USD 11 million concessional loan</i>	
<b>6. Implementing MDB(s):</b>	AfDB	<input checked="" type="checkbox"/> Private sector arm <input type="checkbox"/> Public sector arm	
<b>7. Executing Agency:</b>	AfDB		
<b>8. MDB Focal Point and Project/Program Task Team Leader (TTL):</b>	Headquarters- Focal Point: M. Duarte, ONEC.3	TTL: N.VIJ, OPSM.2	

**I. Project/Program Description:** *Provide a summary description of the project, objectives, and expected outcomes. Which sectors would be targeted?*

Green Resources AS (GRAS), a Norwegian forest management company, proposes to develop a forest plantation in the Nampula Province, in northern Mozambique. GRAS has more than 15 years of sustainable forestry and industrial timber harvesting experience in East Africa and is recognized as a leader in the sustainable forestry sector in Africa. The project will be implemented by Lurio Green Resources (LGR), a wholly-owned company by GRAS and registered in Mozambique, which proposes to develop in a first phase (2013-2017) a sustainable 24 000 ha eucalyptus forest plantation out of 126 000 ha of land lease by the Government of Mozambique ([GOMGoM](#)). The plantation will generate revenues through the sale of different forest products like wood chips, charcoal and transmission poles for domestic and regional markets.

The project will also support the development of an additional 10,000 ha of small and medium holder outgrower plantations (scaling up to 54,000 ha during the second phase). The project is well aligned with GOM's rural development and diversification strategy of leveraging the private investment in the forestry sector and thereby increasing opportunities for revenue earning activities for rural households.

The land concession agreement for the project was granted provisionally by the Mozambique Council of Ministers in 2009 in accordance with Mozambique policy and is fully aligned and harmonized with current national legislation. The land to be developed into forest is largely abandoned agricultural or degraded land and will be selected according to criteria defined by the Forest Stewardship Council, an independent NGO promoting responsible management of forests worldwide. GRAS is 100% committed to compliance with FSC standards, and it has a strong record of FSC certification with other ongoing projects.

Growing conditions in the project area are predicted to yield a growth rate 4 – 10 times faster than in Northern Europe at a cost of development per ha of approximately 1/2 that of comparable locations in South America. Proximity and access to a major port is an additional advantage of the project location. The port of Nacala in Mozambique is the deepest natural port in East Africa and the second largest in terms of capacity in Mozambique.

**II. Rationale:** *Provide the rationale behind the idea in the national context, and from a local market perspective. Also, provide an explanation as to why it should receive the funding and how it would further advance the objectives of the endorsed investment plan.*

**Climate Vulnerability.** Mozambique's current climate variability is defined by its seasonal patterns of precipitation and temperature and the frequency with which abnormal, or “extreme” weather events occur. The country ranks third amongst the African countries most exposed to risks from multiple weather-related hazards. During the past 50 years, the country has experienced 68 natural disasters which have affected up to 28 million.

Mozambique has around 55 million ha of forest resources for livelihood needs – including food, firewood, charcoal production and grazing. Fuel wood is by far the major source of energy in Mozambique and forest resources also contribute to environmental benefits with direct economic and livelihood value – for example, protecting watersheds, preventing soil erosion and supporting biodiversity. These benefits bring direct economic welfare to local communities and the national economy as a whole. In the medium to long-run, their global public values might deliver significant revenue flows by tapping into emerging global markets for forest carbon. The main drivers of forest degradation are poverty-related – although illegal logging is increasingly an issue. For most rural communities, forest degradation is likely to increase vulnerability and decrease resilience to changing climatic conditions. Conversely, increased variability in rainfall and more prolonged dry seasons may increase the frequency of forest fires and pest outbreaks – thus contributing to exacerbate forest degradation.

**Strategic Alignment.** The Government of Mozambique has developed a number of strategies to address climate risks all aligned with the proposed project. The “Action Plan for Poverty Reduction 2011-2014” focuses on the promotion of sustainable and inclusive economic activity, particularly in the agriculture and fisheries sectors which primary income and employment generators for large percentage of the population. Another relevant strategy is the “National Action Program of Adaptation to Climate Change”, prepared in 2007 that lays the foundations for a multi-stakeholder adaptation agenda that prioritizes “strengthening the capacity of farmers to deal with climate change

Furthermore, the project is closely aligned with the AfDB’s “*Mozambique Country Strategy Paper 2011 – 2014*” which highlights the need for job and income creation, particularly for rural households and prioritizes enhanced private sector competitiveness through infrastructure development.

The PPCR resources could play a catalytic role in the development of the project for a number of reasons:

- (i) Further improve transaction risk-profile: Although the project started being developed in 2009 when the GoM signed a land concession agreement with the project's sponsor, implementation of the project, particularly in terms of planting targets has suffered delays due to the sponsors' inability to reach financial close on time. This resulted in scaling-down the project in order to

improve its risk-profile. The AfDB and the European Investment Bank (EIB), another potential lender, are working with the sponsor to structure a more realistic and bankable transaction.

- (ii) Contribute to maximize project's benefits: PPCR concessional resources would improve the risk-profile for the equity holders the senior lenders, whilst maximizing project's benefits due to smaller scale-down.
- (iii) Reduce pressure on cash-flows: PPCR resources would reduce the overall project's pressure on revenues, particularly in the first years of revenues when equity repayments are quite heavy. This would contribute to enhancing the project's overall bankability over its life. This is especially important given the phased implementation of the project.

**III. Consistency with Investment Criteria:** Provide information how the proposed project meets the investment criteria for the Pilot Program for Climate Resilience, including:

- Pilot and demonstrate approaches for integration of climate risk and resilience into development policies and planning: Mozambique is one of the most vulnerable countries to climate change. Deforestation is widely known to be a significant contributor to the increase in climate risk, and in particular to vulnerability to flooding. The country has experienced the same pattern of deforestation that has turned other areas of the world into barren ground that will not absorb rain. In addition to lumbering, increasing population drives demand to clear forests, often through destructive slash-and-burn techniques, to grow crops and graze livestock. Without forest, the ground loses its absorptive abilities, and rainwater flows freely down watersheds and engorges rivers. For this reason, long-range planning has to take into account the chief culprit in catastrophic flooding - deforestation. Furthermore, this year alone, the UN has reported floods have claimed a significant number of lives, property and infrastructure in Mozambique, including in Nampula.

The Lurio Project is a significant afforestation initiative projected over an area which is presently degraded, or abandoned agricultural land. A recent report<sup>1</sup>, disseminated by the National Climate Change Adaptation Research Facility concludes “*that widespread eucalypts are likely to possess a capacity to respond plastically to a changing climate to some extent, but selection of seed sources to match projected climate changes may confer even greater climate resilience.*” The Lurio Project includes the planting of a variety of Eucalyptus species, which should increase the climate resilience of the plantations overall.

The project is committed to obtain FSC (Forestry Stewardship Council) certification. FSC certification involves the observance of 10 Principles<sup>2</sup> of responsible forest management, including on managing the environmental impact of the forest project, maintaining or enhancing the long term economic, social and environmental benefits of the forest (Principle 6). Though not addressing specifically the need for adaptation measures, these environmental management requirements will contribute to enhanced resilience of the forested area.

- Strengthen capacities at the national levels to integrate climate resilience into development planning: The planning and development of the project, integration of workers and engagement with regional and local stakeholders will contribute to the development of capacities to integrate climate resilience into land management and forestry practice. The Lurio project already integrates several recommended practices identified in the Plantation Forest Industry Climate

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<sup>1</sup> Byrne, M. et al, 2013, “Adaption to climate in widespread eucalypt species”

<sup>2</sup> <https://ic.fsc.org/the-10-principles.103.htm>

Change Adaptation Handbook: Adapting Our Forests to Climate Change, for managing forest projects in the short and long term, involving Spacing and Thinning, Watering, Fire Management, Selection of Genotype and Site Selection. Following these management practices by local and regional authorities and skilled and semi-skilled workers involved in the forestry management will create new and strengthen existing capacities to integrate climate resilience practices in other forestry projects.

- Scale-up and leverage climate resilient investment, building on other ongoing initiatives: The present funding contributes to the viability of a series of activities connected to the main forestry project, which directly and indirectly enhance the climate resilience of the land and communities. These include an increase in rural employment, increase in agro-forestry productivity among outgrowers, increase in business opportunities for local SMEs. With poverty being a fundamental characteristic of the rural area of Nampula, these activities will boost communities' resilience to climate related shocks, such as crop failure and losses due to stormfloods or other environmental consequences. The Lurio project involves good forest management practices and will seek to incorporate lessons learned from other related projects in the country and region.
- Enable learning-by-doing and sharing of lessons at country, regional and global levels: The Lurio Project will employ, by 2017, 500 permanent and 5000 temporary jobs, of which one third are women. Workers will be informed of objectives and be involved in learning-by-doing activities. GRAS is interested in disseminating the characteristics of its Lurio project, including on issues pertaining to forestry management and its impact on climate resilience in the implementation area, including lessons learned. In addition to being represented at relevant fairs and exhibitions, and communicating on the project on its own media and reporting, GRAS is also open to collaborating with research initiatives with national academic institutions. Indeed, it is intrinsic to Green Resources' Environmental Policy that it "*communicate (...) to the public, government agencies, and other interested parties by making it readily available*".

**IV. Type of Private Sector Engagement:** Provide information whether this will be a solely private sector project, a PPP, or a public sector project financing private sector entities.

This project will be implemented and financed solely by the private sector.

**V. Innovation:** Explain how the project is innovative in terms of technology, business model, financial instruments or structure, and how the innovation will add value to the project.

GRAS takes a direct hands-on approach to business and has small overhead costs. Its planting costs are among the lowest in the world, typically 25-50% of the main countries for new forest plantations. The cost of pruning and thinning, required to produce the highest value 'clear' saw and peeler logs, is the lowest in the world. High-cost northern timber accounts for 80% of world supply, while low-cost southern timber accounts for only 20% of world supply. The steep cost curve supports appreciating timber profits and land values in the south.

From a technology point of view, the project will not be much innovative as services, works and goods to be procured have been widely used in other countries and for other purposes. The project will rather innovate with regards to engagement with local communities. The implementation of the project will be a long and complicated process that will require heavy community involvement and firm demonstrations of GRAS's commitment. The company has a strong record of land acquisition, typically holding land on 99-year or 50+50-year leases and have a great deal in implementing a peer project in Tanzania.

The GoM has signed the land concession agreement with the project company.

The project's financial model includes the development, registration, issuance and commercialization of carbon credits under the regulated or voluntary sector markets. In addition to being an innovative co-financing stream for the projects implementation over time, the process by which carbon credits are generated require the stringent and transparent determination and monitoring of methodologies and reporting on project implementation. Whether for submission to the UNFCCC CDM Executive Board, Voluntary Standards such as Gold Standard or Verified Carbon Standard (VCS) or to the Designated Operational Entities which must audit and verify compliance with rules and methodologies, this volunteer aspect of the business model adds value to the project by providing one further step in the reporting and dissemination of the project, as well as in added recognition and credibility of the project.

**VI. Technology, Product, and/or Business Model:** *Provide description of the technology, the technology provider if identified, whether it has been tested, commercialized and viable commercially. If the project does not involve a technology, provide a description of the business model and its structure.*

LGR will be responsible for all the implementation of the project with the support and technical know-how of GRAS, a leader in the sustainable forestry sector in Africa. It will do so under a limited-recourse financing structure which contributes to the need of a strong contractual structure associated with the project.

Main procurement activities associated with the project are expected to consist of construction of facilities such as storage sheds, access roads, forest stations, nursery sheds and a headquarters facility, purchase of vehicles and relevant equipment as well as contracting for services related to plantation operations and maintenance. Procurement methods will be in accordance with established private sector or commercial practices that are acceptable to AfDB and EIB.

The project will be established in accordance with a timeline that provides comfort to the senior lenders (including PPCR) and at the same time maximize ownership and buy-in of the project company.

**VII. Market:** *Provide an overview of the market, product nature, supply and demand status, prices, and competition. In the absence of other comparable products, provide a brief explanation on how the proposed product will substitute for existing products and the benefits from a climate standpoint, and the prospects of commercial viability. Also, provide an overview of current market barriers and how will they be reversed by the proposed project.*

Southern and Eastern Africa are considered to be two of the best regions on earth for establishing new forestry plantations. Climate, rainfall, low costs and growing conditions are competitive with the leading plantation forestry regions in South America, while natural ports on the Indian Ocean facilitate access to major growth markets for raw and processed timber.

Demand for wood products in Mozambique, and the whole of the Eastern and Southern Africa region, has increased in recent years in line with rapid growth in the construction and infrastructure sectors. Mozambique, Tanzania and Uganda are all net importers of timber products, and it is estimated that by 2016 the shortfall could reach 3 million cubic meters per annum. Global demand for wood products is also robust with demand forecast to outstrip supply for the foreseeable future. Drivers of demand, including, emerging market building booms, global population growth and bio-energy uses for wood products are projected to grow global wood demand by 44% from 2007 to 2030. Prices for timber products have grown steadily in real terms by 1% annually since 2000 with prices in emerging markets growing even faster. Indeed, timber prices in Eastern and Southern Africa are expected to grow strongly over the coming years and reach par with global prices by 2020.

While other forestry companies are present in the region, LGR is a first mover in the Nampula Province and expected to be the largest plantation in the region, thus, benefiting from significant economies of scale in all aspects of its operations. Further analysis of domestic and regional competition will take place during appraisal.

GRAS identified and selected northern Mozambique as a plantation location for a number of strategic reasons, including: (i) eligibility for CDM and VCS carbon credit revenues; (ii) low cost of establishing new plantations; (iii) superior biological growing conditions; (iv) reliable infrastructure for export logistics; and (v) easy access to major growth markets for forestry products. The placement of a large operation in Mozambique also allows GRAS to continue to foster, build and tap into a growing base of experienced local labor.

### **VIII. Financial Plan (Indicative):**

| Under discussion.—

### **IX. Expected Results and Indicators**

Results	Indicators
500	# of Direct Full-Time Jobs Created
5,000	# of Seasonal Jobs Created
6.4 million	# of tCO <sub>2</sub> sequestered over 20 years
[TBD]	USD equivalent amount of fiscal revenues generated to the GoM
180	# of MW of installed capacity
10%	% of carbon credits reinvested in Local Community Initiatives.
<i>Development Results(s):</i>	
<ul style="list-style-type: none"> <li>- Development of local SMEs business in rural areas</li> <li>- Development of community Programs</li> <li>- Protection against erosions and improvement of local microclimate and conservation of biodiversity</li> <li>- Increase in GDP</li> <li>- Improved infrastructure in the vicinity of the project</li> <li>- Improved macroeconomic resilience of Mozambique's economy</li> </ul>	

**X. Implementation Feasibility and Arrangements:** Provide information on the implementation feasibility of the proposed project and a timeline by when the project can start implementation on the ground and when the project will be completed. Also, to provide:

Expected PPCR Sub-Committee approval date: April 2014

Expected MDB Approval date: June 2014

**XI. Potential Risks and Mitigation Measures:** *What are the risks that might prevent the project development outcome(s) from being realized, including but not limited to, political, policy-related, social/stakeholder-related, macro-economic, or financial?*

<b>Risks</b>	<b>Mitigations Measures</b>
Political Risk	Sovereign Risk in Mozambique is currently seen as low by investors, but strong country's ownership and DFI and PPCR participation in the project will contribute to mitigate this risk.
Plantation and Silviculture risk	<p>Standard agricultural risks apply to the project. Growth yields, rainfall, water resources, pests, disease and fire are all concerns. The success of any forest plantation, however, depends largely on the choice of sites and application of appropriate silvicultural practices. GRAS has a track record of successful plantation establishment in the region and will apply best practices in all aspects of the plantation process from choice of species and species-site matching to site preparation, spacing, planting, fertilization, tending and harvesting. A detailed technical review of efforts to mitigate plantation and silviculture risk is expected to take place during appraisal.</p> <p>Fire presents a significant and uniquely destructive plantation risk. Hot, dry weather at certain times of the year, heavy winds and regular use of burning in agriculture and forestry combine to elevate the risk of fire. LGR plantation management is expected to implement all preventive measures to reduce the risk of fire, including, fire breaks, fire lookouts, good forest management practices, and engagement with local communities.</p>
Environmental and Social Risk	<p>The establishment of a new forest plantation represents a transformation of the landscape and brings with it the potential for negative environmental and social impacts. As a mitigation strategy, the project will implement all relevant silvicultural, environmental and social best practices. The financing plan also includes US\$ 14 million for community development initiatives. These efforts will be guided by the project Environmental and Social Management Plan (ESMP) which was approved by the GOM in March 2011 and will be fully in compliance with all AfDB standards and requirements. GRAS's corporate commitment to full compliance with FSC standards provides additional comfort in terms of environmental and social risk.</p> <p>LGR is committed to avoiding use of any lands which are inhabited or in active production, and there is not expected to be any resettlement or displacement as a result of the project. Nevertheless, there is inevitably social risk in the form of community dissatisfaction with the impact and presence of a large scale, transformative project such as LGR. This could lead to tension between the project and local communities and leaders as well as vandalism and other destructive acts directed against plantation assets and forests. Strong and sustained community level engagement and consultation, adherence to local legislation and FSC principles, investment in local community development and job creation are key features of the LGR strategy to mitigate this risk.</p>
Market Risk	Global timber prices have grown consistently since 2001, and domestic and regional demand for timber is surging. However, there is currently no umbrella off-take agreement in place to provide coverage against sales predictions. Absent such an agreement, the sponsor has fixed price assumptions in the project financial model well below industry norms and conducted a preliminary market study of global and regional trends in the timber market. A detailed independent market study is expected to be commissioned in collaboration with the EIB during appraisal to verify preliminary indicators.
Carbon Revenue Risk	Carbon revenues are expected to generate approximately USD 40 million in the first eight years of the project and USD 200 million over the life of the project and, thus, represent a vital source of revenue to the project, particularly in the early years. However, there is the risk that the project

will not receive CDM certification. In response, GRAS has established a dedicated internal team to handle carbon credit issues and the CDM process. The team already boasts a track record of success including CDM certification in 2011 for a GRAS forestry project in Uganda and sales agreements in place with the Government of Norway and the Swedish Energy Agency.

There are some risks attached to CDM revenues in subsequent years. However, the European Union (EU), by far the largest established market for carbon credits, has sought to reassure projects and lenders with commitments to continue purchasing carbon credits from qualifying projects through 2020.

AfDB and EIB will closely monitor the certification process during appraisal.