Name of the Project: Community-based protection of *RANO* swamplands and freshwater sources to enhance island resilience to climate change, thus, safeguard food security on Rotuma.

Proposed start and end dates: October 2012-October 2013

Organisation background: LäjeRotuma (LRI) is a community-based environmental Initiative aimed at informing, strengthening capacity of its own community to make informed decisions and mobilise to manage well natural resources on Rotuma Island. LäjeRotuma is locally governed by the island community and promotes ownership of sustainable resource management actions, research initiatives derived from 10 years of consultation. Additionally, the inter-island partnerships amongst indigenous communities via cultural exchanges, government and research institutions strengthen existing participation, thus fostering community spirit to protect a shared natural heritage.
LäjeRotuma recognises the use and conservation of island biodiversity as an integral part of its culture, inseparable from its ethical and aesthetic values or from its socio-economic reality. However, shift in value and use of natural resources accelerates the loss of Rotuman resource use knowledge and practices important to biodiversity conservation and sustainable development. In the context of this project under the objective of building climate resilient communities, LäjeRotuma with the children and women groups of Rotuma are working together by learning from historical coping (survival) measures to extreme natural events practised by our elders, to create the awareness of a changing climate and understand how better to adapt to these changes.

Brief outline of the RANO Project: The freshwater swamps or "rano" are key important wetland areas found almost around the 43 square kilometre volcanic island. *Rano* swampland is culturally associated to certain customary practices and subsistence resource use in past coping strategies during times of natural disaster or extreme dry periods. Very little is known of the biodiversity in these swamplands and how much of this resource remains except that the practice of of harvesting the tuberous swamp plant for certain feasts is becoming less frequent. *Rano* wetland is an important part of the island ecosystem providing habitat and food source to many living flora and fauna as part of the island biodiversity. These swamps or *rano* capture much of the surface water that recharges the island's freshwater lens, the water source that supply for households. Currently, these "rano" are fast disappearing mainly from:
- change in weather patterns i.e. long periods of drought can dry up the swamplands
-change in land use patterns eg. damage caused by feral pigs, increased monocrop agriculture
-shift in community's resource use due to shift in resource value eg. the value of planting the tuberous plant *Cyrtosperma chamissonis* in the swampland due to its slow growth that takes years before actual harvest.

Under the RANO Project, there are several opportunities to address sustainable management of these limited swampland. This includes identifying past coping strategies utilised by the island community and making connections to value of protection to safeguard food and water security, conducting awareness activities about the swamplands, surface water wells and sustainable management of forests to maintain the island's water sources.

Innovatively, the proposed activities will specifically work with the women and children in schools to gather stories on real-time, local observations about how the changing climate and seasons affect daily life on Rotuma. The climate witness stories captured, will then devise efforts more relevant to each social group in coping with these observed phenomenal changes. The listing of stories from the women and youth focus

groups will outline priority concerns and opportunities for the framework of actions that will support their social roles in the community. The children in the four primary and 1 high school on Rotuma has an ongoing 'Adopt-a-habitat' outreach program for which an annual ecocamp, mural art sessions, seagrass-beach-coral reef watch and forest walks engage the children in schools to observe natural changes and potential impacts of seasonal and climate changes of their natural environment. Support will go towards such educational and awareness activities.

The RANO Project will specifically work with women clubs living adjacent to swamplands, to 'adopt' the local habitat area and be involved in its rehabilitation whilst creating the awareness at the village/district level. Other field activities will involve the scoping of the remaining swampland, water wells and documentation of how these habitats are presently owned, used and cared for, thus enable planning for long-term management. Incentive driven activities hosted by the Rotuma Women Association will be explored with the women clubs in raising the profile of the value and use of the *rano* in other aspects such as customary links to the mat weaving trade.

Project justification – explain how your project relates to climate change, its impacts and adaptation:

The extent to which communities on Rotuma are vulnerable to climate change depends in part on the magnitude and rate of climate change and its consequent impacts but also on their adaptive capacity. This adaptive capacity is often limited by lack of resources, poor institutions and inadequate infrastructure.

The uncertainties surrounding the manifestation of climate change often make it difficult to project the extent and future impacts of climate change at the island level. Over the years, LäjeRotuma has been engaged with different target groups involving youth, women and children in schools with an age range between 6-17 years old. Conducting island community outreach with the basic belief to strengthen community capacity to address sustainability issues, by encouraging public awareness, village focused activities; enhance community participation for maximum stakeholder involvement and commitment.

Freshwater is an essential and very threatened resource in most small islands which tend to be dependent on the rainfall collection and extraction of limited groundwater lens reserves. The average annual rainfall for Rotuma Island is about 3558mm (FMS, 2008). There is no surface water on Rotuma, therefore high infiltration to the groundwater system has been assumed (Dawe, P. SOPAC 2001). The Mineral Resources Department estimated an annual recharge of 83 000 000 m^3 to the groundwater system. The high permeability of the Rotuma basalts mean that saltwater intrusion of wells located close to the coast is likely (Simpson, 1978). It also means other contaminants could have a direct route into the groundwater system.

Fiji's climate risk profile points out that maximum daily rainfall of 200mm is projected to become less frequent by 2100. A warming atmosphere with the recurrence of maximum temperature exceeding 35 degree Celcius will become a normal occurrence by 2100 (FMS, 2011). Rotuma's equatorial location at 12 degree south of the equator, implies hotter uncomfortable conditions than currently experienced. Sustainable management of swamland, forests and protection of surface water is vital to maintaining island resilience hence, safeguarding Rotuma's food supply for the future.

Project goals:
The link between adaptation and development is particularly relevant when seeking to enhance the capacity of people and communities to adapt to climate change. Adaptation is primarily a local process

which means that technology and solutions need to be suited to local conditions and that local capacity must be developed to use and maintain that technology.

In the context of this proposal, the main goal for LäjeRotuma is to promote sustainable management of swamplands, freshwater wells and forests in order to enhance island- climate resilience. This will be carried out in partnership with the Rotuma Women Association.

Project methods/ activities:

Awareness-raising and information sharing.

- Facilitate awareness sessions on climate change targeting island youth and women groups;
- To determine how women and children in Rotuma understand the varied manifestations of climate change to their families' livelihoods, health, education, emotional well- being and aspirations, thus increasing their state of vulnerability. Use low cost innovative technology means to document climate witnesses of youth, women and children of Rotuma as a means of sharing climatic experiences with other indigenous communities at a national, regional and international level.

Managing swamplands.

- GIS mapping of the swamplands and habitat change detection analysis over a time series to profile the rate of loss of swamplands;
- Support provided to the Rotuma integrated development planning process to lobby for protection of swamplands and reforestation measures on the island;
- Training for community group(s) on how to rehabilitate the swamplands and nursery establishment;
- Support of empowerment/ mentoring programs in partnership with the Rotuma Women Association.

Project outputs:

Awareness-raising and information sharing.

1. Production of 4 climate stories from women, children and youth on Rotuma with their experiences on the varied manifestations of climate change affecting island roles i.e. mat weaver and her pandanus patch, stories from the *rano,* swampland, changing land-use patterns, women and leadership roles shifts.
2. A publication will be produced to collate the varietal impressions from the women, youth and children of Rotuma illustrating the manifestations of climate change in their lives.

   The publication and profiles of the climate witnesses will be shared on the Rotuma website portal and other related climate change links to build on the existing information on indigenous communities and their lessons on coping with impacts of climate change, as part of a global village.
3. An exhibit to coincide with Rotuma Day celebrations on the island and a second exhibition to coincide with a national climate change event.

Managing swamplands.

1. GIS map product of swampland changes
2. A Rotuma Rano management plan outlining plan of activities by the women clubs and rano-communities.

3. At least one nursery to cater for the promotion of the women-sustainable forest management program and rano rehabilitation.
4. Training and series of leadership management training workshop report.
5. Rehabilitation of identified degraded swamplands

List other partners/contributors (if any): Council of Rotuma, Ministry of Agriculture, Department of Environment, National Trust of Fiji, GIZ with its regional counterpart SPC and national counterparts (MFAIC, MFF, Ministry of Education, Ministry of Energy).

Sustainability of the RANO Project:
The *Rano* Project will be sustainable for it to promote self-reliance under LRI's strong island volunteer base in its goals to address pertinent issues to community affecting food and freshwater security as well as provide practical solutions integrated in community development planning.

The project team are originally from the island community and so engaged in the proposed activities and enhances the mobilization of own community to engage effectively

Much of the materials and resources needed for the restoration of the freshwater wells and the swamps is already onsite i.e. Rotuma Island**.** Exploring the traditional dimensions of the community's links to the *rano* enhances understanding of how best to restore the habitat and promote stewardship issues at the community level.

Rotuma is in the throes of development due to a recent declaration by the Fiji government to be an international port of entry and LäjeRotuma under its 'Reviving a culture of biodiversity conservation' initiative, to building a climate resilient island community aims to broaden the knowledge base and management capacity by drawing from the modern science (climate change) and indigenous knowledge.

LäjeRotuma Project Workplan and Monitoring Schedule:

RANO Project: Community-based protection of *RANO* swamplands and freshwater sources to enhance island resilience to climate change, thus, safeguard food security on Rotuma	
Start and end dates: October 2012-October 2013	
Project Goal: to promote sustainable management of swamplands, freshwater wells and forests of Rotuma to enhance island-climate resilience.	
Project Objective(s): to restore and rehabilitate relict swampland areas by replanting of known 'drought resistant crops' growing in the *rano* as well as explore other customary links and usage of the *rano*.	
List the activities necessary to fulfill project goal. Indicate who is responsible for each activity, expected outputs plus an indicator of activity accomplishment.	Duration of Activity in quarters

Activity	Responsible party	Expected outputs	Indicator	1	2	3	4	5
1. Conduct community training/awareness workshops with the women clubs – Rotuma Women Association.	LäjeRotuma/ Rotuma Women Association/ Council of Rotuma-Rotuma Affairs Unit GIZ team Resource team	▪ At least two training workshops that include understanding the climate change science and adaptation planning on Rotuma	▪ 4 climate story profiles from women, children and youth of Rotuma ▪ A composite training report on a schedule of capacity building activities relating to the protection of the swamplands.					
2. Conduct a Rotuma climate-camp series with the women, youth and children of adapting eco-camp tools under its Eco-camp / Adopt-a-habitat program .	LäjeRotuma, Rotuma Women Association, Rotuma High School community & the 4 partner primary schools on Rotuma	▪ A Rotuma-focused resource kit will be produced to collate the varietal impressions from the women, youth and children of Rotuma on manifestations of climate change in their lives. ▪ An exhibit to coincide with Rotuma Day celebrations on the island. ▪ An exhibition to coincide with a national climate change event i.e. in October 2012 at Labasa.	▪ A translated publication will be used for community awareness outreach					
			▪ Climate camp report ▪ Postcards of children's understanding of climate change and variability on Rotuma					
			▪ Proceedings on the Island youth forum on adaptation and leadership for Rotuma					
			▪ Photo-stories by the women on climate change affecting their island way of life					
			▪ Sharing of information on the CC web portal and the Rotuma website					

Activity	Responsible party	Expected outputs	Indicator	1	2	3	4	5
3. Conduct field surveys of existing swamplands, freshwater sources in Rotuma.	LäjeRotuma Council of Rotuma Rotuma Women's Group GIS resource person- National Trust of Fiji Land Use Planning- Dept. Agriculture	▪ Field report ▪ Desktop review of information on swamplands, its linked cultural practices and history of the *rano.*	▪ Field GIS scoping report ▪ Review of the swamplands, its customary practices linked to the *rano* with past coping strategies during extreme weather events i.e. drought.					
4. GIS mapping on change detection analysis of Rotuma's swamplands.	GIS resource person SOPAC, GIZ National Trust of Fiji	▪ Desktop analysis by GIS resource person.	▪ GIS map product of swampland changes and existing surface water sources on Rotuma ▪ GIS analysis report on the changes of swamplands					
5. Support the ongoing Rotuma integrated development planning process.	Council of Rotuma, Rotuma Affairs Unit. Fiji Rotuman Association (FRA), LäjeRotuma	▪ Inclusion of critical habitats in high risk of loss to be protected by village/district communities. ▪ A Rotuma *Rano* management plan outlining plan of activities by the women clubs and *rano*-communities.	• Draft design of protected areas including swamplands, freshwater sources for endorsement by the Council of Rotuma					
6. Conduct the rehabilitation of the selected swamplands and reforestation program on Rotuma	LäjeRotuma Council of Rotuma Rotuma Women Association Agriculture section-Rotuma Resource persons Village farmer groups adjacent to swamplands	▪ Establishment of at least 2 nursery and seedling banks for its women-sustainable forest-*rano* management program. ▪ Map the decided areas for tree planting by the women clubs. ▪ Actual planting will depend on the timing of the *rano* thus will seek support from the farmers group and custodians of selected *rano* areas.	• Rotuma *Rano* Management Plan endorsed by the Council of Rotuma • Rotuma Women Action Plan 2013 • An increased area of swampland (estimated area is 10.5ha) restored, % will be decided based on the change detection analysis report.					
7. Support mentoring sessions with the women group on a monthly basis	LäjeRotuma Rotuma Women Association Council of Rotuma Rotuma Affairs Unit Resource persons	• At least two skills (yet to be identified) training sessions with the women clubs of Rotuma. • Encourage the women clubs participation in the program with a competitive basis.	• Competition organized by the women with a theme on the 'protection of our *rano*'.					

Amount: at least $50,000 - $100,000 FJD

Total project budget (detailing funds from other sources including in-kind (non-monetary) contributions):

Full detail of costs	**LRI in kind contribution/other sources**	**in $FJD**
Coordination & Administration costs	*$2,000*	$8,000
Communication & Reporting & Printing	*$2,000*	$2,000
Translation & Publication & Exhibition	*$2000*	$5,000
Inter-island & island travel costs		$10,000
Documentation materials – camera for schools (7), art, printing	*$1,500*	$2,000
Resource persons (artists, resource persons & facilitators)	*$2,000*	$5,000
Mapping exercise & situation analysis of water resource use		$5,000
Workshops (including planning workshop for the project)	*$2,000*	$10,000
Contingency (est. 6% of total budget)	*$5,000*	$3,000
Total estimated budget	*$16,500*	**$50,000FJD**

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