Pacific Community
Communauté du Pacifique

Lifestyle changes and climate resilience in the Marshall Islands

GCCA+
THE GLOBAL CLIMATE CHANGE ALLIANCE PLUS INITIATIVE

Funded by the European Union

Lifestyle changes and climate resilience in the Marshall Islands

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Cover photo: Keep Majuro Clean team after doing a downtown cleanup. Photo: Canvasback Wellness Center

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Abbreviations

CLP	Community Lifestyle Program
CWC	Canvasback Wellness Center
GCCA+ SUPA	Global Climate Change Alliance Plus Scaling up Pacific Adaptation
LCCR	Lifestyle Changes and Climate Resilience
MIOFA	Marshall Islands Organic Farmers Association
MNRC	Ministry of Natural Resources and Commerce
MOHHS	Ministry of Health and Human Services
NCCHP v2	National Climate Change and Health Policy and Revised Action Plan, 2022
NCDs	non-communicable diseases
SPC	Pacific Community
USP	University of the South Pacific

Executive summary

The Global Climate Change Alliance Plus Scaling up Pacific Adaptation (GCCA+ SUPA) project is about scaling up climate change adaptation measures in specific sectors, supported by knowledge management and capacity building. The 4.5-year project (2019–2023) is funded with EUR 14.89 million from the European Union and implemented by the Pacific Community (SPC) in partnership with the Secretariat of the Pacific Regional Environment Programme and the University of the South Pacific, in collaboration with the governments and peoples of Cook Islands, Federated States of Micronesia, Fiji, Kiribati, Republic of the Marshall Islands, Nauru, Niue, Palau, Tonga and Tuvalu.

The overall objective is to enhance climate change adaptation and resilience in these ten Pacific Island countries. The specific objective is to strengthen the implementation of sector-based, but integrated, climate change and disaster risk management strategies and plans.

In RMI and starting in 2015, a Community Lifestyle Program (CLP) was piloted on Majuro Atoll by the Ministry of Health and Human Services (MOHHS) and Canvasback Missions Inc. The CLP aimed to establish health workers in multiple villages on Majuro atoll to check blood sugar levels and blood pressure, especially for diabetic patients, during weekend screenings in the villages.

Following consultations with the heads of government departments in March 2019, a proposal to scale up the CLP to include climate resilience was submitted by MOHHS and endorsed. This was followed by a broader consultation in July 2019 with government representatives, atoll mayors, atoll representatives and non-governmental organisations. A project design document for the GCCA+ SUPA Lifestyle Changes and Climate Resilience in RMI (LCCR) was prepared.

In November 2019, SPC contracted the Canvasback Wellness Center (CWC) to conduct the LCCR project from 1 January 2020 to 31 December 2022. Other partners included MOHHS, the Ministry of Natural Resources and Commerce (MNRC), the Taiwan Technical Mission, the Marshall Islands Organic Farmers Association, the Marshall Islands Epidemiology Initiatives, and the Mayors' Association.

The LCCR project offered the opportunity to upgrade and expand the health aspects of the CLP to the outer islands and to the Delap-Uliga-Darrit corridor on Majuro Atoll. It also added sustainable agriculture activities, in collaboration with the MNRC through their network of agricultural extension agents and other agencies. Together, these activities provided a more holistic approach to helping communities adapt their lifestyles and build their resilience to climate change.

The LCCR activities are aligned to SPC's people-centered approach, which consists of four pillars: human rights, gender and social inclusion, Pacific culture, and environmental sustainability. This places people and their environment at the centre of development planning, implementation, decisions, monitoring and reporting.

The overall objective of the LCCR project was to enhance sustainable health and food security to adapt to climate change in RMI. The specific objective was to strengthen community health, lifestyles and atoll agriculture in selected atolls.

Activities in Jaluit and Majuro Atolls under the LCCR included agricultural assessments; setting up of 147 home gardens with raised beds and wicking systems for irrigation; 21 home gardening training sessions; a community garden and greenhouse (in Jaluit only); training of 18 health workers to conduct health screening; equipment for health screening; 13 training events on nutrition, food safety and the preparation and cooking of locally grown vegetables; the establishment of 15 exercise groups with various activities for men, women and youth; and the airing of 15 radio shows featuring healthy lifestyles and climate change.

The LCCR project has the support of the national and local government and the staff hired will remain on either the payroll of the Canvasback Wellness Center or the local government when the project finishes. Staff at the Canvasback Wellness Centre have been trained by MNRC to maintain the agricultural activities, a gardener has been hired to do daily check-ups on the gardens on Majuro, and local staff have been hired on Jaluit to look after the greenhouse and community gardens.

Recognising that behavioural and lifestyle changes may require generations to take effect, the LCCR has achieved significant progress in its three-years of operation.

An external evaluation of the LCCR project was conducted in 2023. The evaluation noted that continuation of the LCCR project most likely lies in leveraging with other projects and plans, e.g. a proposal to expand the LCCR project to other atolls has been prepared and submitted to the USAID Pacific-America Fund, following requests from other mayors.

1 Introduction and background

1.1 About the Global Climate Change Alliance Plus Scaling up Pacific Adaptation project

Climate change and natural disasters are among the greatest challenges jeopardising and undermining the ability of all countries, particularly Pacific countries, to achieve the UN sustainable development goals and reduce poverty. The Global Climate Change Alliance Plus Scaling up Pacific Adaptation (GCCA+ SUPA) project falls under the GCCA+ flagship initiative, which has three priorities:

i. mainstreaming climate change issues into poverty reduction and development efforts;

ii. increasing resilience to climate-related stresses and shocks; and

iii. supporting the formulation and implementation of concrete and integrated sector-based climate change adaptation and mitigation strategies.

The GCCA+ SUPA project is about scaling up climate change adaptation measures in specific sectors, supported by knowledge management and capacity building. The 4.5-year project (2019–2023) is funded with EUR 14.89 million from the European Union and implemented by the Pacific Community (SPC), in partnership with the Secretariat of the Pacific Regional Environment Programme and the University of the South Pacific, and in collaboration with the governments and peoples of Cook Islands, Federated States of Micronesia, Fiji, Kiribati, Republic of the Marshall Islands, Nauru, Niue, Palau, Tonga and Tuvalu.

The overall objective of the GCCA+ SUPA project is to enhance climate change adaptation and resilience in these ten Pacific Island countries. The specific objective is to strengthen the implementation of sector-based, but integrated, climate change and disaster risk management strategies and plans.

The three key outputs for the GCCA+ SUPA project are:

- to strengthen strategic planning at national levels;
- to enhance the capacity of sub-national government stakeholders to build resilient communities; and
- to scale up resilient development measures in specific sectors.

The activities adopted a people-centred approach to development planning which places people and their environment at the centre of development planning, implementation, decision-making, monitoring and reporting. This approach consists of four pillars: human rights, gender and social inclusion, Pacific culture, and environmental sustainability. A set of six guiding principles were developed for the implementation of the people-centred approach: Participation, Link to rights, Accountability, Non discrimination, Empowerment and Transforming social norms (PLANET). The application of these principles helps to maximise positive social and environmental outcomes for development projects.

The project also took into account lessons learnt and wise practices from the regional, national, sub-national and community-based projects and programmes implemented over the last decade.

1.2 Background to the Marshall Islands

RMI consists of a total of around 1225 low-lying islands, with very few places higher than three metres above sea level. Just 29 atolls and five coral islands are inhabited, comprising about 180 square kilometres of land scattered over 4,600 square kilometres of the North Pacific Ocean, with an exclusive economic zone of around two million square kilometres.

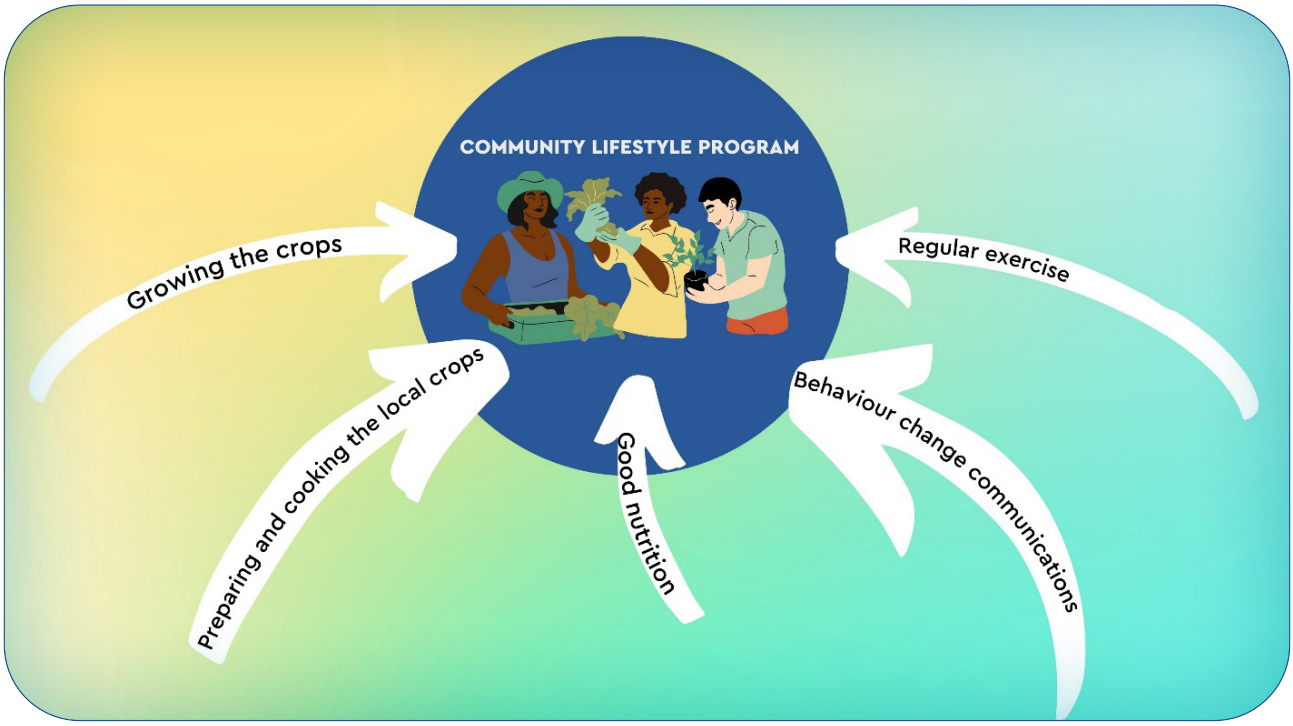
Almost 70% of the population of around 55,243 (2016 estimate RMI ESSPO, based on 2011 Census and 2016 SPC estimates) are concentrated in urban centres on Kwajalein (Ebeye) and Majuro atolls. People have been migrating from the outer atolls to these urban centres in search of income and education opportunities, as well as for medical needs.

The subsistence economy plays an important part in people's lives, especially outside urban areas. In terms of income-generating activities, copra, coconut oil and fish (particularly yellowfin tuna) are the main sources of revenue. In terms of formal employment, nearly half the salaried workforce is employed in the public sector. Unemployment rates are high, especially among women. This narrow range of employment and income streams makes RMI economically vulnerable to changes in the country's physical environment, including those related to climate change.

1.3 Design and selection of the Lifestyle Changes and Climate Resilience project

Countries involved in the GCCA+ SUPA project were asked in 2019 to select their sector focus and a particular activity they wished to scale up. In March of that year, the Chief Secretary of RMI invited heads of government departments to express their interest in the GCCA+ SUPA project and submit proposals. The proposal from the Ministry of Health and Human Services (MOHHS) was selected and, after further consultations, a project design document for the Lifestyle Changes and Climate Resilience (LCCR) project in the Marshall Islands was finalised.

The RMI's National Climate Change and Health Action Plan of August 2012 had identified several climate-sensitive health risks. Some of these could be addressed by the LCCR, including: (i) malnutrition due to crop failures related to inundation; and (ii) obesity, circulatory disease, diabetes and related NCDs due to altered dietary patterns and dependence on processed foods and altered physical activity levels.



The Community Lifestyle Program

The LCCR project is an upscaling of the Community Lifestyle Program (CLP) which was piloted on Majuro Atoll starting in 2015 by MOHHS and Canvasback Missions Inc. The CLP aimed to establish health workers in multiple villages on Majuro atoll to check blood sugar levels and blood pressure, especially for diabetic patients, during weekend screenings in their villages. The GCCA+SUPA project offered the opportunity to upgrade and expand the CLP to the outer islands and improve health care on Jaluit Atoll (a rural environment) and the Delap-Uliga-Darrit (DUD) corridor communities on Majuro Atoll, an urban environment. The project added cooking classes, agriculture classes and the establishment of home gardens to the health programme, making it more holistic in its approach and more sustainable long term, as climate change continues to adversely affect the lifestyles of the people living in RMI. It also included a particular focus on sustainable agriculture, in collaboration with the Ministry of Natural Resources and Commerce through their network of agricultural extension agents, the Taiwan Technical Mission, and the Marshall Islands Organic Farmers' Association.

The overall objective of the LCCR project is to enhance sustainable health and food security to adapt to climate change in RMI and the specific objective is to strengthen community health, lifestyles and atoll agriculture in selected atolls.

In December 2019, a three-year service contract was signed between SPC and Canvasback Wellness Center to **"Enhance community health, lifestyles and atoll agriculture in Majuro and one outer atoll, RMI"**.

This summary report describes and analyses the achievements, highlights, challenges and lessons learnt from the LCCR project over the three-year period. After the LCCR contract was completed, an external evaluation of the project was undertaken and the main results of the evaluation are presented under lessons learnt, together with a discussion on sustainability.

The report has four main sections: (i) introduction and background; (ii) achievements of the LCCR, including the agriculture and health/wellness activities; (iii) lessons learnt and discussion; and (iv) conclusion.

An associated activity was conducted in RMI under the GCCA+ SUPA project from 2020 to 2022. This consisted of the preparation of the National Climate Change and Health Policy and Revised Action Plan, 2022 (NCCHP v2). Several of the activities addressed in the LCCR were incorporated into the NCCHP v2 Action Plan.

2 Lifestyle changes and climate resilience activities

Residents in the Marshall Islands are already facing significant health and nutrition challenges, especially in the smaller, outer atolls. These challenges are exacerbated by climate change, such as rising daytime and night-time temperatures, increased droughts resulting in water shortages, and changing rainfall patterns. Added to this, many outer island communities rely on imported, processed food for all their needs.

Non-communicable diseases, such as high blood pressure and diabetes are prevalent in the Marshall Islands. The LCCR project attempted to lay the foundation for the establishment of household and community-based agriculture by growing local vegetables and fruits in selected atolls, in combination with regular health checks and screenings, regular exercise, and nutrition training. It is anticipated that, over the longer term, adopting a holistic approach combining atoll agriculture, nutrition, health monitoring and wellbeing will enhance the resilience of individuals and communities to climate change.

While a three-year project can lay only a foundation for such lifestyle changes, it is anticipated that, if successful, continuation of the activities may be achieved by leveraging on other activities.

2.1 Enhancing community and household-based atoll agriculture in selected atolls

2.1.1 Introduction

In 2020, agricultural assessments and action plans for atoll agriculture were prepared for selected communities in Majuro atoll and Jaluit atoll. The Canvasback Wellness Center partnered with the Ministry of Natural Resources and Commerce (MNRC), especially their agricultural extension agents, the Marshall Islands Organic Farmers Association (MIOFA) and the Taiwan Technical Mission.

During 2021 and 2022, raised beds and community gardens were established, extensive training was provided in growing different types of crops, including tree crops, and small tools were provided to participating households in Majuro and Jaluit atolls. A community garden and a nursery were established in Jaluit atoll.

2.1.2 Agricultural assessments

In late February 2020, an agricultural assessment was conducted in three communities in Jaluit atoll: Jabor, Jaluit and Imeij. The assessments included the types of crops grown, the number of livestock (mainly pigs and chickens), and the number and size of households.

One hundred individual surveys were conducted and data analysis identified the communities of Jaluit and Jabor as the main sites for agriculture. (Imeij was not included because of the presence of unexploded ordnance left over from World War 2).

The agriculture team preparing for agricultural assessment in Jaluit atoll.
Photo: Canvasback Wellness Center

The assessments were useful to identify the type of agricultural activities that would have most chance of success. For example, it had been initially planned to construct ground beds and to use the produce to supply the cafeteria at the Jaluit High School with fresh produce. However, recognising that Jaluit is a low-lying atoll subject to saltwater inundation and sea spray, raised beds were used instead, and training in their construction was given to the MNRC extension agent.

From March to May 2020, a team of ten agriculture agents surveyed the households in the Delap-Uliga-Darrit corridor on Majuro atoll. The survey questions were based on a standardised survey from Australia, combined with other atoll-specific survey questions from the MNRC survey of households. In total, 280 houses were surveyed, and the findings analysed and scored to determine which households were most likely to care for a home garden system. The main issues identified during this assessment were: a lack of gardening space, high reliance on imported foods and a lack of knowledge about pest control.

2.1.3 Home gardens and raised beds

Fifty-four home gardens with raised beds were established in Jaluit and 93 in Majuro. Raised beds are positioned about one metre above the ground to protect them from saltwater flooding and damage by livestock. They are also built with wicking systems, which provide for efficient watering, relying on the suction that plant roots create in drawing water from the soil.

The 93 households selected to receive the raised beds in Majuro were mainly the houses of people with diabetes and hypertension. This vulnerable group was selected to help support and promote healthier lifestyles and healthy meals for the patients.

Annex 1 presents the details relating to each home garden, including location, name of householder, date the home garden was started, crops planted and the most successful crops. (For Annex 1 – see Excel spreadsheet entitled “All activities data” /Sheet 1 “Individual home gardens”)

The vegetables planted included cabbages, eggplant, cucumber, tomatoes, okra, beans, corn, radishes, pak choi and kangkong, the most successful of which were cabbages, eggplant, cucumber, tomatoes and okra.

Householders were also provided with tools – wheelbarrows, rakes, shovels and gloves – to help maintain their home gardens.

2.1.4 Agricultural training

A total of 21 home gardening training events were conducted in Majuro and Jaluit atolls between 2020 and 2022, covering practices such as placement of gardens, home gardening, planting, soil replenishment, harvesting and pest control. Two hundred and thirty-five people were involved in these training events (143 females and 92 men). See Annex 2 for a list of the training events.

Training in the pruning of overgrown breadfruit and pandanus trees was done in Jaluit, and the communities were provided with five chainsaws and two weed eaters. Land was cleared for the building of the greenhouse and the community garden.

Evaluations on Majuro found that no tree pruning was needed due to the maintenance done by local government for road safety.

In partnership with the Taiwan Technical Mission and MNRC, over 100 pineapple, 50 taro and 50 cassava plants were planted, together with 75 papaya trees.

2.1.5 Establishment of a community garden and greenhouse in Jaluit

In June 2021, the Jaluit High School garden was upgraded with multiple raised beds, and more land was cleared for gardening. Training was provided to the teacher responsible for gardening, and taro, pineapples, cucumbers, spinach, cassava and sweet potatoes were planted.

While home gardening on Jaluit Atoll was progressing well by the beginning of 2022, with more than 30 home gardens in place, there was no local source for seeds, seedlings or small plants to stock the home gardens or the school and community gardens. This could jeopardise the continuation of the LCCR project.

To ensure that the existing activities could continue on Jaluit Atoll, Canvasback Wellness Center, together with the MOHHS, applied for additional funding from the overall GCCA+ SUPA project to establish a sustainable source of seeds, seedlings and young plants. A proposal was prepared to build a greenhouse and train men, women and youth in the selection of seeds, planting and care of seedlings, and the transplanting and propagation of plants.

This additional activity was completed in 2022, in partnership with the Jaluit Atoll local and traditional leaders and the Ministry of Education, Sports and Training. Blueprints from the Ministry of Public Works were created, using the design layout provided by MNRC. Ten men from Jaluit constructed the greenhouse and took part in the training conducted by MIOFA on seed selection, planting, care and propagation. Some students from Jaluit High School were also included in the training.

Plans are in place to maintain the greenhouse and start a farmers' market on Jaluit Atoll with produce from the home gardens, community gardens and the greenhouse.

A 1600 sq ft greenhouse established in Jaluit atoll. Photos: Canvasback Wellness Center

2.2 Fostering lifestyle changes linking nutrition and wellness in selected atolls

2.2.1 Introduction

Before the LCCR started in 2020, the Community Lifestyle Program (CLP) had only a few trained health workers and they completed very basic weekly health assessments. The focus was on patients with easy access to the Majuro General Hospital. This section of the report presents the additional scaling up of the CLP achieved through the LCCR, supported by the GCCA+ SUPA project.

Health workers and exercise managers at their weekly team meeting.
Photo: Canvasback Wellness Center

2.2.2 Training of health workers

As part of the LCCR project, 18 health workers were trained between 2020 and 2022 (15 females and 3 males). (See Annex 3.) While some of the health workers migrated to the USA over the course of the LCCR, the project was able to recruit and maintain the same number.

The health workers use tablets or cell phones to record and chart patients' records. With the help of the Marshall Islands Epidemiology Initiatives, a database was developed using KoboCollect, which does not require internet connections so it can be easily used in remote areas of Majuro and Jaluit atolls. Screening data, such as blood pressure, blood sugar levels and Body Mass Index (BMI) status, are saved via a cloud service and reports are run on a monthly basis. This has helped track patients closely and identify problems early. The database system is integrated with the hospital system, which tracks all NCD clinic patients, and helps the community health workers and health care professionals track patient progress.

Newly trained health workers. Photo: Canvasback Wellness Center

Preliminary findings show that, while many people have followed the programme of lifestyle change and the home gardens have helped by providing some fresh vegetables, more education and more community support are needed. On Jaluit Atoll, it is still hard to get fresh produce and people are almost completely dependent on imported foods. A trend is emerging, showing that those who exercise and eat from the gardens have better control of their blood pressure and blood sugar level.

Each week, the health workers visit old and new patients. Over the three-year LCCR project, 3,187 patients were screened (1,932 females and 1,255 males). (See Annex 3.) Patients are referred to the NCD clinic at the hospital when necessary. The health workers also help deliver medicines and provide transport to exercise classes and gardening classes at the Canvasback Wellness Center. Small community clinics are supplied with much needed medicine through partnerships with the Outer Islands Health Care team at the Majuro Hospital.

The LCCR has facilitated reaching out to the smaller islands within Majuro Atoll by road and Jaluit Atoll by boat. Many people living on the small islands had trouble reaching the main hospital or clinic for care. The Canvasback Wellness Center now works with the hospital to offer Community Based Rehabilitation in these remote areas.

2.2.3 Health screening and other equipment

The LCCR also purchased health screening and other equipment for the communities on Majuro and Jaluit. The equipment included tablets, glucometers, test kits, medical supplies and exercise equipment (volleyball and basketball equipment and walking shoes). The equipment purchased is presented in Appendix 4.


A community health screening in downtown Majuro. Photos: Canvasback Wellness Center

2.2.4 Nutrition training activities

Nutrition education training was conducted, as well as food safety and training in the preparation and cooking of locally grown vegetables. Thirteen training events were completed, attended by 469 people (270 females and 199 males), see Annex 5 for details. Training events were varied, ranging from targeting the school lunch programme to nutritional education for church groups. One training in June 2022 targeted nutritional training for the parents of children with special needs and was well received by the 34 participants.


Left: Philmar Kabua teaches healthy cooking during a cooking demo at local supermarket.
Right: A raised bed garden given to home participants. Photos: Canvasback Wellness Center

2.2.5 Exercise groups and events

Fifteen groups participating in different forms of exercise were established during the LCCR, see Annex 6 for details. Eight walking clubs were established, and groups exercised daily, bi-weekly or weekly. These were more popular with females (270 females and 55 males). It was found that, while some men joined the walking clubs, they stopped after about two months. A series of sports events more attractive to men were planned, e.g. a basketball league for men over 35 years old. Other exercise activities included regular volleyball, basketball and table tennis exercise activities, attended regularly by both men and women (115 females and 124 males) and ten specific events featuring the same sports and involving 943 persons (352 females and 591 males).

In Jaluit, youth at the Jaluit High School were involved in many of the LCCR activities, including the raised bed gardening project, renovation of the Jabor basketball and volleyball court, and a volleyball tournament involving 24 teams (300 students).

Women stretch before a group exercise session.
Photo: Canvasback Wellness Center

A Keep Majuro Clean event was piloted in Jenrok *weto* over a one-week period in 2021. The goal was to engage several communities to create a healthy, clean environment. It started with an education component and the distribution of fliers about what to do, followed by an assessment of the community environs which was shared with community members. Several days later, the communities were re-assessed and prizes awarded to the communities who had achieved the best results according to specific criteria. A follow-up activity involving additional communities over a longer two-week period was conducted in 2022.

2.2.6 Communications

Fifteen radio shows were broadcast between 2021 and 2022. These included formal broadcasts on healthy lifestyles, climate change and food security, several promotion and awareness programmes on the Keep Majuro Clean initiative, as well as outreach programmes on hypertension and sporting events. (See Annex 7 for a list of the radio show topics.)

3 Lessons learnt and discussion

3.1 External evaluation of the LCCR

The LCCR project was reviewed by an independent consultancy firm over the period February – May 2023. The findings and recommendations were intended to provide independent advice to RMI and development partners and to inform strategic decision-making for future programming. The evaluation was designed to test project effectiveness, efficiency, inclusivity and sustainability, as well as to provide recommendations. The full executive summary of the evaluation is presented in Annex 8.

Key findings from the evaluation are shown below.

Lifestyle changes

- The LCCR implementation period was only three years, which limited its ability to affect population health and community attitudes, which are slow to shift. LCCR has, however, been able to demonstrate short-term outputs: increasing the use of home and community gardening and building community awareness on positive nutritional and fitness choices.

Enhancing community and household-based agriculture

- Overall, the project has had some success in increasing local gardens and providing agriculture-based training and equipment to communities. There are, however, still some limitations and challenges, and more engagement and commitment from stakeholders are required.
- The atoll needs assessments conducted in 2020 were intended to target support where most needed. They identified a lack of gardening space, knowledge on pest control, and a high reliance on imported food in Majuro. In Jaluit, a lack of home gardening, pruning knowledge, and understanding about cooking with vegetables were identified. The project provided equipment and consumable material, including material to construct garden beds, chainsaws, wicking systems, garden nets, raised beds, diesel containers, compost and soil.
- According to interviews, there have been positive changes in attitude to vegetables in meals due to increased access to and affordability of fresh produce through home and community gardening. Jaluit High School has also incorporated vegetables sourced from the school garden into the meals prepared for students, with support from the principal and vice principals.

Increasing physical activity

- The design proposed several initiatives aimed at promoting healthy behaviours and increasing physical activity among community members. These initiatives included new walking and exercise clubs, men's wellness activities, high school sports competitions, health checks and cooking classes.
- In terms of physical activity, there have been new walking clubs, community sports competitions and high school sports competitions supported by new equipment. There have, however, been some challenges in sustaining fitness activities due to funding constraints, which have affected membership incentives and provision of supplies.

Inclusion of vulnerable groups

- LCCR has made efforts to be inclusive and address the needs of diverse groups. The project design includes specific participatory and non-discrimination components and there are indicators regarding health and lifestyle changes targeted at reaching women, vulnerable groups, and men. The initial needs assessments and target households were designed to reach those most vulnerable.
- LCCR has engaged with women through inclusive consultations and activities such as home gardens, and with youth through specific events and seminars, working with schools. The project has also worked with people living with disabilities and the elderly in partnership with the Marshall Islands Disabilities Persons Organization. Supporting data in terms of the proportion of marginalised groups reached were not available, as disaggregated data are not routinely collected or reported except in terms of patient presentations.

Unexpected results

- There have been some unexpected results reported. For example, some stakeholders have expressed concern that the focus on climate change and health may be taking attention and resources away from other important health issues, such as non-communicable diseases (NCDs) more generally. In fact, however, the CWC organisation was initially set up to address NCDs, so focus on these is implicit in their work.

3.2 Sustainability elements

- The endorsement of the NCCHP (v2) in 2022 is an important milestone for addressing key health issues that are being exacerbated by climate change. Inclusion of LCCR activities in the action matrix of the NCCHP (V2) will help align the activities and build on the most cost-effective activities in previous programmes, both in RMI and regionally. Specific activities to address health issues, commenced through the LCCR project, are already included in the action plan matrix for the NCCHP (v2) 2021–2025. These activities are shown in the table below.

LCCR activities specified in the action plan matrix for the NCCHP (V2) 2021–2025

Health issues identified in the NCCHP (V2)	Actions needed and started by LCCR
Food safety and security	▪ Improve agricultural practices to increase local food production. ▪ Increase outreach and awareness-raising in sustainable agricultural techniques, including irrigation (wicking systems), pest control and use of non-chemical fertilisers.
Vector borne diseases	▪ Engage with landowners and church leaders for coordinated community clean-up activities.
Non-communicable diseases	▪ Raise awareness in schools and communities about health nutrition and the importance of a balanced diet. ▪ Promote and raise awareness about the importance of physical activities for men and women of all ages and abilities. ▪ Increase the availability of facilities for sports and exercise for all.

- The partnership between the MOHHS and CWC has been an effective and efficient one. The service contract was signed in 2019, allowing for three full years of project implementation. While this period was not long enough to effect lifestyle changes, it was of sufficient duration to deliver on the project's overall and specific objective.
- The appointment of a coordinator to head up climate change activities in MOHHS is a positive step towards promoting ownership and coordination of ongoing work in this area. However, it is crucial to ensure that stakeholders are aware of the different roles and responsibilities within the project and the status of results and finances over time. A thorough monitoring and evaluation system can help identify areas of improvement, assess the project's effectiveness, and inform future project planning and implementation.
- It is crucial to establish sustainable funding options for this work to ensure its continuity. The fact that the project goals under GCCA+SUPA remain relevant and that there is a gap that cannot be addressed through existing government resources indicates that the project work remains essential and needed.
- Stakeholders have generally valued the work and strong community engagement that has developed with local councils, mayors and MOHHS but the reliance on funding and CWC has meant that in 2023 LCCR activities are piecemeal. The lack of an exit strategy has meant that the hand-over has not been planned for or implemented formally. Despite having only an informal hand-over, the LCCR project successes have created leverage for future expansion and funding proposals for RMI and CWC.
- The LCCR project has the support of the national and local government and the staff hired will remain on either the payroll of the Canvasback Wellness Center (CWC) or the local government. Staff at the center have been trained by MNRC to maintain the agricultural activities and a gardener has been hired to do daily check-ups on the gardens on Majuro. Local staff have been hired on Jaluit to look after the greenhouse and community gardens.
- A proposal has been prepared and submitted to the Pacific-America Fund, supported by USAID, to expand the LCCR project to other atolls following requests from other mayors.
- The LCCR project successes have created leverage for future expansion and funding proposals for RMI and for CWC. Examples are listed below.
    - The outer islands of Wotje, Ebon and Likiep are now targeted by CWC to start similar work there. Conversations with the local governments have taken place and teams will soon be sent out to do data collection and speak with the communities to start the process.
    - On Majuro, many people are making direct requests to CWC for a continuation of the home gardening classes and help for people to build their own gardens.
    - Majuro Hospital is sending out health workers door-to-door in conjunction with the NCD clinic and upgrading their referral processes. CWC is upgrading its database system to better identify focus areas and is hiring two more health workers for Majuro.
    - The prediabetes, diabetes and hypertension prevention classes have funds to go to smaller atolls within Jaluit atoll and expand to Wotje and Ebon atolls. CWC will conduct zoom classes until the master coach can train new lifestyle coaches on each atoll.

3.3 Challenges

Better communication, time management and collaboration are the three most important operational lessons learnt for moving forward. Understanding peoples' needs and their culture is essential for helping individuals to change their lifestyle in the face of climate change. The table below lists some of the operational challenges and how they were addressed during the three-year project.

Addressing operational challenges in Majuro and Jaluit

Challenges faced	How they were addressed
Lack of management training	Utilised online training resources.
Shortage of local transportation	Collaborated with local government leaders to provide transportation. Improvised and used boats to transport supplies to other places on neighboring islands and share freight costs.
Water issues	Sought help from neighbours to allow patients to use water from their water catchment to water the plants. Made maximum use of rainwater harvesting during the wet season.
COVID pandemic restrictions on face-to-face contact and travel	Waited until MOHHS provided the green light to carry on with activities.
Aggressive dogs	Called in advance to have patients restrain and look after dogs before and during visits.
Miscommunication	Provided advance advice and announcements before the project started. Provided regular updates and advice on activities conducted and upcoming events.
Poor internet and cellular connections	Always called in advance to inform workers.
Bad weather	Substituted indoor activities wherever possible.
Time management	Provided counseling and daily reminders on the importance of time management. When necessary, worked late to cover hours missed.
Rocky road	Travelled light and transported supplies in advance.
High tides	Seasonable high tides made the road to Jaluit impassable. Planned all activities and visits around low tide.
Shortage of staff	Hired local workers with experience in agriculture work, and local youth for unloading supplies.
Limited space for raised beds	Constructed 2 x 3 ft raised beds for safe delivery and suitability for household space available.

3.4 Lessons learnt

- Include strong sustainability planning that facilitates hand-over to local partners.
- Recognising that behavioural change may take a generation for programmes/projects of limited duration such as GCCA+ SUPA, the final year of implementation should focus on hand-over of key activities.
- Engage broadly and form meaningful partnerships. Share learning regionally and within RMI and communities regularly.
- Strengthen national programme coordination and governance.
- Ensure gender and social inclusion through a people-centred approach.
- Ensure that community participation in design and implementation continues.

4 Conclusion

Recognising that the overall objective of the LCCR project was to enhance sustainable health and food security to adapt to climate change and that the specific objective was to strengthen community health, lifestyles and atoll agriculture in selected atolls, the LCCR project achieved its objectives. It is anticipated, however, that it will take at least a generation for behavioural and lifestyle changes to take effect.

The recommendation to use the final year of project implementation to focus on the formal and informal hand-over of key activities, as well as to deliver the final activities, can be applied to the LCCR as well as to other projects and programmes. All too often the formal hand-over of key activities is a last-minute action, only considered at the final report writing stage.

Anchoring and aligning the LCCR project activities with the NCCHP (V2) is conducive for its sustainability, as this will ensure monitoring and evaluation that can help identify areas of improvement, assess the project's effectiveness, and inform future project planning and implementation.

While the LCCR project has achieved significant progress in its three years of operation, continuation of the activities most likely lies in leveraging with other projects and plans.

ANNEX 1 List of individual home gardens 2021

Location – GPS	Name of householder with home garden	Number of raised beds established	Date home garden started	Crops planted	Most successful crop	No. harvests of most successful crop
MAJURO – INDIVIDUAL HOME GARDEN DETAILS						
2020						
Latitude: 7.1134333333 Longitude: 171.3677721 Altitude: 23.0 Accuracy: 4.9	Lee Jacklick	1	4/20/20	no planted crops, based meals on imported goods	no planted crops, survey conducted	showed interest in growing vegetables
Latitude: 7.1135100000 Longitude: 171.36762499 Altitude: 18.7	Lorn Jacob	1	4/20/20	no planted crops, based meals on imported goods	no planted crops survey conducted	showed interest in growing vegetables
Laitude: 7.113673333 Longitude: 171.36739166 Altitude: 11.6 Accuracy: 6.2	Hemita Luther	1	4/20/20	no planted crops based meals on imported goods	no planted crops survey conducted	showed interest in growing vegetables
Latitude: 7.113713333 Longitude: 171.36775166 Altitude: 13.5 Accuracy 6.0	Tammy Herkinos	1	4/20/20	cucumber, pak choi, bell pepper, papaya,binana	binana & cucumber	more than five times based on harvesting time
Latitude: 7.1142400000 Longitude: 171.36728833 Altitude: 9.7 Accuracy: 5.2	Salome Aloka	1	4/20/22	no planted crops, based meals on imported goods	no planted crops survey conducted	showed interest in growing vegetables
Latitude: 7.12363333 Longitude: 171.35842833 Altitude: 50.1 Accuracy: 8.9	Rose Daniel	1	5/5/20	lime, breadfruit, binana	breadfruit & binana	seasonal
Latitude: 7.12302499999. Longitude: 171.3584000 Altitude: -39.2 Accuracy: 9.0	Junior Edward	1	5/5/20	eggplant, cucumber, tomato, bell pepper, lemon, coconut tree, pandanus, guava	all crops	more than five times based on harvesting time
Latitude: 7.12353 Longitude: 171.35823666 Altitude: 34.5 Accuracy: 8.2	Neiwer Milne	1	5/5/20	no planted crops, based meals on imported goods	no planted crops, survey conducted	showed interest in growing vegetables
Latitude: 7.123266666 Longitude: 171.35800166 Altitude: 25.0 Accuracy: 10.3	Mary Jarom	1	5/5/20	no planted vegetables growing binana	mostly binana	seasonal
Latitude: 7.123670000 Longitude: 171.3574066 Altitude: 2.2 Accuracy: 10.2	Paul Madidison	1	5/5/20	lime, coconut tree, breadfruit, pandanus	no planted vegetables survey conducted	harvest seasonally

Location – GPS	Name of householder with home garden	Number of raised beds established	Date home garden started	Crops planted	Most successful crop	No. harvests of most successful crop
MAJURO – INDIVIDUAL HOME GARDEN DETAILS						
2020						
Latitude: 7.08860833333. Longitude: 171.38110333 Altitude: 7.4 Accuracy: 4.9	Florenda Ruben	1	6/19/20	based meals on imported goods	no planted crops, survey conducted	showed interest in growing vegetables
Latitude: 7.08860333333 Longitude: 171.38138666 Altitude: 13.6 Accuracy: 5.0	Lise Latdrik	1	6/19/20	planted local food crops	mostly binana	seasonal
Latitude: 7.0887016666 Longitude: 171.38147333 Altitude: 17.8 Accuracy: 4.9	Calinta Latbrij	1	6/19/20	based meals on imported goods	no planted crops survey conducted	showed interest in growing vegetables
Latitude: 7.0888133333 Longitude: 171.381565 Altitude: 33.1 Accuracy: 4.6	Hanity Jason	1	6/19/20	based meals on imported goods	no planted crops, survey conducted	showed interest in growing vegetables
Latitude: 7.08602 Longitude: 171.3780333 Altitude: 8.0 Accuracy: 4.9	Bwijen Lewis	1	6/19/20	based meals on imported goods	no planted crops survey conducted	showed interest in growing vegetables
2021						
Latitude: 7.0916989 Longitude: 171.3832685 Altitude: 35.1000022 Accuracy: 4.566	Ben Jason	1	8/2/21	cabbages, eggplants, tomatoes, kangkong, okra, corn	bino cabbages & eggplants	3
Latitude: 7.0918525 Longitude: 171.3829632 Altitude: 35.100000228 Accuracy: 4.5 Latitude: 7.0918066 Longitude: 171.3830095 Altitude: 35.0 Accuracy: 4.12	March Laskan	2	8/2/21	cabbages, kangkong, eggplants, cucumber	bino cabbages & eggplants	more than 5 times
Latitude: 7.0935858 Longitude: 171.3825578 Altitude: 33.0 Accuracy: 4.8	Monalisa Allison	1	8/2/21	cabbages, eggplant	bino cabbages, eggplants	more than 5 times
Latitude: 7.1065575 Longitude: 171.3758261 Altitude: 32.799999923 Accuracy: 4.54	Jenifer deBrum	1	8/2/21	not provided seedlings yet person travels a lot to outer islands working for UNDP		

Location – GPS	Name of householder with home garden	Number of raised beds established	Date home garden started	Crops planted	Most successful crop	No. harvests of most successful crop
MAJURO – INDIVIDUAL HOME GARDEN DETAILS						
2021						
Latitude: 7.1112983 Longitude: 171.3682858 Altitude: 36.4 Accuracy: 3.833	Rosemetha Leban	1	8/3/21	cabbages, kangkong, eggplants, cucumber,pumpkin	pumpkin, crowded space causing cabbages not to survive	two times
Latitude: 7.11425214 Longitude: 171.36690859 Altitude: 2.4251603849 Accuracy: 38.419	Judy Balos	2	8/3/21	cabbages, eggplants, tomatoes, kangkong, okra, corn	bino cabbages	more than five times
	Sylvia Zedkeia	1	8/3/21			
Latitude: 7.1126608 Longtitude: 171.3683692 Altitude: 0.0 Accuracy : 1910.0 Latitude: 7.1144056 Longitude: 171.3668236 Altitude: 37.3	Romeo Iseiah	2	8/3/21	cabbages, kangkong, eggplants, cucumber, tomatoes, lettuce, okra,	cucumber, lettuce, tomatoes, pak choi	more than five times
Latitude: 7.1097257 Longitude: 171.3696759 Altitude: 37.5 Accuracy: 4.937	Libon Jorkan	1	8/4/21	bino cabbages, tomatoes, eggplants,	eggplants & cabbages	more than five times
Latitude: 7.11424260 Longitude: 171.36690596 Altitude: 3.2188661098 Accuracy: 45.233	Henry Henry	1	8/4/21	eggplants, tomatoes	eggplants & tomatoes	more than five times
Latitude: 7.1162022 Longitude: 171.36638 Altitude: 30.8 Accuracy : 3.3	Leke Cassity Ankein	1	8/4/21	cabbages, eggplants, tomatoes, kangkong, okra, corn	bino cabbages	more than five times
Latitude: 7.111532 Longitude: 171.3691747 Altitude: 0.9 Accuracy: 4.971	Lucylang Alfonso	1	8/4/21	cabbages, eggplant	cabbages survive only few month due to pest disease	only two times
Latitude: 7.12256731 Longitude: 171.36388035 Altitude: 3.2100789547 Accuracy: 46.531	Marshelino Mino	1	8/4/21	pak choi, eggplant	eggplant	more than five times
Latitude: 7.12240598 Longitude: 171.36329361 Altitude: 3.2101628780 Accuracy: 57.331	Maylina Jeik	1	8/5/21	pak choi, eggplant	cabbages – crowded space causing pest disease to destroy the crop	only two times

Location – GPS	Name of householder with home garden	Number of raised beds established	Date home garden started	Crops planted	Most successful crop	No. harvests of most successful crop
MAJURO – INDIVIDUAL HOME GARDEN DETAILS						
2021						
Latitude: 7.12197439 Longitude: 171.36429101 Altitude: 3.1716611385 Accuracy: 42.247	Sussie Romak	1	8/5/21	pak choi, eggplant	bino cabbages	only five times
Latitude: 7.12185348 Longitude: 171.36415363 Altitude: 3.2105174065 Accuracy: 42.892	Trinidad Kaiko	1	8/5/21	pak choi, eggplant later planted pumpkin	cabbages and pumpkin	more than five times
Latitude: 7.1096375 Longitude: 171.3697804 Altitude: -29.48678672036312 Accuracy: 4.92	Nicklas Jorkan	1	8/5/21	pak choi, eggplant, kangkong	eggplant, cabbages	more than five times
Latitude: 7.1223839 Longitude: 171.3627757 Altitude: 12.9 Accuracy: 5.95	Laibo Manjideb	1	8/6/21	cabbages, eggplant	cabbages	pest disease destroy crop
Latitude: 7.1220263 Longitude: 171.3626909 Altitude: 12.8 Accuracy : 4.35	Cathy Abin	1	8/6/21	cabbages, eggplants, tomatoes, kangkong, okra, corn	pak choi	only twice, pest disease
Latitude: 7.12376210 Longitude: 171.35845671 Altitude: 3.2091634274 Accuracy: 45.131	Grace Abon	1	8/6/21	cabbages, cucumber, egpplant, tomatoes	cabbages and cucumber	twice so far and still harvesting
Latitude: 7.1096497 Longitude: 171.369674 Altitude: 27.669237599 Accuracy: 4.98	Tonta Bujen	1	8/9/21	cabbages, eggplant	eggplant	more than five times
Latitude: 7.1095658 Longitude: 171.3697009 Altitude: 37.4 Accuracy: 3.746	Barney Joutha	1	8/9/21	cabbages, eggplant	eggplant	more than five times
Latitude: 7.1095658 Longitude: 171.3697009 Altitude: 37.4 Accuracy: 3.746	Osina Edward	1	8/9/21	cabbage, cucumber, eggplant	eggplant	more than five times
Latitude: 7.1077788 Longitude: 171.3746118 Altitude: 38.3 Accuracy: 4.766	Jolynn Langior	1	8/10/21	cucumber, raddish,pak choi	cucumber	more than five times
Latitude: 7.1122798 Longitude: 171.3687807 Altitude: 28.5 Accuracy: 4.7	Lorine Graham	1	8/10/21	cabbages, eggplant	pak choi	only twice, destroy by kids passing by the house

Location – GPS	Name of householder with home garden	Number of raised beds established	Date home garden started	Crops planted	Most successful crop	No. harvests of most successful crop
MAJURO – INDIVIDUAL HOME GARDEN DETAILS						
2021						
Family relocated themselves	Mary Jinna	1	8/10/21	pak choi, eggplant	none	crops did not last long due to family relocation – personal reasons
Family relocated themselves	Hellen Samuel	1	8/10/21	pak choi, eggplant	none	crops did not last long due to family relocation – personal reasons
Latitude: 7.12189186 Longitude: 171.36239237 Altitude: 4.9933433533 Accuracy: 5.816	Aileen Mojilong	1	8/11/21	pak choi, eggplants, tomatoes, pumpkin	pumpkin & pak choi	more than five times
Latitude: 7.0749333 Longitude: 171.3250838 Altitude: 19.6 Accuracy : 7.75	Marissa Note	2	8/11/21	tomatoes, eggplant, raddish, sweet potatoes, pak choi, cucumber	cucumber, eggplants, sweet potatoes	more than five times
Latitude: 7.1216458 Longtitude: 171.3594972 Altitude: 0.0 Accuracy: 2237.0	Marc Josiah Cristobal	1	8/11/21	pak choi, eggplant, cucumber, raddish	pak choi, eggplant	more than five times
Latitude: 7.1216458 Longtitude: 171.3594972 Altitude: 0.0 Accuracy: 2237.0	Dayne James Jacklick	1	8/11/21	pak choi, eggplant, cucumber, raddish	pak choi, eggplant	more than five times
Latitude: 7.1216458 Longtitude: 171.3594972 Altitude: 0.0 Accuracy: 2237.0	Salote Lua Usumaki	1	8/12/21	pak choi, eggplant, cucumber, raddish	pak choi, cucumber	more than five times
Latitude: 7.1216458 Longtitude: 171.3594972 Altitude: 0.0 Accuracy: 2237.0	Leane Temo	1	8/12/21	pak choi, eggplant, cucumber, raddish	pak choi, cucumber	more than five times
Latitude: 7.1216458 Longtitude: 171.3594972 Altitude: 0.0 Accuracy: 2237.0	Samuel J Barton	1	8/12/21	pak choi, eggplant, cucumber, raddish	pak choi, cucumber	more than five times
Latitude: 7.1216458 Longtitude: 171.3594972 Altitude: 0.0 Accuracy: 2237.0	Asena Ketedromo	1	8/13/21	pak choi, eggplant, cucumber, raddish	pak choi, cucumber	more than five times

Location – GPS	Name of householder with home garden	Number of raised beds established	Date home garden started	Crops planted	Most successful crop	No. harvests of most successful crop
MAJURO – INDIVIDUAL HOME GARDEN DETAILS						
2021						
Latitude: 7.11444466 Longitude: 171.36702178 Altitude: 2.899 Accuracy: 41.004	Embi Embi	1	8/13/21	bino cabbages, okra, cucumber, eggplant, pumpkin	cucumber	more than five times
	Jeffrey Lorennij	1	8/16/21			
Latitude: 7.12253646 Longitude: 171.36232668 Altitude: 3.0113728046 Accuracy: 43.560	Marcilla Ione	1	8/16/21	bino cabbages, pak choi, pumpkin	pak choi	more than five times
Latitude: 7.0849702 Longitude: 171.3746866 Altitude: 35.100000228 Accuracy: 3.65	Armando	1	8/16/21	bino cabbages, eggplant, cucumber, lettuce, raddish, pak choi	cucumber, pak choi	more than five times
Latitude: 7.1059517 Longtitude:171.376 Altitude: -1.7 Accuracy: 5.533	Stacy Zedkeia	1	8/17/21	pak choi, eggplant, cucumber	pak choi & eggplant	more than five times
Latitude: 7.12179854 Longitude: 171.36399354 Altitude: 2.1877337890 Accuracy: 5.816	Jill Bujen	1	8/17/21	pak choi, eggplant, cucumber, pumpkin	pumpkin	more than five times
2022						
	Anelia Navarro	1	7/7/22	cucumber, pak choi, eggplant		newly established
Latitude: 7.06166267 Longitude: 171.2045807 Altitude: 67.6 Accuracy: 4.66	Zenaida Alvarez	1	7/8/22	cucumber,pak choi, eggplant		newly established
Latitude: 7.1544367 Longitude: 171.0325217 Altitude: 53.5 Accuracy: 4.9	Angelina Mathusela	1	7/7/22	cucumber, pak choi, eggplant		newly established
Latitude: 7.1541566 Longitude: 171.0324618 Altitude: 61.2 Accuracy: 5.0	Jilla Marshall	1	7/12/22	cucumber, pak choi, eggplant		newly established
	Atrilla Hanerg	1		cucumber, pak choi, eggplant		newly established
	Morina Eknilang	1		cucumber, pak choi, eggplant		newly established
	Ketal Enoch	1	7/7/22	cucumber, pak choi, eggplant		newly established

Location – GPS	Name of householder with home garden	Number of raised beds established	Date home garden started	Crops planted	Most successful crop	No. harvests of most successful crop
MAJURO – INDIVIDUAL HOME GARDEN DETAILS						
2022						
Latitude: 7.0726394 Longitude: 171.3135704 Altitude:-21.5000000004 Accuracy: 4.82	Flora Jekkar	1	7/8/22	cucumber, pak choi, eggplant		newly established
	Ruthy Lang	1		cucumber, pak choi, eggplant		newly established
	Flomina Jacklick	1		cucumber, pak choi, eggplant		newly established
	Manijen Antibas	1		cucumber, pak choi, eggplant		newly established
	Karbi Airam	1		cucumber, pak choi, eggplant		newly established
	Jokma Nashon	1	7/7/22	cucumber, pak choi, eggplant		newly established
	Namar Nashon	1	7/7/22	cucumber, pak choi, eggplant		newly established
	Lola Lalimo	1		cucumber, pak choi, eggplant		newly established
	Hertina Loran	1		cucumber, pak choi, eggplant		newly established
	Neiwelynn Samuel	1		cucumber, pak choi, eggplant		newly established
	Searose Abon	1		cucumber, pak choi, eggplant		newly established
	Ain Briand	1		cucumber, pak choi, eggplant		newly established
	Jacklynn Joseph	1		cucumber, pak choi, eggplant		newly established
	Biolynn Langrine	1		cucumber, pak choi, eggplant		newly established
Latitude: 7.1435062 Longitude: 171.0327262 Altitude: 47.6 Accuracy: 4.2	Tricy C. Kinjan	1	7/12/22	cucumber, pak choi, eggplant		newly established
latitude: 7.1080771 Longitude: 171.0804408 Altitude: 35.600002 Accuracy: 4.1	Myretha Lang	1	7/12/22	cucumber, pak choi, eggplant		newly established
	Anity Bosin	1	7/6/22	cucumber, pak choi, eggplant		newly established

Location – GPS	Name of householder with home garden	Number of raised beds established	Date home garden started	Crops planted	Most successful crop	No. harvests of most successful crop
MAJURO – INDIVIDUAL HOME GARDEN DETAILS						
2022						
	Glorinta Batlok	1		cucumber, pak choi, eggplant		newly established
	Garcia Jacklick	1	7/8/22	cucumber, pak choi, eggplant		newly established
Latitude: 7.1172861 Longitude: 171.0585568 Altitude: 62.90000000 Accuracy: 4.375	Meryanne Komta	1	7/12/22	cucumber, pak choi, eggplant		newly established
Latitude: 7.1172861 Longitude: 171.0585568 Altitude: 62.90000000 Accuracy: 4.375	Tony Komta	1	7/12/22	cucumber, pak choi, eggplant		newly established
Latitude: 7.0736398 Longitude: 171.3162338 Altitude: 35.100002288 Accuracy: 4.4	Albine Tokjen	1	7/12/22	cucumber, pak choi, eggplant		newly established
	Kamiko N Ring	1		cucumber, pak choi, eggplant		newly established
	Jinana Jeita	1				newly established
	Herty Lejer	1				newly established

Location – GPS	Name of householder with home garden	Number of raised beds established	Date home garden started	Crops planted	Most successful crop	No. harvests of most successful crop
JALUIT – INDIVIDUAL HOME GARDEN DETAILS						
2020						
	Jaluit Jaluit	unlisted – refer to progress report 2020	1	August	kangkong, cabbages, okra	more than five times
2021						
Latitude: 5.9199242 Longitude: 169.6434565 Altitude: 48.8 Accuracy: 5.233	Helkena Lani	1	7/19/20	pak choi, eggplants, okra	pak choi	only twice
Latitude: 5.9205226 Longitude: 169.6434444 Altitude: 48.7 Accuracy: 5.24	Mieoshi Anwot	1	7/19/21	pak choi, eggplants, okra	pak choi	only twice
Latitude: 5.9217421 Longitude: 169.6423734 Altitude: 37.3000003051 Accuracy: 11.95	Elmi Morris	1	7/19/21	pak choi, eggplants, okra	pak choi & eggplant	only twice
Latitude: 5.9214026 Longitude: 169.6420905 Altitude: 66.3 Accuracy: 8.9	Tone Hertin	1	7/20/21	pak choi, eggplants, okra	pak choi	more than five times
Latitude: 5.9223033 Longitude: 169.6418271 Altitude: 86.9 Accuracy: 7.933	Emily Baso	1	7/20/21	pak choi, eggplants, okra	pak choi & eggplant	more than five times
Latitude: 5.9214945 Longitude: 169.643751 Altitude: 49.9 Accuracy: 9.2	Jepenin Ransay	1	7/20/21	pak choi, eggplants, okra	pak choi & eggplant	more than five times
Latitude: 5.92041 Longitude: 169.6424567 Altitude: 36.6 Accuracy: 8.1	Bien Jabuwe	1	7/21/221	pak choi, eggplants, okra	pak choi & eggplant	more than five times
Latitude: 5.922615 Longitude: 169.6422456 Altitude: 86.9 Accuracy: 9.85	Russell Anton	1	7/21/21	pak choi, eggplants, okra	pak choi & eggplant	more than five times
Latitude: 5.9215522 Longitude: 169.6417507 Altitude: 24.0 Accuracy: 6.5	Tomas Bilimon	1	7/21/21	pak choi, eggplants, okra	pak choi & eggplant	more than five times
Latitude: 5.9210641 Longitude: 169.6422061 Altitude: 21.4 Accuracy: 5.55	Titon Mijjena	1	7/21/21	pak choi, eggplants, okra	pak choi	more than five times

Location – GPS	Name of householder with home garden	Number of raised beds established	Date home garden started	Crops planted	Most successful crop	No. harvests of most successful crop
JALUIT – INDIVIDUAL HOME GARDEN DETAILS						
2021						
Latitude: 5.922683 Longitude: 169.6404923 Altitude: 86.9 Accuracy: 8.325	Herison Enos	1	11/2/21	pak choi, eggplants, okra	pak choi	more than five times
Latitude: 5.9203535 Longitude: 169.6424803 Altitude: 39.658 Accuracy: 3.9	Jabuwe Jabuwe	1	11/2/21	pak choi, eggplants, okra	pak choi	more than five times
Latitude: 5.9231074 Longitude: 169.6419632 Altitude: 37.30000305 Accuracy: 6.475	Helmond Jashua	1	11/2/21	pak choi, eggplants, okra	pak choi & okra	more than five times
Latitude: 5.9224516 Longitude: 169.6426794 Altitude: 37.30000305175 Accuracy: 7.35	Nenij Jekkein	1	11/3/21	pak choi, eggplants, okra	pak choi & eggplant	more than five times
Latitude: 5.9219345 Longtitude: 169.6420115 Altitude: 70.4 Accuracy: 6.5	Alton Nemra	1	11/3/21	pak choi, eggplants, okra	pak choi & eggplant	more than five times
Latitude: 5.9211048 Longitude: 169.6419172 Altitude: -124.8999999 Accuracy: 12.3	Risa Amram	1	11/3/21	pak choi, eggplants, okra	pak choi & okra	only twice, pest disease destroy cabbages
Latitude: 5.9222517 Longitude: 169.6422059 Altitude: 86.9 Accuracy: 7.0	Wilson Jally	1	11/4/21	pak choi, eggplants, okra	pak choi	more than five times
Latitude: 5.9213402 Longitude: 169.6414558 Altitude: -3.1 Accuracy: 4.74	Newij Lomae	1	11/4/21	pak choi, eggplants, okra	pak choi	late in planting, so far twice
Latitude: 5.9210641 Longitude: 169.6422061 Altitude: 21.4 Accuracy: 5.55	Hertina Hertin	1	11/4/21	pak choi, eggplants, okra	pak choi	more than five times
Latitude: 5.92244642 Longitude: 169.6413822 Altitude: 86.9 Accuracy: 4.85	Kajia Takia	1	11/5/21	pak choi, eggplants, okra	pak choi &eggplant	more than five times
Latitude: 5.9214339 Longitude: 169.6428667 Altitude: 51.2 Accuracy: 7.74	Canary Benedict	1	11/5/21	pak choi, eggplants, okra	pak choi & eggplant	replanting and harvest twice

Location – GPS	Name of householder with home garden	Number of raised beds established	Date home garden started	Crops planted	Most successful crop	No. harvests of most successful crop
JALUIT – INDIVIDUAL HOME GARDEN DETAILS						
2021						
Latitude: 5.9225444 Longitude: 169.6412883 Altitude: 4.7 Accuracy 4.775	Ritani Mejdrikrik	1	11/6/21	pak choi, eggplants, okra	pak choi &eggplant	more than five times
Latitude: 5.922452 Latitude: 169.6408208 Altitude: 86.9 Accuracy: 4.84	Joy Jorkan	1	11/6/21	pak choi, eggplants, okra	pak choi & eggplant	more than five times
Latitude: 5.9208127 Longitude: 169.6435958 Altitude: 48.7 Accuracy: 4.92	Merian Milne	1	11/6/21	pak choi, eggplants, okra	pak choi & eggplant	more than five times
Latitude: 5.9211912 Longitude: 169.6432748 Altitude: 0.0 Accuracy: 116.1	Lee Jabuwe	1	11/8/21	pak choi, eggplants, okra	pak choi &eggplant	more than five times
Latitude: 5.9221477 Longitude: 169.6419055 Altitude: 63.148 Accuracy: 3.9	Betty Johnson	1	11/8/21	pak choi, eggplants, okra	pak choi & eggplant	more than five times
Latitude: 5.9227587 Longitude: 169.6419246 Altitude: 28.753 Accuracy: 3.9	Presley Mark	1	11/8/21	pak choi, eggplants, okra	pak choi & eggplant	more than five times
Latitude: 5.9229037 Longitude: 169.6416922 Altitude: 37.30000030517 Accuracy: 10.433	Kosmon Mark	1	11/8/21	pak choi, eggplants, okra	pak choi &eggplant	more than five times
2022						
Latitude: 5.9219483 Longitude: 169.6412053 Altitude: 24.8 Accuracy: 4.5	Gloria Bikajela	1	3/7/22	pak choi, cucumber	both	more than five times
latitude: 7.1001533 Longitude: 171.1015383 Altitude: 35.5 Accuracy: 4.8	Aswo Jeiruj	1	3/7/22	pak choi, cucumber	both	more than five times
Latitude: 5.9233144 Longitude: 169.6424659 Altitude: 31.266 Accuracy: 3.9	Don Phillip	1	3/7/22	pak choi, cucumber	both	more than five times
Altitude: 5.9196153 Longitude: 169.6437156 Altitude: -8.8 Accuracy: 5.1	Jabwij Phillip	1	3/8/22	pak choi, cucumber	both	more than five times

Location – GPS	Name of householder with home garden	Number of raised beds established	Date home garden started	Crops planted	Most successful crop	No. harvests of most successful crop
JALUIT – INDIVIDUAL HOME GARDEN DETAILS						
2022						
Latitude: 5.9207052 Longitude: 169.6433264 Altitude: 48.8 Accuracy: 8.0	Antari Jason	1	3/8/22	pak choi, cucumber	both	more than five times
Latitude: 5.9222907 Longitude: 169.6417554 Altitude: 38.447 Accuracy: 3.9	Erja Bungitak	1	3/9/22	pak choi, cucumber	both	more than five times
Latitude: 5.9235805 Longitude: 169.6418597 Altitude: 37.300000 Accuracy: 172.1	Bwonej Prine	1	3/9/22	pak choi, cucumber	both	more than five times
Latitude: 5.9221829 Longtitude: 169.6425698 Altitude: 49.5 Accuracy: 4.94	Georgeton	1	3/10/22	pak choi, cucumber	both	more than five times
Latitude: 5.92242 Longitude: 169.6406617 Altitude: -8.8 Accuracy: 7.4	Namo Anien	1	3/10/22	pak choi, cucumber	both	more than five times
Latitude: 5.9225575 Longitude: 169.6419196 Altitude: -1.0 Accuracy:9.4	Mojen Edwin	1	3/11/22	pak choi, cucumber	both	more than five times
Latitude: 5.9194117 Longitude: 169.6441717 Altitude: -8.900000002 Accuracy: 7.14	Risen Rilang	1	3/11/22	pak choi, cucumber	both	more than five times
Latitude: 5.9219272 Longitude: 169.641386 Altitude: 28.7 Accuracy: 6.525	Jaripen Joseph	1	3/14/22	pak choi, cucumber	both	more than five times
Latitude: 5.92225254 Longitude: 169.64280 Altitude 6.7 Accuracy 4.966	Winer Tartios	1	3/14/22	pak choi, cucumber	both	more than five times
Latitude: 5.9216711 Longitude: 169.64108987 Altitude: 28.7 Accuracy:9.04	Caster William	1	3/14/22	pak choi, cucumber	both	more than five times
latitude: 5.9215943 Longitude: 169.641234 Altitude: 69.4 Accuracy:5.4	Sylvestor Amram	2	3/15/22	pak choi, cucumber	both	more than five times

Location – GPS	Name of householder with home garden	Number of raised beds established	Date home garden started	Crops planted	Most successful crop	No. harvests of most successful crop
JALUIT – INDIVIDUAL HOME GARDEN DETAILS						
2022						
Latitude: 5.9216192 Longitude: 169.6411589 Altitude: 28.2 Accuracy: 6.9	Melhem Joseph	1	3/15/22	pak choi, cucumber	both	more than five times
Latitude: 5.9210641 Longitude: 169.6422061 Altitude: 21.4 Accuracy: 5.55	Titon Mijena	1	3/15/22	pak choi, cucumber	both	more than five times
Latitude: 5.9217207 Longitude: 169.641544 Altitude: 422.4 Accuracy: 8.0	Ronny Jeiruj	1	3/16/22	pak choi, cucumber	both	more than five times
Latitude: 5.9216083 Longitude: 169.641785 Altitude: 70.8 Accuracy: 15.5	Tomaj Bilimon	1	3/17/22	pak choi, cucumber	both	more than five times
Latitude: 7.1008983 Longitude: 171.0954974 Altitude: 41.8 Accuracy 3.68	Bru Bwijtak	1	3/18/22	pak choi, cucumber	both	more than five times

ANNEX 2 Agricultural training in Jaluit and Majuro atolls 2020–2022

Majuro training

Training events	Number of people trained		
	Females	Males	Total
Pest control	15	15	**30**
Soil mixture	15	15	**30**
Garden placement	15	15	**30**
Harvesting	15	15	**30**
Replanting	15	15	**30**
Home gardening and planting, soil refill	13	2	**15**
Pest control and harvesting	9	0	**9**
Home gardening, planting, soil refill, harvesting, pest control	6	5	**11**
Home gardening, planting, soil refill, harvesting	10	8	**18**
Home gardening, vegetables, soil refill, planting, harvesting	16	1	**17**
Home gardening, vegetables, soil refill, planting, harvesting	14	1	**15**

Jaluit training (2020–2023)

Training events	Number of people trained		
	Females	Males	Total
Home garden raised beds	5	5	**10**
Replanting	5	5	**10**
Tree pruning	5	5	**10**
Home gardening, planting, soil refill, harvesting, pest control	1	9	**10**
Home gardening, planting, soil refill, harvesting, pest control	10	10	**20**
Replanting, soil refill, harvesting	6	14	**20**
Replanting, soil refill, harvesting	6	14	**20**
Home gardening, planting, soil refill, harvesting	6	15	**21**
Replanting, harvesting, watering, soil refill	10	11	**21**
Replanting, harvesting, watering, soil refill	11	11	**22**

ANNEX 3 Health workers trained and screenings conducted

Number of health workers trained

Health worker	Atoll/Island	Year	Male	Female
Jolynn Langmoir	Majuro	2020	0	1
Clady Lauror	Majuro	2020	0	1
Mine Kaious	Jaluit – Jabor	2021	0	1
Hermy Jashua	Jaluit – Jabor	2021	0	1
Judy Balos	Majuro –Tieti	2021	0	1
Rosemetha Leban	Majuro – Tur	2021	0	1
Malo Bukna	Majuro – Ionmaaj	2021	0	1
Sill Busin	Majuro – Ionmaaj	2021	0	1
Tammy Hekinos	Majuro – Tieti	2021	0	1
Samuel Jamba	Majuro – Batkan	2021	1	0
Leerok Lebon	Majuro – Light house	2021	1	0
Bearlynn Hertin	Jaluit – Imiej	2022	0	1
Todd Nathan	Jaluit – Jabor	2022	1	0
Cassiter Amram	Jaluit – Imiej	2022	0	1
Meia Hanchor	Majuro – Berrack	2022	0	1
Betty Johnson	Jaluit – Jabor	2022	0	1
Yolanda Matuato	Jaluit – Jabor	2022	0	1
Pearlynn Hertin	Majuro – Na Aiboj	2023	0	1
Joan Abon	Jaluit – Imiej	2023	0	1
Jebjin Samuel	Jaluit – Imiej	2023	0	1
Julitha Bill	Majuro – Alwal	2023	0	1
		Totals	**3**	**18**

Number of screenings conducted

Year of screening	Atoll/Island	Male	Female
2020	Majuro	284	537
2020	Jaluit	79	108
2021	Majuro	289	580
2021	Jaluit	177	179
2022	Majuro	310	230
2022	Jaluit	62	172
2023	Majuro	29	88
2023	Jaluit	25	38
	Totals	**1,255**	**1,932**

ANNEX 4 Health screening and other equipment purchased

2020		2021		2022	
EQUIPMENT	QUANTITY	EQUIPMENT	QUANTITY	EQUIPMENT	QUANTITY
MAJURO					
Lenovo tablets	7	Test strips	1,500 strips	Alcohol pads	10 boxes
Tablet Covers	8	Glucometers	20 machines	Test strips	10 boxes
Test strips	20 boxes	Alcohol pads	4,000 pads	Lancets	10 boxes
Walking shoes	40 pairs	Lancets	2,000 devices	Glucometers	10 boxes
Volleyballs	2	Walking shoes	120 pairs	Tablets	2
Volleyball nets	1			Notepads	4
Walking club t-shirts	103			Pen/Pencil	10 packages
				A1c test kit	50 tests
JALUIT					
Lenovo tablets	1	Lenovo tablets	2 tablets	Alcohol pads	10 boxes
Glucometers	5	Alcohol pads	4,000 pads	Walking shoes	1 box
Test strips	108 boxes	Test strips	6,000 strips	Bluetooth speaker	1 speaker
Walking shoes	140 pairs	Lancets	2,000 devices	Test strips	10 boxes
Volleyballs	6	Basketballs	30 balls	Flash drive	2
Volleyball nets	6	Paint for bb court	2	Glucometers	10 boxes
		Paint brush for court	2	Lancets	10 boxes
				Tablet	2
				Cell phone	3
				Sim cards	3
				Cellcard minutes	10

ANNEX 5 Nutrition training activities

Year	Atoll	Training type	Date	Male attendeees	Female attendeees	Total number trained
2020	Jaluit	Cooking class	Feb	5	10	15
2021	Majuro	School lunch training	September	70	80	150
2021	Majuro	Jo-Jikum	June–July	5	3	8
2021	Majuro	Nutrition education for churches	February	60	90	150
2021	Jaluit	Home gardens cooking	November	5	20	25
2021	Jaluit	Cooking demo	November	2	10	12
2021	Jaluit	Food safety for schools	November	2	4	6
2021	Jaluit	Balanced diet education for community	November	7	0	7
2022	Majuro	Replanting/cooking vegetables	March	13	12	25
2022	Majuro	Cooking demo in community	March	7	13	20
2022	Majuro	Nutrition education: vegetables	April	12	13	25
2022	Majuro	Food safety for schools	August	1	8	9
2022	Jaluit	Nutrition education and cooking	March	10	7	17

ANNEX 6 Exercise groups and specific exercise activities

Regular exercise groups

Atoll	Exercise type	Location	Frequency	Male	Female
Majuro	Walking club	Tur Weto	Daily	0	30
Majuro	Walking club	Berrak	Daily	0	30
Majuro	Walking club	Ionmaaj	Daily	0	30
Majuro	Biggest loser	Wellness Centre	1 month	0	5
Majuro	Zumba Class	Wellness Centre	Weekly x 1 month	0	20
Jaluit	Men's walking club	Jabor	Biweekly	50	0
Jaluit	Volleyball and basketball games	Jabor	Biweekly	50	30
Jaluit	Walking club	Jabor	Weekly	0	50
Majuro	Volleyball and basketball games	Various locations on Majuro	Weekly	30	25
Majuro	Walking club	Woja	Daily	5	0
Majuro	Table tennis	Marshall Islands High School	1 month	4	0
Jaluit	Walking club	Jabor	Daily	0	100
Jaluit	Walking club	Imiej	Daily	0	30
Jaluit	Volleyball	Jabor	1 month	30	30
Jaluit	Volleyball	Jabor	1 month	30	30

Specific exercise and sports activities

Event name	Location	Date	Male	Female
Keep Majuro Clean	Majuro Atoll	7–12 June 2021	9	9
Keep Majuro Clean	Majuro atoll	2–13 August 2021	10	10
Veteran beach volleyball	Jaluit	2–19 November 2021	36	24
Biggest loser	Majuro	1–31 July 2021	52	15
High school volleyball tournament	Jaluit	14–31 March 2022	204	204
Jo-jikum	Majuro	July 2021	10	20
Tennis club for youth	Majuro	August 2022	20	0
Women's volleyball tournament	Majuro	December 2022	0	70
Basketball tournament	Majuro	July 2022	125	0
Basketball tournament	Majuro	November 2022	125	0

ANNEX 7 Radio shows

Topic of radio programme	Date	Feedback (formal/informal)	By	Radio station
Introduction to Wellness and SUPA project	May 2021	Formal – Healthy Lifestyle	SUPA Manager and Dr David Hackley, Outer Islands Health Center (OIHC), Marshall Islands	V7AB
Climate changes (affecting food security)	May 2021	Formal – Healthy Lifestyle	SUPA Manager and Dr David Hackley, Outer Islands Health Center (OIHC), Marshall Islands	V7AB
Public awareness – pilot, Keep Majuro Clean	June 2021	Five communities were aware, all participated	Kilobar Lakmis, SUPA Manager	V7AB
Climate change (positive and negative effects)	July 2021	Formal – Listeners from Marshall Islands and other countries shared their concern on ways to prevent any negative effect of climate change	Kilobar Lakmis and NDMO Directorate	Power 103.5
Public awareness – Keep Majuro Clean: Phase Two	August 2021	Formal. Flyers were provided, communities were engaged	Kilobar Lakmis, SUPA Manager	V7AB
Climate change (World Food Day)	October 2021	Both formal and informal activities: flyers, booth cooking demonstration, showcase of vegetables, distribution of seedlings	Wellness Team	Power 103.5
Climate change (World Diabetes Day)	November 2021	Both formal and informal: Walk-a-thon, presentation, flyers, live music, strong collaboration between NGOs and government sectors, and patient interviews	Wellness Team	Power 103.5
Introduction to Wellness and SUPA project	7 April 2022	Formal	SUPA project manager Kilobar Lakmis and radio operator Yastamon	Power 103.5 six9too production

Topic of radio programme	Date	Feedback (formal/informal)	By	Radio station
Home gardening classes/ registration	14 April 2022	Formal	SUPA project manager Kilobar Lakmis and radio operator Yastamon	Power 103.5 six9too production
Outreach hypertension program	20 April 2022	Formal	Hypertension Coordinator George George Jr and radio operator Yastaman	Power 103.5 six9too production
Heathy lifestyles and nutritional education	11 May 2022	Formal	SUPA project manager Kilobar Lakmis, dietician Ione deBrum and radio operator Yastamon	Power 103.5 six9too production
Pre-diabetes, CLP, and home gardening training updates	18 May 2022	Formal	Pre-diabetes coordinator Libon Jorkan, SUPA manager Kilobar Lakmis and radio operator Yastaman	Power 103.5 six9too production
Health promotion	May 2022	Formal	Hypertension coordinator George George Jr and radio operator Yastaman	Power 103.5 six9too production
Sports championship game	May 2022	Formal	Royal Leban, Wellness Physical Activity and radio operator Yastaman	Power 103.5 six9too production
Dietician health promotion	October 2022	Informal	Nutritionist Ione deBrum and Kilobar Lakmis	V7AB radio station
Health promotion/ demonstration	December 2022	Formal	Wellness Team	Power 103.5 six9too production

ANNEX 8 External evaluation of the LCCR project

Executive summary

1. Background

RMI consists of a total of around 1225 low-lying islands, with very few places higher than three metres above sea level. Just 29 atolls and five coral islands are inhabited, comprising about 180 square kilometres of land scattered over 4,600 square kilometres of the North Pacific Ocean, with an exclusive economic zone of around two million square kilometres.

People migrate from the outer atolls to the urban centres of Majuro and Ebeye in search of income and education opportunities, and for medical needs. In terms of income-generating activities in RMI, copra, coconut oil and fish (particularly yellowfin tuna) are the main sources of revenue. Nearly half the salaried workforce is employed in the public sector. Unemployment rates are high, especially among women. This narrow range of employment and income streams makes RMI economically vulnerable to changes in the country's physical environment, including those related to climate change. A number of RMI atolls are particularly vulnerable to the effects of climate change.

Due to climate change, RMI is also facing significant health risks, including waterborne diseases, food safety issues and vector-borne diseases. The 2022 National Climate Change and Health Policy and Revised Action Plan (NCCHP v2) aims to: (i) improve health protection against climate-related risks; (ii) enhance community resilience, health and wellbeing; and (iii) integrate approaches to health and climate change adaptation (Government of the Republic of Marshall Islands).

2. Project investment

The Lifestyle Changes and Climate Resilience (LCCR) project in RMI commenced in January 2020 with a planned completion in December 2022. The project is supported by the European Global Climate Change Alliance Plus Scaling up Pacific Adaptation (GCCA+ SUPA) project, addressing Output 3: to scale up resilient development measures in specific sectors.

The LCCR project is a multi-sector project, focused on building awareness about links between healthy eating and reducing non-communicable diseases. It was expected to contribute to enhancing food security after project completion, aligning with NCCHP v2 goals, and it was designed to enhance community resilience in two atolls – Jaluit and Majuro – through four key result areas, listed below.

1. Enhance community and household-based atoll agriculture.
2. Foster lifestyle changes linking nutrition and wellness.
3. Mainstream climate and disaster risk into the health sector.
4. Improved coordination and communications.

The LCCR project was delivered under contract with the Ministry of Health and Human Services (MoHSS) with key result areas 1, 2 and 4 subcontracted to CanvasBack Wellness Center. Key result area 3 was delivered through the Australian National University and MoHHS. Other LCCR stakeholders include the Ministry of Natural Resources and Commerce, the Marshall Islands Organic Farmers' Association, the Taiwan Technical Mission, the Marshall Islands Epidemiology and Prevention Initiatives, and representatives from Majuro and Jaluit atolls. The project design adopted a participatory and community-led approach, with particular emphasis on applying a people-centered approach to enhance sustainable community resilience.

3. Evaluation purpose, methodology

This summative evaluation aimed to assess the delivery and impact of LCCR activities in Majuro and Jaluit, conducted by CWC under the GCCA+ SUPA Project. The findings and recommendations here are intended to provide independent advice to the EU and SPC, which will be used to inform strategic decisions for future programming. The evaluation was designed to test project effectiveness, efficiency, inclusivity and sustainability, as well as to provide recommendations.

4. Constraints and limitations

There has been no use of the LCCR project logical framework in reporting, and limited project reporting in general. CWC has reported key result areas by atoll and SPC reported to the EU at a GCCA+SUPA level. Financial reporting was consolidated across countries in GCCA+ SUPA reporting. Many of the findings here are informed through CWC self-reported results, most of which were tested through interview and observation, but not all.

5. Findings and conclusions

While there have been some successes in promoting healthy behaviours, increasing physical activity, increasing the number of local gardens and providing agriculture-based training and equipment to communities, more engagement and commitment from stakeholders are required. It is important to consider the reasons for the short lifespan of behaviour change reported and identify strategies to overcome these challenges and promote long-term sustainable change.

LCCR implementation was for only three years, which has limited its ability to effect meaningful changes in population health and community attitudes, which are slow to shift. In the short-term, however, LCCR has been able to demonstrate short-term outputs: increasing the use of home and community gardening and building community awareness on positive nutritional and fitness choices.

The needs assessments conducted in 2020 were intended to identify where project support was most needed. On Majuro, they identified a lack of gardening space, knowledge about pest control, and a high reliance on imported food; on Jaluit, they identified a lack of home gardening and pruning knowledge, and little understanding about cooking with vegetables. The project provided equipment and consumable material, including material to construct garden beds, chainsaws, wicking systems, garden nets, raised beds, diesel containers, manure and soil. Some equipment, however, fell apart after a year and was not replaced or able to be maintained to extend its use.

The 2019 LCCR design proposed several initiatives aimed at promoting healthy behaviours and increasing physical activity among community members in RMI. These initiatives included new walking and exercise clubs, men's wellness activities, high school sports competitions, health checks, and cooking classes.

According to interviews, there have been positive changes in attitude towards including vegetables in meals due to increased access to and affordability of fresh produce from home and community gardens. Jaluit High School has also incorporated vegetables sourced from the school garden into the meals prepared for students, with support from the principal and vice principals.

In terms of physical activity, there have been new walking clubs, community sports competitions and high school sports competitions, all supported by new equipment. There have, however, been some challenges in sustaining fitness activities due to funding constraints, which have affected membership incentives and provision of supplies. Recently, in both Jaluit and Majuro, the number of people regularly walking appears to have reduced, and in Jaluit the gym equipment is used only by men in an unsafe building until a better location can be found.

The LCCR project has made efforts to be inclusive and address the needs of diverse groups. The project design includes specific participatory and non-discriminatory components, and there are indicators regarding health

and lifestyle changes targeted at vulnerable groups who require special attention. LCCR has engaged with women through activities such as home gardens, and with youth through specific events and seminars, working with schools and holding inclusive consultations. The project has also worked with people living with disabilities and the elderly in partnership with the Marshall Islands Disabled Persons Organization. Supporting data in terms of the proportion of marginalised groups reached were not available, however, as disaggregated data are not routinely collected or reported except in terms of patient presentations. Although proposing to engage with Women United Together Marshall Islands in the project design, this was not achieved [Interviews].

There have been some unexpected results reported as well. For example, some stakeholders have expressed concern that the focus on climate change and health may be taking attention and resources away from other important health issues, such as non-communicable diseases (NCDs) more generally. These people need to be aware that the CWC organisation was initially set up to address NCDs; so focus on these is implicit in their work. Additionally, the COVID-19 pandemic disrupted project implementation, and challenges, such as weather conditions, power outages, and poor internet access, have also been reported.

The appointment of a coordinator to organise climate change activities in the Ministry of Health and Human Services is a positive step towards promoting ownership and coordination of ongoing work in this area. It is, however, crucial to ensure that stakeholders are aware of the different roles and responsibilities within the project, and the status of results and finances over time. A thorough monitoring and evaluation system can help identify areas needing improvement, assess the project's effectiveness, and inform future planning and implementation.

It is also crucial to establish sustainable funding options for this work to ensure its continuity. The fact that the project goals under GCCA+ SUPA remain relevant and that there is a gap that cannot be addressed through existing government resources indicate that the project work remains essential and needed.

Stakeholders have generally valued the work, and strong community engagement has developed through engagement of local councils, mayors and the MoHHS but the reliance on funding and CWC has meant that, in 2023, LCCR activities are piecemeal or non-existent. The lack of an exit strategy has meant that no hand-over was planned for or implemented formally. Despite this informal completion and hand-over, the LCCR project successes have created leverage for future expansion and funding proposals for RMI and for CWC. These are listed below.

- A proposal to expand the LCCR to other atolls has been prepared and submitted to the Pacific-America Fund, supported by USAID, following requests from other mayors.
- The outer islands of Wotje, Ebon and Likiep are now targeted by CWC to start similar work there. Conversations with the local governments have taken place and teams will soon be sent out to do data collection and speak with the communities to start the process.
- On Majuro, many people are making direct requests to CWC for a continuation of the home gardening classes and help for people to build their own gardens.
- Majuro Hospital is sending out health workers door-to-door in conjunction with the NCD clinic and upgrading their referral processes. CWC is upgrading its database system to better identify focus areas and is hiring two more health workers for Majuro.
- The prediabetes, diabetes and hypertension prevention classes have funds to go to smaller islands within Jaluit atoll and expand to Wotje and Ebon atolls. CWC will conduct Zoom classes now until the master coach can train new lifestyle coaches on each atoll.

Challenges such as border closures and logistics delays during the COVID-90 pandemic slowed access to technical assistance and products required to support the programming. There are challenges with maintaining momentum and ensuring that expenditure on elements, such as equipment, offer value for money. Additionally, there are multiple health and environmental projects being implemented in the country, which can make it challenging for the government to manage them all effectively.

6. Recommendations

The report provides a series of recommendations, briefly listed below.

- Focus on effectiveness by aligning with the 2022 National Climate Change and Health Policy and Revised Action Plan, building on the most cost-effective activities in previous projects in RMI and regionally.
- Focus on strong sustainability planning that includes long-term funding to facilitate hand-over to local partners.
- Engage broadly and form meaningful partnerships. Regularly share learning regionally and with RMI communities.
- Focus on hand-over of key activities in the final year of programs/projects of limited duration, recognising that behavioural change may take a generation.
- Strengthen country project coordination and national project governance skills.
- Ensure that gender and social inclusion continue to be the focus of a people-centred approach.
- Ensure continuation of community participation in design and implementation.

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