

Completion Report For:

Aitutaki

Cyclone Recovery and Reconstruction

Project 2010

**'BUILD BACK BETTER'**



Commissioned by the  
Development Coordination Division, Ministry of Finance and Economic Management,  
Government of the Cook Islands

13 September 2013

## REPORT VERSION

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**Cover Photo:** Refurbished Category 3 Home, Aitutaki. Courtesy Joseph Akaruru Aitutaki On Site Project Team Manager

### **Disclaimer and Statement regarding Conflict of Interest**

The findings and recommendations expressed in the Report are those of the reviewers and do not necessarily reflect the views of the Cook Islands Government.

Akairo Consulting Ltd has previously been engaged by the Cook Islands Ministry of Finance and Economic Management to carry out development management services. Ms Newport a Director of Akairo Consulting was previously engaged by the New Zealand High Commission, Rarotonga until April 2010 and was involved in the initial Emergency Response Phase providing in-country coordination as part of the New Zealand Government support. Ms Hilyard, an associate of Akairo Consulting, was previously engaged by the New Zealand High Commission, Rarotonga as a Development Programme Coordinator from September 2011 to November 2012. Ms Hilyard also coordinated the UNDP project the National Environment Service (POPS, 2010-2011).

# Summary

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## Activity information

<b>Activity Title</b>	Aitutaki Recovery and Reconstruction Project
<b>Goal</b>	To provide safe and durable housing that can withstand any future cyclone event and to develop resiliency practices within the community.
<b>Intended outcomes</b>	The outcome of this project was to fulfil the two key objectives of the Cook Islands Government's Aitutaki Recovery and Reconstruction Plan 2010-2011. Objectives would impact on social, economic, environmental and institutional developments These objectives were to: <ul style="list-style-type: none"><li>• restore the Aitutaki Community to a state of normality,</li><li>• build back better by minimising the impact of future disasters.</li></ul>

## Contract or grant information

<b>Start and end dates</b>	18 June 2010 – 30 Nov 2011
<b>Total cost</b>	\$5,512,830 of a package of \$6,400,000
<b>Reporting period</b>	Sept 2010 – March 2012

## Completion report preparation

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<b>Date report submitted:</b>	Wednesday 13 September 2013

## Executive Summary.

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This report was prepared on behalf of DCD and drew on a number of sub-projects reports, records, interviews and discussions with project implementers and managers from key agencies.

Cyclone Pat hit Aitutaki on February 10, 2010 and left a trail of devastation to 78% of the houses, critical services, food crops and personal property. Emergency personnel and equipment were immediately mobilised to attend to the safety and security of the people of small island.

A multi-agency Aitutaki Recovery Committee was established by the Cook Islands Government to coordinate the recovery phase and to implement the Aitutaki Recovery and Reconstruction Plan. This committee focused on restoring the community of Aitutaki to a state of normality as soon as possible. The Cook Islands Government assigned \$2.7m from its outer islands budget to re-establish essential services and infrastructure support, and to enable businesses to resume immediate operations so that the locals could assist with the recovery efforts.

The **relevance** of the project was demonstrated through its alignment to Cook Islands priorities and NZ policy mandates. New Zealand tailored its support for the Recovery Plan with a total package of \$6.4 million. This focused on 10 key activities – Emergency repairs to the hospital and schools (\$297,384); Schools (\$299,914); Evacuation shelters (\$74,219); Collecting debris (\$40,497); Category Three and Four housing (\$3,030,000); Schools resourcing (\$100,000); A new Warning System (\$65,000); Sanitation (\$480,000); Disaster Risk Management (\$20,000); and Solid Waste disposal (\$365,000).

The **effectiveness** of the project is evidenced by the island's return to a state of normality and the objective to build back better provided more strongly built domestic buildings and the return of the environment back to a state of economic potential for tourism. The only outstanding activity from the project is the removal of two containers of asbestos from the island. The appointment of a Clerk of Works by MFAT to work alongside the PMT was a successful strategy that resulted in an "environment that provides the highest level of resilience the island has ever had" (Scantlebury, 2011). The effectiveness of the management of the project was often marred by poor communication from MOIP, the Rarotonga-based implementing agency. Implementing a project communication strategy and delegating decision making authority to the local level on island should be considered for future similar projects.

Although the overall **efficiency** of the project was adequate across all ten (10) activities of the project, delays to the construction programme were unnecessarily caused by poor preparation of tenders and quantity surveying by MOIP. These were compounded by sea transport issues and hefty air freight costs. Donations were received by the Island Council in the form of materials (for example, 20 tonnes of sheeting was donated by James Hardie Ltd) and monetary donations from families and friends which resulted in their purchase of nearly \$60,000 worth of tools for use (and later purchase) by local workers. However, a further \$0.9m of NZAP was still required to complete the works on the Category Three and Four houses.

Overall, the project has had a positive **impact**, by minimising the outward migration of residents, stimulating the local economy and improving the private and public physical infrastructure. The visual impact of the island has been enhanced contributing to economic returns through an increase in tourism activities on the island. There is little information available on the benefits of the project for marginalised groups as well as women and children.

The **sustainability** of the project was encouraged by the use of local suppliers and local labour. Local workers earned status through their involvement in rebuilding their communities. Their increased ownership strengthened social and community connections. At the end of the project, workers obtained a Certificate of Employment and were able to buy their tools to enhance their future employability within the building industry. The project team reported that this activity was in itself a healing therapy both for individuals as well as for communities. Householders were noticeably showing pride in the care of their improved properties. Institutional processes are required to ensure adherence to building codes and waste management practices are better organised. The income generated from the sale of the waste material has been returned to the Island Council to fund future waste removal activities.

**Risks** to the project were managed through a number of measures. Environmental risks were managed by employing a private contractor to remove a huge amount of solid and hazardous waste across the island. Institutional risks relating to communication issues and the capacity of the lead agency on Rarotonga, were to some extent mitigated by the closer relationship built between the Project Management Team, the Island Council and Island Administration personnel with their direct communication with the Aitutaki Recovery Committee. The potential of socio-economic risk to the island was mitigated by urgent attention given to re-establish businesses and the immediate clean up of the environment. The initially inexperienced local workforce was given a 12 month on-the-job training course in all aspects of the building trade.

Overall, **financial management** processes could have been better coordinated and systems developed between the implementing (on Aitutaki and Rarotonga) and aid coordinating agencies to ensure timely and accurate processing and reporting of expenditure. The total cost of the Repair and Recovery Project was \$5,439,940 of the \$6,400,000 allocated, realising an underspend of \$597,074.

Overall and in general terms, we conclude that the project was able to deliver its outputs and activities according to agreed timeframes and within approved budget allocations.

It is recommended that consideration be given to conducting a post project evaluation to ascertain the impact and sustainability of the project particularly in relation to its impacts for marginalised groups including women and children.

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## Background and context

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Tropical Cyclone Pat passed through the Southern Cooks in the early hours of 10 February 2010. At its peak it was a Category 3 cyclone with gusts of over 100 knots. As per the Cook Islands Government Disaster Management Act 2007, a "State of Disaster" was declared by the Prime Minister, and emergency services were immediately put into action. There were no fatalities, but the entire population (approximately 2000) of Aitutaki was either directly or indirectly affected by damage occurring in all 8 villages. The most serious impact was on housing, but there was also serious damage to public infrastructure and food crops<sup>1</sup>. New Zealand (NZ) responded immediately by sending emergency supplies procured in conjunction with the NZ Red Cross. A Royal NZ Air Force Hercules transported these to the Cook Islands along with NZ Defence Force personnel (including electricians, engineers and a plumber) to support local emergency phase efforts.

Offers of assistance to the Cook Islands was also provided the Prime Minister of Tahiti, Gaston Tong Sang, the Asia Development Bank (ADB) Asia Pacific Disaster Recovery Fund and United Nations Agencies including OCHA, UNDAC, UNICEF and UNDP. The Cook Islands Red Cross, NZ Cook Islands community, the Mormon Church were also mobilised to provide assistance.

Following the emergency phase,<sup>1</sup> a Cabinet meeting in Aitutaki and negotiations with the Aitutaki Island Administration a multi-stakeholder multi-agency Aitutaki Recovery Committee (ARC) - a multi-agency group made up mainly of government organisations, Cook Islands Red Cross (CIRC) and the New Zealand High Commission (NZHC) - was formed to coordinate the recovery phase. The Cyclone Pat Recovery and Reconstruction Plan 2010-2011 was designed not only to restore the community of Aitutaki to a state of normality but also to build resilience by minimising the impacts of future disasters caused by extreme weather events. In order to get the economy back on its feet, a Local Economic Recovery Strategy was developed to restore the operations of small businesses, local farmers and land and marine-based tourism outlets. The aim was to reduce the risk of families leaving the island by restoring normality in their lives and returning their regular sources of livelihood as soon as possible.

After a comprehensive assessment of the situation carried out by MOIP engineers, the New Zealand Ministry of Foreign Affairs and Trade (MFAT) through the New Zealand Aid Programme (NZAP) provided a \$5,5m package (later amended to \$6,4m) for the Cook Islands Government to undertake its Recovery and Reconstruction Plan. MOIP was designated the lead government agency to coordinate all project activities and had implementation responsibility for the reconstruction and sanitation work on residential buildings, and later for waste disposal; Cook Islands Investment Corporation (CIIC) for government buildings – the hospital and schools; Ministry of Education for the replacement of destroyed school resources; the Cook Islands Meteorological Service (CIMS) for warning systems; Emergency Management Cook Islands (EMCI) for disaster risk management awareness and institutional training; and the Aitutaki Island Administration for cleaning up the environment.

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<sup>1</sup> Refer to NZ Grant funding Arrangement, Letter of Variation No.1

# Assessment against DAC evaluation criteria

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## Relevance

New Zealand support through the project was relevant and consistent with Cook Islands and New Zealand policy provisions. An initial assessment identified the need for funds to be injected into the emergency response phase to address emergency repairs to the hospital and school buildings that had been destroyed, to secure the areas from further damage and to enable their operations and services to return to normal as soon as possible. In the meantime further assessments were being done on other areas of the island. Housing became the next priority issue as 78% of housing on the island had been affected.

The Aitutaki Recovery and Reconstruction Plan was subsequently developed and identified two key areas – getting the island back to normality as quickly as possible and to build back better to ensure sustainable resilience in the event of a similar future disaster.

The Cook Islands Government (CIGov) took charge of repairs to houses with minor damage (Categories 1 and 2) to enable the majority of families to return to normality as quickly as possible. Immediate reconnection of electricity and water services was also prioritised and crews of locals cleared trees and iron roofing debris from accessways. A Cook Islands funded local economic support programme (BTIB) also helped small businesses and tourist operations to quickly get back into action not only to continue to restore the livelihoods of families on the island, but also to help to reduce the immediate outflow of locals and visitors from the island.

In aligning to CIGov request for assistance and the ARRP, NZ funding was mobilised to assist with the emergency phase as well as recovery and reconstruction efforts targeted repair and reconstruction work. Urgent priority was given to the hospital, schools and village evacuation centres to enable their immediate use if required. Specific attention was given to homes that were identified as Category 3 (significantly affected homes) and Category 4 (those that were completely destroyed). A design for the Category 4 replacement houses that would withstand similar cyclones in the future was approved after 3 months by the ARC<sup>2</sup>. This process delayed the response due to competing designs proposed by People's Republic of China, Habitat for Humanity and MOIP. This was overcome when NZ employed a specialist architect from Australia to develop MOIP design. Septic tanks were later included into the Category 4 reconstruction, to encourage more environmentally friendly sanitation on the island.

The CIGov assigned \$2.7m from its outer islands fund towards the repair of all Category 1 and 2 damages (immediate); project management team costs; and the repair of basic infrastructure services. The assessed cost of these activities was \$3,264,822, so that not all of the Category 1 & 2 houses were completed. Affected owners were offered partial funding assistance up to a certain level depending on the category of damage<sup>3</sup>.

NZAP funding addressed the physical needs and some of the social needs of the people of Aitutaki, returning them to their homes and cleaning up the island so as not to interrupt their mainly tourism activities too much. However, a budget support modality would have allowed the government to take more ownership of the overall programme and better coordination with other funds (community, government, development partners). This would have allowed more flexible support for other areas which were also greatly affected by the cyclone – more specifically in the area of agriculture and livestock production to supply tourism as well as

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<sup>2</sup>Scantlebury (2011, p4). Designs submitted by Peoples Republic of China, Habitat for Humanity and Ministry of Infrastructure and Planning were considered with deliberations contributing to time delays.  
<sup>3</sup>Project completion report 2010. Aitutaki Residential Reconstruction Project Cat 1 and 2 (p23)

general food outlets. It would also have assisted in developing a more sustainable livelihood for unemployed men and women who did not get jobs on the building projects.

Overall, NZAP funds were relevant and targeted areas that would ensure the current and future safety and security of the people of the Cook Islands. The ten sub-projects, each managed by key government agencies, collectively contributed to meeting the objectives of the Cook Islands Recovery and Reconstruction Plan – reinstating normality within communities across the island of Aitutaki and 'building back better'.

## **Effectiveness**

Overall the project was effective in building back better and restoring island functioning and livelihoods through its ten sub-projects. Key stakeholder relationships were managed by the Aitutaki Recovery Committee (ARC) - a multi-agency group made up mainly of government organisations, Cook Islands Red Cross (CIRC) and the New Zealand High Commission (NZHC). They met weekly during the project to monitor progress and to contribute to the decision making relating to activities on the island. Their agenda at each meeting was the discussion of the Project Manager's weekly progress report.

Continued adherence to good management principles should also be expected for the collection and removal of solid waste. A private contractor brought in specialist machinery to remove unsightly iron debris and other potentially hazardous waste from the island. At the same time, workers were trained in how to deal more effectively with the collection and storage waste as it accumulates on the island. Waste management arrangements at a national level will hopefully be implemented to remove this waste from the outer islands on a regular basis. The only outstanding component of this project is the removal from the island of two containers of asbestos. For the past two years, Recycling Cook Islands has been working with MOIP and NES on transboundary documentation requirements. Cabinet has recently agreed to underwrite the insurance cover which was required before the NZ Environment Protection Authority (NZEPA) would allow the transport of the material for disposal in NZ.

Offering on the job training and a qualification as part of the reconstruction work was an effective way to upskill and benefit several previously unemployed workers, mainly men from Aitutaki, Rarotonga and other outer islands. The workers were provided with a Certificate of Employment outlining their individual work period and job description, and they were also able to purchase the tools which they learned to handle like experts, to help their future employability. Most of the tools had been originally purchased by funds donated by families from overseas towards the recovery process. To some extent this did not contribute to sustained employment on Aitutaki. The lack of an exit plan led to workers subsequently relocating to Rarotonga, New Zealand and Australia to seek work. Economic activity created by the reconstruction project was significant in that nearly \$50,000 per week was injected into the local economy from workers' wages, rentals, fuel, locally supplied building materials, meals and reimbursements to homeowners<sup>4</sup>.

The lack of annual population data from the MFEM Statistics Office does not allow an examination of the extent to which the goal of retaining the population on Aitutaki has been met. The 2006 population was just under 2000, and by 2011, it had dropped to 1771. However, school statistics<sup>5</sup> in the table below (recorded annually in March) indicate a slight roll drop a month after the cyclone, but subsequent roll numbers show a positive trend in primary schools to indicate that families with children are returning to the island. The improved condition of

<sup>4</sup>Project completion report 2010. *Aitutaki Residential Reconstruction Project Cat 1 and 2* (p19)

<sup>5</sup>[http://www.education.gov.ck/index.php?option=com\\_content&view=article&id=822&Itemid=43](http://www.education.gov.ck/index.php?option=com_content&view=article&id=822&Itemid=43)

housing and schools could be a contributing factor to this trend. The table also shows strong growth in numbers by the worst hit school during the disaster. Teakaroa lost many of its classrooms and all of its resources. Focusing efforts in repairing all schools and restocking resources proved to be an effective way to meet the outcomes of the project.

**TABLE 1: Aitutaki School Roll Numbers before and after Cyclone Pat**

School	2009	2010	2011	2012
Araura Primary	137	139	141	132
Araura College	217	200	192	194
Vaitau Primary	82	73	80	81
Teakaroa SDA Primary	79	77	96	104
<b>TOTAL ROLL NUMBERS</b>	<b>515</b>	<b>489</b>	<b>509</b>	<b>511</b>

## Efficiency

The efficiency of the project is demonstrated through a number of measures. The ARC and CIGov already had a policy of maximising the economic benefits of the reconstruction effort. Local businesses were encouraged to bid for the supply of materials. Their quotes were assessed alongside those from NZ and Australia. Local workers were employed for reconstruction, and there was a significant element of upskilling and training provided on the job. Using local businesses, suppliers and the Aitutaki workforce were aimed to help achieve the goals of the Recovery Plan.

The goodwill of suppliers of goods and services assisted construction activities<sup>6</sup>. James Hardie Ltd donated approximately 20 tonnes of 6mm and 9mm sheeting; Hitachi, Paslode and Powertool Centre gave generous discounts which brought in about \$60,000<sup>7</sup> worth of equipment which was purchased by the Island Council and subsequently by individual workers at the end of the contract; and AirNZ and Air Raro assisted with discounted or free freight getting the urgent goods to the island.

The CIGov has stringent tender requirements for procurement of public-funded goods which involves oversight of the process by the Tender committee and public notification of the opportunity to bid. For this project however, the ARC agreed to streamline the process somewhat so that the tender process should apply to 80% of all materials funded by MFAT. This enabled the immediate purchase of the bulk of the material required to address the repair to emergency services. This new procurement strategy was seen to provide enduring economic and social benefits<sup>8</sup>.

There were several instances where issues related to timeliness and procurement created delays to the arrival of equipment for construction work. A key issue was related to the quality of the tender specifications which resulted in inaccurate calculations of materials. E.g. Timber post brackets were procured by MOIP and shipped to the Project Management team but were not part of the design specifications and were not used. Managed out of Rarotonga, MOIP had

<sup>6</sup>Scantlebury (2011, p5)

<sup>7</sup>Scantlebury (2011, p12)

<sup>8</sup>Scantlebury (2011, p4)

the responsibility to tender supply packages for materials on a cost insurance freight basis. They had the responsibility to quantity survey the materials required and to manage the contracts for supply.

The Aitutaki based Project Management team were rarely spoken to with regards to material selection or supply expectations<sup>9</sup>. One example was when a contract was awarded for windows to a supplier in Rarotonga whose bid was cheaper than that of an Aitutaki supplier, but which subsequently cost significantly more as the quote had not included additional items, such as screws, bolts, etc. The employment generated by this job for the effected population and local business in Aitutaki should have been taken into account. Sea transport is not reliable at the best of times, so that when inaccurate calculations were made and material was having to be transported from NZ to Rarotonga and then to Aitutaki, these created further delays. As a consequence in meeting timelines, they also created additional costs when air freight was used to get urgent materials to the island.

In managing the production delays of septic tanks by a local manufacturer, MOIP decided, without consultation with the PMT to install an alternative septic system in nine of the new Category 4 houses. Unfortunately they neglected to tell the householders that the tanks required an electrical connection. When householders found out, some asked for its removal because they did not want a system that had any additional running costs, especially as the connection became the responsibility of the householder and several of them were unemployed. One year down the track, three of the households have still not connected the system to a power source. Left unattended this will impact on the effectiveness of the system and could pose health concerns for those households.

While financial records show savings overall, financial monitoring during the MOIP-related activities was not satisfactory especially after the MOIP financial officer who was supposed to be stationed in Aitutaki moved to another job. His position was not filled, so it became another project team members responsibility as well as his own placing added burden to his workload. This was evidenced by repeated disputes between MFEM and MOIP in the ARC meetings over whose financial report was correct. The PMT experienced frustrating communications with MOIP,<sup>10</sup> emails frequently not responded to, requests for further information and procurement options were often ignored or deferred, phone calls were not returned, unilateral decision making (by MOIP head Office) regarding project matters, wages calculations, erratic timeliness of payments to suppliers, and general difficulty with communication, were perennial issues for the PMT.

In preparing this report we note that the completion reports by the various project implementers provided a range of financial reporting styles: basic income and expenditure statements (1 report); some reconciliation according to the agreed budget (6 reports) or no financial information (3 reports). The basic expenditure statement was from the Island Administration for the cleanup of the island. MOIP provided no formal financial statement for Category 3 and 4 houses, the sanitation project, and the waste disposal contract with RCI. The lack of ability to provide a financial report, particularly for the private contracts, demonstrates poor contract administration practice. Although the containers of asbestos remain on the island, the contractor has reported that now that the Cook Islands Government has agreed to underwrite the insurance cover of its transport to NZ, the activity will soon be completed. This was delayed due to time taken to develop and assess proposals for burial on the island, disposal at sea and then arranging for legal disposal in NZ at a certified hazardous materials facility.

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<sup>9</sup>Scantlebury (2011, p14)  
<sup>10</sup> *ibid*

The lack of financial documentation from the Lead Implementing Agency during this project, MOIP, continues to be a concern. The Head of Administration at MOIP has stated that they have the information, and that it was made available to the Auditors who recently visited the Ministry (August 12, 2013).

AMD statements indicate that all sub-projects were completed within budget with a residual budget figure of \$597,074 remaining. There is a discrepancy between AMD and MOIP records of \$5,359.87. The other government agencies recorded their expenditure against the agreed budgets of their contract and delivered accordingly.

Cook Islands Audit Office has undertaken an Audit of MOIP operating budget and KPMG have been commissioned to conduct an audit of MOIP project activities. These reports were not available at the time of preparing this Activity Completion Report. Therefore while we are able to draw financial conclusions they are subject to the KPMG Audit report findings and CIgov response.

On this basis we conclude that the project could have been more efficient in its implementation. Procurement resulted to a small extent in some waste and missed opportunities to directly benefit the Aitutaki economy. MOIP contract administration and financial management reporting to the PMT was inefficient. As a result financial reports to ARC were delayed and disputed. This contributed to undermining trust between Cook Islands management groups and development partners in efficient delivery of activities.

## **Impact**

Overall, the project has had a positive impact. The project was able to minimise migration of residents, stimulate the local economy and improve private and public physical infrastructure. The visual impact of the island as a result of the new buildings and the removal of debris has been a very positive outcome of this project. This has had a positive impact on economic returns for the island of Aitutaki. Tourism has taken advantage of this by the increased number of events that have been held on the island since the cyclone, thereby increasing visitor numbers. New school buildings, classroom furniture and teaching resources have also created an inviting environment for students and teachers. The growing school rolls indicate that the security and cohesion of island family life has now been resumed.

Another positive impact has been the enhanced employability of the young male workers. This has been significantly improved due to what was effectively a 12 month onsite training course with all workers (102) receiving a Certificate of Employment that details their individual work period and job description. They also have added capacity through the ownership of personal tools and equipment.

Scantlebury mentioned two important societal concerns that arose out of the Category 3 and 4 activity. Firstly, that there was an apparent sense of entitlement, that poor home maintenance had been rewarded by extensive repairs and new homes which generated some feeling of inequity among some of the Aitutaki residents, especially those who regularly spent money on home maintenance. Secondly, community culture and political activity during the project contributed to a demoralisation within the community. The appointment of a new Mayor and his council during the project resulted in their decision to alter the Category 3 and 4 schedule. However, their decision-making took so long that the PMT decided to remain with the original list. As a result of this disquiet and the need for these community issues to be addressed, the MFEM Programme Manager went onto local radio and explained the situation in both English and Maori - that the issue wasn't about "entitlement" but that the people of Aitutaki were all beneficiaries of public finance offered by the Cook Islands and the New Zealand governments.

The importance of ongoing community dialogue cannot be understated and raises the importance of clarity around 'Who should get what?' There is an opportunity here to review the criteria and make them explicit in a widely communicated policy to all islands. The criteria needs to be flexible to address a variety of complex situations including;

- people living in another persons house (e.g. extended family)
- people renting a house (both owner and renter)
- non-resident home owners (e.g. Aitutakians living in Rarotonga).

The development of such as policy instrument would reduce the potential for future disputes during the recovery phase.

One unintended outcome of the cyclone was the demolition of old or make-shift structures on the island. Through the clean up and reconstruction, newly instituted processes will ensure that future construction work adheres to the the Cook Islands Building Code. The repairs and reconstruction of residential homes have enhanced the visual appeal of the island but more importantly homeowners now have homes that have been built to withstand cyclones of similar or stronger intensity.

## **Sustainability**

Sustainability of the project has been demonstrated in a number of ways across the 10 activities of the project. The understanding throughout the island of the philosophy and practice of cyclone resistance building has been greatly enhanced. The warning system was demonstrated by the CI Met Office and people on Aitutaki are aware of how it works and what they are supposed to do in the event of the warning system being activated. The value of strengthened construction processes will ensure that the Cook Islands Building Code will be adhered to more rigorously. A local manufacturing plant has been established to produce concrete septic tanks and a quality assurance programme and process manual based on a NZ manufacturing standard has been produced to support it.

School data indicates that families are more confident about returning to the island to homes that have been repaired or reconstructed to withstand a similar cyclone. Families are noticeably taking more pride in their homes. The Project Manager based on the island recorded "before" and "after" photographs to demonstrate the impact of the repairs made to the houses. Many have been included in the Project Completion Report.

As a healthy and clean environment is critical for tourism as well as for the wellbeing of the people of Aitutaki, environmental sustainability has been a priority. Waste management practices are being implemented by the island administration and will be sustained by a National Solid Waste management strategy that is currently being developed to incorporate the outer islands as well as Rarotonga. Local capacities were built up during the clean up process to sustain appropriate environmental management and to minimise and mitigate any negative environmental impacts. It is recommended that environmental and resilience programmes, especially in relation to the susceptibility of small islands to the effects of climate change, are incorporated into education programmes for schools and village communities.

There was no specific exit plan developed by MOIP following the conclusion of the project. The Project Manager was recalled from the island before all the Recovery projects had been completed. He was reassigned to another NZAP project. The remaining unfinished projects included the installation of septic tanks which resulted in some consultation issues, and some waste disposal work by the private contractor. There was no system in place to ensure that reporting was continued, and that factual and verifiable information was available to produce a

timely and accurate end of completion report. This highlights the importance of reinforcing CIGov (in particular MOIP and MFEM) contract management systems.

With regards to cross-cutting issues, the reconstruction work on the island gave men on the island an opportunity to participate on a practical level in the recovery process. Although not mentioned in the reports, it is assumed that the women were assigned the clean up responsibilities around the home and volunteer work (e.g. Red Cross). It is recommended in the design of recovery programmes that all sections of the community, including women and youth, the elderly and the disabled should be included and participate. This will ensure their needs are met but also fosters greater ownership of the outcomes, fosters self help and provides opportunity to help them deal with the after-effects and trauma of a disaster situation. Equal participation would have drawn on the strengths and capacities of all community members. Examples could be organising awareness programmes specifically for gender-related issues particularly alcohol abuse and domestic violence which can result from the stress built up after a disaster event. Children and youth groups could also have been involved in community initiatives to help in the rebuilding process and to support general wellness within the community.

Although their report does not outline the specific support given to the community, the head of EMCI later reported that while EMCI concentrated on the response and recovery activities, staff of the Red Cross and INTAFF provided counselling services to those who requested it. INTAFF focused on the women, elderly, children and the disabled. However there is still more need for specific training for targeted groups to ensure a more sustainable approach to how they would react to a similar situation. EMCI is in the process of reviewing its DRM Act 2007 to address the issues of multi-agency response to an emergency situation.

Cyclone Pat served as a reminder for community and family preparedness to the risks of unpredictable weather. To ensure the future sustainability of the projects outputs, it is important that the communities do not lapse into complacency. Regular monitoring from the new weather warning system and ongoing training and awareness raising is required to build community confidence and resilience. It is important that organisations such as EMCI and INTAFF are provided with funding to continually support preparedness strategies on the outer islands. There is a concern about the lack of qualified counsellors within the Health system.

It is recommended that consideration be given to conducting a post project evaluation to ascertain the impact and sustainability of the project particularly in relation to its impacts for marginalised groups including women and children.

## Risk Management

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Across the ten activities of the project, a number of risks were identified and managed.

Recovery efforts related to the reparation to domestic houses, hospital, schools and village evacuation centers, all offered an opportunity to integrate improved disaster resilience into the reconstruction programme to "build back better". However, more careful attention to the design of the works, some forward logistical planning of the materials required, and the planning of the transportation of plant and equipment would have reduced the delays which hindered progress on several occasions. Inaccurate calculation of materials for the construction activity by MOIP and by contracted suppliers of roofing and joinery material created delays and extra transports costs. Financial and communication issues indicated some instability within MOIP's project management structure. The non-replacement of the Finance Officer meant that

there was no-one who was directly responsible for maintaining the project's financial obligations and services within the requirements of the MFEM Act and the Cook Islands Government Financial Policies and Procedures Manual. The role was ineffectively added to the other administrative tasks that were already required of the PMT.

Discussions with the Project Manager during the preparation of this report, suggested that disaster management processes should be more streamlined to enable agencies to more quickly respond to urgent needs. These would include minimising the expectations of procurement and similar bureaucratic systems, prioritising transport arrangements for emergency purposes, as well as ensuring capable personnel and effective communication services between the Rarotonga base and the activity centre on the outer island. Although MOIP was given the lead role in this activity, they did not appear to have the internal capacity to cope with critical roles and expectations.

Potential risks relating to the possibility of poor workmanship and lack of experience with specialised materials and techniques were addressed by the PMT's assignment of mixed-ability work teams where those who had less experience were given a 12 month on the job training programme alongside those with both experience and qualifications. Before the cyclone, it was found that the systems for adherence to the Cook Islands Building Code were not applicable to some of the below standard Category 3 buildings that the construction teams worked on. "In assessing quality it was clear from early on that workmanship, fitness for purpose and sound professional judgement were the criteria for effective solutions"<sup>11</sup>. Assessments were made by qualified and experienced builders that the repairs that were made would survive any future cyclone up to category 4 activity. It is unrealistic to expect buildings (especially category 3 houses and existing community buildings) to survive 'any cyclone' as this would include Category 5 and entail excessive and unnecessary cost.

Although not initially identified as a risk, it was important to get local buy-in with regards to decisions involving matters that they would have to live with at the conclusion of the project. Consultation between the ARC and locals was regular in the beginning but tapered off as the project got into gear and people became busy. MOIP were then able to make decisions that at times did not include the Aitutaki based PMT or the local community. An example was the change of septic tank to a model that required an electric connection in order to work effectively. Including householders into the decision making was critical to their responding appropriately as well as giving them some ownership during the development and implementation of the project.

Risks related to the disposal of waste that had accumulated even before the cyclone were addressed as a result of this project. Legacy waste was removed at the same time as part of the major cleanup. A national waste policy is required to include the outer islands, and to ensure that waste is regularly picked up and disposed of from the outer islands so as not to create any detrimental effect of hazardous by-products leaking into the soil and underground water ways. A private contractor was brought onto the island with specialist equipment which crushed solid waste units, containerised them and removed most of the non-hazardous material off the island. Asbestos has been containerised, and is ready for removal now that Cabinet has recently agreed to underwrite the insurance cover.

Risk management strategies could have been improved. Communication breakdowns between MOIP-Rarotonga and the Aitutaki Project management team (PMT), as well as inaccurate calculations being communicated to suppliers for equipment required for the construction activities, created delays which were costly and unproductive. The approval process for the

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<sup>11</sup>Scantlebury (2011, p8)

local septic tank manufacturer could also have been handled more efficiently. Additional expenditure was created by having to airfreight urgent supplies. Relationships with suppliers were also unnecessarily damaged by poor communication and slow processing of payments. MOIP Rarotonga did not help the situation by their lack of timely and appropriate response to PMT emailed requests. It is recommended to develop a procurement plan for disaster response situations for future events.

## Monitoring and Evaluation Issues

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The Aitutaki Recovery Committee (ARC) was charged with the oversight of the management of the project, with the assistance of the Project Manager, and the Technical Services Division of MOIP. Progress was to be monitored according to the contract work plan, budget and the project implementation document. Payments were dependent on the achievement of milestones by the contractor, and the Project Management Team were to report weekly to the ARC. The ARC in turn were to prepare information papers for Cabinet to update the politicians on the progress of the project. While these Cabinet updates are not included in the AMD information system the Cabinet Services confirmed that several information papers and submissions were tabled throughout the duration of the project.

The Project Manager provided weekly updates for the ARC so that they could monitor progress and make decisions. The writer attended several of these meetings at the latter stages of the project, and although the meetings were attended by the multi-stakeholder representatives of the various agencies, the discussions were dominated by NZAP driving decisions to move the project ahead. It appears that these messages may not have been relayed to the onsite team in a timely manner. At the occasional meeting that the Project Manager attended, he was able to give a face to face report on the situation on the island, and to personally outline any difficulties that the PMT was experiencing.

The lack of a results framework from the outset resulted in a lack of focus for the implementers on the intended development outcomes. Although funding was allocated quite liberally to the government agencies, there was little support to ensure that the agencies actually had the capacity to effectively manage their information systems, especially in relation to sound results-focused public financial management and transparent reporting of information. Having defined indicators or targets and defined outcomes would have guided implementation, monitoring and reporting. That said, should it be deemed necessary, a post project evaluation exercise will provide further results-focused evidence of the project's performance.

Overall, we can infer that the project was able to contribute towards a number of development outcomes such as: reduced voluntary migration of residents, stimulated local economy, improved private and public physical infrastructure across the island, and improved preparedness for potential future weather events.

## Governance and Management Issues

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Overall, implementation and mobilisation of emergency and recovery efforts as per Disaster management legislation and EMCI policy was timely and undertaken with appropriate governance and management mechanisms established to undertake the project. The project was led by the Aitutaki Recovery committee which consisted of members of CIGov, MFEM,

OPM, EMCI, AMD, INTAFF, CIIC, MOIP, Red Cross and NZAP. The Project Management Team consisted of the Project Manager(PM), Deputy PM, Community Liaison and the Clerk of Works. The composition could have been balanced further by including private and traditional leader representation. It was noted that the professional approach of this team provided for a productive rapport on the ground. There was positive support given for project requirements from the Aitutaki Mayor and the Island Council<sup>12</sup>.

The finance officer position was vacant and backfilled in Rarotonga, and sometimes not very satisfactorily. MOIP's quantity surveys and ongoing procurements were essentially conducted by a single person who did not appear to be able to cope satisfactorily. The PMT experienced frustrating communications with MOIP. Emails frequently not responded to, requests for further information and procurement options often ignored or deferred, phone calls not returned, unilateral decision making (by MOIP Raro) regarding project matters, wages calculations, erratic timeliness of payments, and general difficulty with communication, were perennial issues for the PMT. The delays and logistical restructuring cost money and introduced unwanted risk into the project completion outcomes<sup>13</sup>. Having a robust process for accounting for all paid services is essential to ensure claims are valid and processed in a timely manner.

Apart from the 65 newly constructed Category 4 homes which became project assets remaining on the island, and the septic tanks installed as a part of the Category 4 package, there were no other individual assets of value greater than \$1000 purchased from NZAP funds for this project. Most of the tools for workers were purchased by the Island Council from donations from Aitutakians from Australia and New Zealand. These tools were sold to the construction workers at the end of the project. Any heavy machinery that was brought in to cater for the iron waste was hired by RCI and removed from the island at the conclusion of the contract.

## Lessons Learned

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A number of lessons are identified which include examples of good practice that avoided or took account of potential risks and issues that did or could have hindered implementation and achievement of outcomes.

The project management team realised that **consultation, communications and public relations played a major part** in the successful implementation of this project. Relationship building with stakeholders, including the local Council, the Island Administration, tourism operators and other businesses, NGOs, Telecom and other infrastructure staff, village administrators, as well as community members, was critical to ensuring that the project successfully achieved its contractual objectives as well as those of the Government's Recovery Plan. At the same time the involvement of local workers reinforced social relationships and individual motivation through a sense of hope, an ability to be part of a change-making process and a greater sense of community and social cohesion.

The poor communication between the Rarotonga and Aitutaki bases indicates a strong necessity for the development of a communication strategy for use with Pa Enea projects. There is also a necessity to ensure that applicable technology is available to enable all relevant information to be suitably collected, recorded and directed to the appropriate person to deal with in a timely and appropriate manner. Communication on the island for the locals was

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<sup>12</sup>Scantlebury (2011, p5)

<sup>13</sup>Scantlebury (2011, p14)

provided by the Mayor of Aitutaki's twice a week radio sessions giving updates of project progress and raising other issues<sup>14</sup>. However greater planning in communicating all decisions to the public needs to be a priority. This includes: decisions on how housing repair categories were reached and the order of which will be repaired and why.<sup>15</sup>

Several houses that did not incur any damage during this cyclone even though they were built before the implementation of the Cook Islands Building Code in 1999. MOIP and the Island Government must ensure that **applicable construction practices and the building code are enforced** for all buildings. Perhaps a regular building inspection could take place to ensure that buildings are up to code and to reduce the risk of a similar clean up situation happening again.

It was important that PMT was prepared for engagement with the local council and other stakeholders before the building commenced. Not only did they need to have all the technical details relating to work sites and equipment and mainpower, but they also had to be aware of the political and social hierarchies that might influence council decisions about any related project activities.

The PMT needs to be supported with timely accurate financial management reporting and be directly involved in procurement decision making. Organisations responsible for procurement must have the necessary contract administration capacity. Competent financial support should be placed within the PMT, this could be achieved by seconding personnel from MFEM or MOIP or recruiting personnel. A procurement plan for disaster recovery should be developed to frame future responses around the 'build back better' approach and maximising opportunities for gainful employment of affected populations including women, youth, business, growers, fishers.

In future, consideration should be given to greater delegation of decision making authority at the islands level including: locating the Recovery Committee in the effected zone to speed up decision making and accountability to the effected local population. If this is not practical then Island Council representation by phone conferencing and local consultation need to be standardised to ensure feedback to and accountability of committee members.

Development of a national protocol by the the CIGov should also be considered for the disposal of asbestos and other hazardous materials that outlines risks, responsibilities under international conventions and policy options for disposal. For example, asbestos shipment to a certified hazardous waste facility. This will fast track decision making for future recovery activity.

## Overall judgement and critical issues

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Overall, the PMT are satisfied that the project has left a legacy that was more than just bricks and mortar. For them, the most important lesson learned through the project was the need for key stakeholders to be involved in the recovery process with greater levels of delegated authority to make decisions on island. The main areas of concern was the lack of locally based decision making authority and communication support systems in place by MOIP to ensure more smoother management of the project on the island.

● <sup>14</sup>Project completion report 2010. Aitutaki Residential Reconstruction Project Cat 1 and 2 (p26)

<sup>15</sup> Email communication, Michael Henry, 9 September 2013.

More attention could have been given to the involvement of women's and youth groups in the recovery process perhaps in a project that would have enabled them to also leave a legacy of their involvement in the rebuilding of their communities. Although INTAFF and Health assisted the elderly and disabled, more attention could have been given to ensure that their psychosocial needs had been addressed following on from such an experience.

The assessed budget of \$6,037,014 was underspent by \$524,184. Not only did the repair and reconstruction activities make a dramatic impact on the visual appeal of the island, but it also enhanced the local economy during the period of the project, as well as the skills and employability of many of the young local workers. There was a great effort during the project to minimise the environmental impact and to "build back better". An attempt to cyclone proof new and repaired houses, will help to reduce the island's vulnerability to future cyclones. The work teams themselves quickly adapted to successful reconstruction work and sustained good working relationships with local partners in a way that built trust, ownership and responsibility.

The only activity that didn't deliver on time was the removal of the asbestos, but this was due to lack of clarity about disposal of asbestos, the requirements of the international protocols and a decision from Cabinet about insurance cover. Overall, the project delivered on its outputs on time and within budget.

Overall, the many benefits far out-weighed any negatives that arose during this project. The benefits cut across a variety of impacts on the island itself, from the enhanced quality of housing and other buildings on the island, the cleanliness of the environment due to the removal of unsightly and hazardous waste, the skills that were developed by people from other islands as well as from Aitutaki, who were involved in the building and clean up activities; and most importantly the immediacy with which the situation was addressed by both New Zealand and the Cook Islands which allayed fears of both the locals and visitors, so that potential mass migration off the island was avoided as people remained to help to build their island back better.

## Final actual expenditure against budget

Appendix D shows that overall expenditure of **\$5,512,830** was under the approved allocation total of **\$6,400,000** realising a surplus of **\$524,184** across all ten components of the project.

Tables below show expenditure for the housing repairs. As the largest component of the programme, expenditure was within the combined approved Letter of Variation allocations for domestic housing related activities of sanitation, labour and repairs.

**Table 2: Damaged Domestic Housing based on maximum grants (assessed by Red Cross and MOIP)**

Extent of Damage	Originally assessed number	Actual Number completed	Maximum Grant	ASSESSED COST of REPAIRS
Category 1: minor damage (0-25%)	59	124 <sup>16</sup>	\$7500	930,000
Category 2: moderate damage (26-50%)	51	(38 repaired by owner)	\$7500	
<b>Category 3: major damage (51-75%)</b>	95	95	\$15,000	1,425,000
<b>Category 4: completely demolished</b>	72	65	\$35,000	2,275,000
<b>TOTAL</b>	<b>277</b>	<b>301</b>		<b>3,700,000</b>

**Table 3: Overall Actual costs for the Category 3 and 4 houses**

Funding Allocation	Budget	Actual costs (AMD)	Remaining balance
<b>Category 3 &amp; 4</b>	3,020, 000	2,960,448	59,552
<b>Sanitation</b>	480, 000	462,247	17,753
<b>Labour Costs</b>	1,014,000	961,918	52,082
<b>TOTAL</b>	<b>4,514,000</b>	<b>4,38,613</b>	<b>129,387</b>

<sup>16</sup> Ibid (p16)

## Appendix A: Asset Register

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For all non-consumable capital items valued at NZ\$1000 or more:

Apart from the houses and sanitation units that were constructed during the project, there were not other assets of value <\$1000 purchased via NZAP funds.

<b>Asset Name</b>	<b>Purchase Price</b>	<b>Date of Purchase</b>	<b>Location Held</b>	<b>Asset Disposed (where relevant)</b> Comment on where, how and why asset has been disposed of	<b>Date Disposed</b>

## Appendix B: Transition or Exit Planning

Task to be continued beyond Activity completion	Necessary inputs	Timeframe	Responsible organisation	Capacity development required to support responsible organisation
Asbestos removal from Aitutaki	Transboundary paperwork (NES); Submission to Cabinet for approval for insurance underwrite (MOIP); NZEPA paperwork (RCI) and approval; transport costs (RCI)	As soon as possible	Recycling Cook islands	Understanding of Cook Islands obligation under international conventions. for hazardous waste – prohibits dumping at sea. Need to strengthen practice of international norms in relation to handling and disposal of hazardous materials such as asbestos.
Ongoing Waste collection and removal	Recycling and storage centres; management practices in place	Weekly on the island; annual removal of solid waste	Island Administration	National Solid Waste Management Plan being developed to incorporate waste removal from the outer islands
Regular Inspection of hospital, school buildings, and, sanitation units and new buildings.	House and repair inspection	Regular maintenance programme	CIIC /Island Government  WATSAN/Public Health  MOIP	Budgets for matinenanceof all public buildings into its business plan to ensure safety and security as well as sustainability  WatSan Aitutaki site office set up to start inspections of sanitation units to ensure treatment is at required levels.  Aitutaki Building inspection capacity needs to be improved to meet new building code standards. Building code review completed.

<b>Task to be continued beyond Activity completion</b>	<b>Necessary inputs</b>	<b>Timeframe</b>	<b>Responsible organisation</b>	<b>Capacity development required to support responsible organisation</b>
Ongoing disaster risk awareness and preparedness	Awareness and training programmes	At least annually before cyclone season All outer islands	EMCI, Island Government	Awareness and disaster risk management training part of core business of island governments
Inspection of the warning system	Inspection	Per systems specifications	Cook Islands Met Service	

## Appendix C: Achievements against Results Framework

Noting comments above, no result were This table shows progress of the Activity against the intended outcomes and outputs defined in the Results Framework.

<i>From agreed Results Measurement Table in the Activity Design Document</i>				<i>Data up to and including this reporting period</i>		
<b>Results</b>	<b>Indicators</b>	<b>Baseline data</b>	<b>Targets</b>	<b>Actual measurement (against targets using indicators)</b>	<b>Variance explanation</b>	<b>Actual methodology and data sources</b>
<b>Long-Term Outcomes</b>						
<b>Medium-Term Outcomes</b>						
building code implemented; accredited skills for local tradesmen				Category 4 houses built to withstand future Category 4 cyclones. 102 workers received certificates to detail skills and to support future employability		
EWS operational				Evacuation shelters prioritised for rebuild; New system can be monitored to give early warning for Rarotonga.		

Towards Zero-Waste strategy applied				All hazardous waste collected, containerised and shipped off the island. Solid Waste collection procedures in place. National Solid Waste Strategy being proposed (to remove solid waste from outer islands)		
<b>Short-Term Outcomes</b>						
Secure and safe domestic and public infrastructure	# of house destroyed as per categories 1-4	# to be repaired for each category		<b>301</b> 124 repaired homes Category 1 & 2 Cat1 (75) Cat 2 (35) (38 repaired by owner) Cat 3 (95) Cat 4 (65) Hospital repairs completed Schools repaired as per schedule of works		
Raised public awareness of preparedness	# training			Training programmes conducted as per EMCI completion report		
Safe Waste disposal plan developed				Administrative guidelines detail solid waste collection and storage processes		
<b>Outputs</b>						
Recovery and Reconstruction - Hospital, Schools & Houses repaired and rebuilt	Houses repaired			Construction teams mobilised (6 x teams)  Materials and equipment procured and distributed as per specifications		

Disaster Resilience - Training and raising awareness programmes take place	# of training and awareness programmes delivered			EMCI workprogramme implemented		
Solid Waste management - Cyclone-related Waste collection and disposal out-sourced				RCI contracted for disposal, work teams mobilised		
Project management				ARC and PMT operational throughout recovery phase. Manpower recruited, Management systems in place-PM, Clerk of Works		

## Appendix D: Reporting Against the Agreed Workplan and Budget

Output	Planned Expenditure	Actual Expenditure	Variance	Reason for Variance
<b>BUDGET</b>	\$6,400,000			
<b>Output 1. Recovery and Reconstruction</b>				
1.1 (MOIP) Category 3 & 4 (LOV1)	\$3,020,000	\$2,960,448	\$ 59,552	Completed within budget
1.2 (MOIP) Sanitation (LOV 1)	\$ 480,000	\$ 462,247	17,753	Completed within budget
1.3 (MOIP) Contingency (LOV 1)	\$ 170,000	0	\$170,000	Not required
1.4 (MOIP) Labour Costs (LOV 6)	\$1,014,000	\$ 961,918	\$ 52,082	Completed within budget
1.5 (MOIP) Evacuation Shelters (LOV4)	\$ 74,219	\$ 64,700	\$ 9,519	Completed within budget
1.6 (CIIC) Schools Emergencies (GFA)	\$ 297,384	\$ 297,384	0	On budget
1.7 (CIIC) Schools Recovery (LOV 3)	\$ 299,914	\$ 236,751	\$ 63,163	Completed within budget
1.8 (MOE) Schools Resources (LOV 3)	\$ 100,000	\$ 99,907	\$ 93	On budget
1.9 (AMD) Programme Manager (LOV 2)	\$ 91,000	100621	\$ 9,621	Approved Overspend due to time extensions
1.10 Sale of ARC Materials in Aitutaki	0	\$ -142,619	\$142,619	Revenue
<b>Output 2. Disaster Resilience</b>				
2.1 (METs) Early Warning System (LOV 4)	\$ 65,000	\$ 62,237	\$ 3,763	On budget
2.2 (EMCI) Disaster Risk Management Project (LOV 5)	\$ 20,000	\$ 12,737	\$ 7,263	Completed within budget
<b>Output 3. Waste Management</b>				
3.1 (Aitutaki Island) Collection & Storage (LOV 5)	\$ 40,497	\$ 36,985	\$ 3,512	Completed within budget
3.2 (Recycle Cook Islands) Waste Disposal	\$ 365,000	\$ 360,514	\$ 4,486	Includes accrued costs for Asbestos removal <sup>17</sup>
<b>TOTALS</b>	\$6,037,014	\$5,512,830	\$524,184	

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 MFAT.Cook Islands Bilateral Programme.Tropical Cyclone Pat Recovery and Reconstruction Support Fund.Letter of Variation 1. Social Recovery Programme (p9)

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<sup>17</sup> NES advised 2 containers from Aitutaki 2 x \$20,000