Darwin Initiative
Final Report

*To be completed with reference to the Reporting Guidance Notes for Project Leaders (http://darwin.defra.gov.uk/resources/) it is expected that this report will be a **maximum** of 20 pages in length, excluding annexes)*

Darwin project information

Project reference	22-001
Project title	Rescuing and restoring the native flora of Robinson Crusoe Island
Host country(ies)	Chile
Contract holder institution	CABI
Partner institution(s)	CONAF, INIA, MMA, Oikonos
Darwin grant value	£227427
Start/end dates of project	1st April 2015 - 31st March 2018
Project leader's name	Steve Edgington
Project website/blog/Twitter	www.cabi.org/projects/project/46827
Report author(s) and date	S. Edgington, V. Lagos, A. France, P. Hodum. 28 June 2018

1 Project Rationale

The Chilean Ministry of the Environment approached CABI to provide technical and scientific assistance to help conserve, propagate and re-establish native plants in the forests of Robinson Crusoe Island (RCI). RCI is the largest island of the Juan Fernández Archipelago (JFA), a UNESCO International Biosphere Reserve with one of the highest densities of endemic plant species in the world, many of which are endangered. Invasive plant species have colonised around 90% of RCI's forest and must be controlled and replaced by native plants to prevent the complete loss of its forest, including many rare plant species. The island lacks the infrastructure and know-how for conserving and propagating healthy plant material, furthermore there is no structured plan for re-introducing native plants into forested areas. The project is part of an invasive species management programme for JFA led by Chilean Government. The Darwin project is enabling the conservation, propagation and replanting of native species in the cleared areas of invaded forest. The project is establishing a seed bank to conserve many of RCI's native plants and, restore key native species (including two on the IUCN Red-List, to 1 ha of cleared land as proof of concept for re-establishment. The project is improving nursery propagation of native species, ensuring sufficient numbers are available for replanting. At the programme level it supports the restoration of 30 sq km of JFA by 2033.

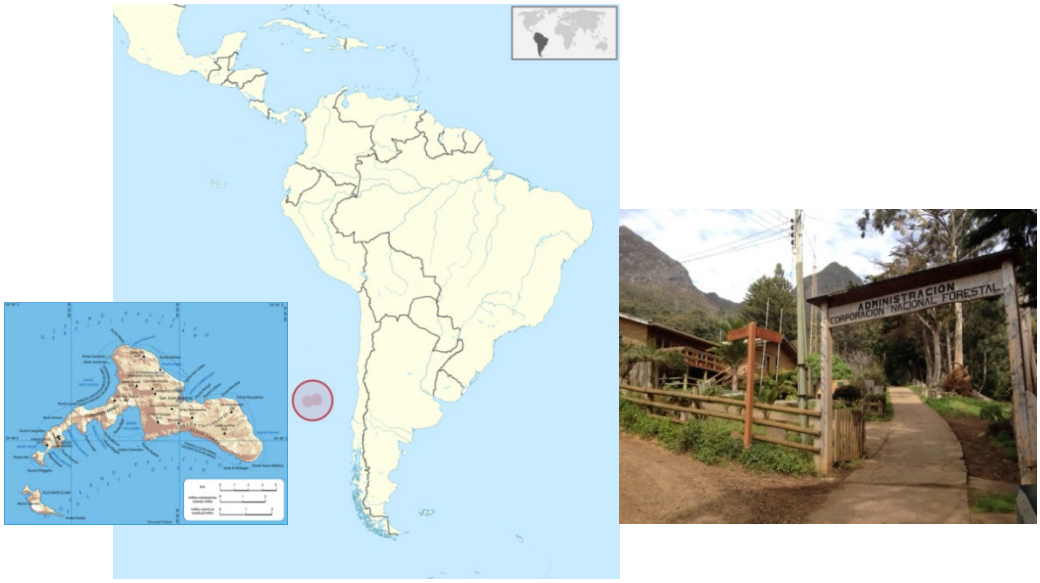

Figure 1. Robinson Crusoe Island is within the Juan Fernandez Archipelago, about 360 miles off the coast of Chile. The project's HQ is at the CONAF administration centre (above right), where the nursery and new seed bank are located. Photo: S. Edgington CABI; Maps: https://commons.wikimedia.org

2 Project Partnerships

The project had four official partners (excl. the UK lead):

- Chilean National Forestry Commission (CONAF): Host-country lead. CONAF is the government body responsible for Chile's National Parks, of which RCI is one, and was key to successful project implementation. They led all in-country activities, including review and planning meetings in Chile. They were instrumental in delivering an agreement with Chile's National Seed Bank to safely store RCI seeds on mainland Chile and organising a Nagoya/ABS seminar in the Chilean capital, two activities not in the original plan. They also made the decision to station an officer on RCI with 100% commitment to project implementation (again not in original plan), which proved an excellent decision as it removed this officer from all mainland meant demands on their time. Albeit with a few ups and downs for the officer concerned as RCI is rather remote.
- Chilean Ministry of the Environment (MMA): In Y1 it was agreed that MMA's project budget for staff would go to CONAF to enable a project officer to be stationed on RCI (official Darwin change request agreed).
- Instituto de Investigaciones Agropecuarias (INIA): INIA's primary project activity was researching the use of soil microbes to aid plant production in the RCI nursery and then subsequently in the field. They were very active throughout the project and were extremely good value for money regarding staff input *vs* budget. They attended every project review and planning meeting, visited RCI on four occasions, presented various papers and posters at conferences and produced a project YouTube movie.
- Oikonos: Oikonos is an international NGO focused on studying and protecting threatened ecosystems. They were primarily involved in clearing patches of invasive species to enable the re-introduction of native species. They were also monitoring the long-term impact of invasive clearance on populations of rare bird species (although not as part of the project). Oikonos activity on RCI was excellent and, even though physical presence at meetings on the mainland was difficult, they remained in good contact with the team throughout the project.

CONAF and INIA were significantly involved in the writing of this report. MMS and Oikonos were sent drafts for their comments.

Oikonos and CONAF will continue to work with each other as they both have representatives on RCI working on forest rehabilitation. CONAF and INIA are presently looking at links for new project proposals, so again they will be keeping in contact.

3 Project Achievements

3.1 Outputs

Output 1. Seed-bank established to conserve native RCI plant species

1.1 Physical presence of functioning seed-bank facility. **Baseline**: no seed bank on RCI; seeds stored on shelves at nursery (see Figure 2 below). No suitable laboratory facilities for handling seeds. **Progress**: A permanent, dedicated seed bank was installed, fitted and operational by project end (Figures 2 & 3). The bank's physical structure was a shipping container, purchased and installed using matched funding from CONAF. Suitable doors, windows and a good roof were added, as well as electricity, storage cabinets, sinks and lab equipment. The bank was physically joined to the island's old nursery laboratory which was renovated with new benches, sinks etc, to facilitate processing, quality control and transfer of seeds from bank to nursery. There was an official opening ceremony for the bank, attended by local residents, senior representatives from CONAF, the Mayor of RCI and CABI's Regional Director for Latin America (see Figure 3).

Figure 2. Installation of RCI seed bank. L-R: pre-project seeds stored on shelves in nursery; new seed bank structure installed; adjoining lab renovated.

Figure 3. The new RCI seed bank. L-R: modernised fittings and seed storage; members of the project team at the opening of the 'Carl Skottsberg' RCI seed bank. Carl Skottsberg was a Swedish botanist who explored RCI in 1908

1.2. Seed-bank and nursery records record show minimum of 50% native species conserved by year 3. **Baseline**: 17% of RCI's native species stored on shelves at nursery in unsealed containers with no quality control process. **Progress**: Pre-project seeds stored on nursery shelves were assessed for viability and all were discarded as viability was (often extremely) poor. Project accession records show 64 native plant species were collected during the project of which 51 were stored in the new bank (see Table 1, Annex 6) and the remainder going straight to nursery. Species in storage include four IUCN critically endangered species, three IUCN vulnerable species and all five of the project's priority species. The collection represents 57% of RCI's native species, 27% at the archipelago level. Quality control practices were established to test seed viability in storage and the tests revealed at least six species (including two priority species) had issues which will require careful observation. In Year 2 an agreement was established with Chile's National Seed Bank to conserve and curate a duplicate collection of seeds on mainland Chile with a small number of seeds were transferred in Year 3 and the intention to create a full duplicate collection over the next several years.

1.3. Seeds of five priority species passed to the nursery. **Baseline**: one project priority species in temporary storage (on shelves at nursery), with no quantitative records of transference to nursery propagation. **Progress**: Nursery accession records (Table 1 Annex 6) show that all five project priority species were collected, stored in the seed bank and passed to the nursery during the project timeframe.

Output 2. Improved nursery facility to ensure sufficient plant material available for 1 ha habitat restoration (assuming growth from re-established species as well)

2.1 Productive, protected floor space increased to 150 sq m, open nursery field production to be doubled. **Baseline**: Protected nursery floor space approximately 100 sq m, open nursery field production approximately 10 sq m. **Progress**: The project modified its priorities following feedback from the replanting team early Year 2. Fern production was prioritised over specifically increasing nursery floor space, as the project's removal of invasive plants had destabilised the soil and quick-growing ferns were needed for stabilisation. Project resources were re-directed to building a new, self-contained fern production unit rather than extending floor space. A fern propagation unit was purchased with matched support from the Chilean Institute of Ecology and Biodiversity, fitted-out and was operational by Year 3. To note, the unit has added an additional 18 sq m floor space to overall nursery area. There was an opening ceremony for the unit which included activities for the local school children (Figure 4).

Figure 4. The island's new fern propagation unit. L-R: project team discuss production: opening ceremony attended by local school children

In addition to the new fern unit the project was able to renovate and upgrade the main nursery (Figure 5). However, it did not hit the targets of increasing floor space by 50 and 10 sq m internally and externally, respectively. A new roof was fitted and walls and doors (damaged by a series of storms over the years) were repaired. It was decided that improved nursery practice,

following a visit of Dr Andrés France senior plant pathologist at INIA (see section 2.3) would compensate for missing the floor space target.

Figure 5. Essential repairs at the island's nursery, including a new roof and repairing damaged walls

2.2. Internal fittings and fixtures are modern and suitable for effective plant propagation. **Baseline**: many of the nursery fittings unsuitable for modern, clean, efficient production of healthy planting stock. **Progress**: An inventory was prepared in Year 1 for new nursery fittings (see Table 2, Annex 6) which were purchased and installed in Year 2. This was verified by an inspection by the project team

2.3. Nursery records demonstrate improved production efficacy of native plants. **Baseline**: Pre-project inventory visit showed nursery was producing around 3000 seedlings; however health of seedlings was poor with heavy reliance on chemical pesticides and chemical fertilisers. **Progress**: INIA's principal plant pathologist and project member Dr France visited the RCI nursery to discuss best practice with staff and to assess plants being grown prior to project implementation. The key findings of his visit were: plants were generally in poor health due to poor sanitation, overcrowding, pests and diseases, which meant nursery efficiency was low; the nursery relied heavily on chemical pesticides with little consideration to ecotoxicology and resistance management; and the nursery's irrigation system was unsuitable for efficient production. Dr France drew-up plans for a new nursery layout for improved throughout (Figure 6), which included a double-doored entrance and improved ventilation to help manage pests and diseases, together with better use of rainwater for irrigation. By project-end nursery production records (Table 1, Annex 6) showed that over 8000 seedlings representing 41 of RCI's native seed-producing plants had been produced (at a maximum of 4000 seedling p.a.), and approximately 15000 fern specimens of 17 species.

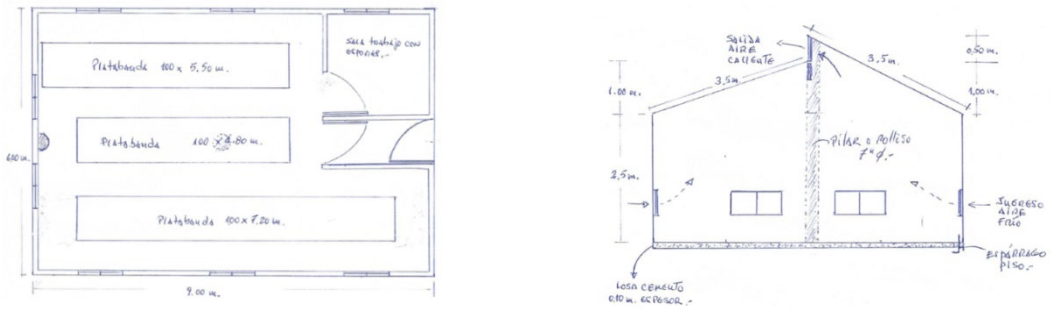

Figure 6. Plans for nursery modifications to improve throughput, by Dr Andrés France, INIA

Output 3. Enhanced technical capacity of local staff for propagation, storage and quality control of native plant species

3.1 Local working group on plant propagation established by year 1. **Baseline**: presently one person on RCI involved in plant propagation at the nursery. **Progress**: There remains just one full-time, paid nursery worker, however the project trained CONAF's park officers in plant propagation and established a rota system for supporting nursery activities. Training activities were as follows, although please note not all were directly related to nursery and/or seed bank

activities but have still been listed in this 'training' section for better flow of the report. 1) Collection and ex-situ conservation of seeds: This course was led by INIA (INIA curate Chile's national seed collection) and attended by 16 local people. Course content included seed conservation, quality control of germplasm and record keeping. Each participant received a manual produced by INIA and the Kew Millennium Seed Bank on the collection and conservation of seeds (see Figure 7; full manual available on request); 2) Record keeping for seed banks. This was led by CONAF and attended by 15 local people (same participants as above with one addition) and introduced the template shown in Figure 8. 3) A fortnight of evening courses on various themes, including plant propagation, management of invasive species, habitat restoration and aspects of tourism (for list of courses see Table 3, Annex 6): Facilitated by CONAF, Oikonos, the Unit for Tourism and Culture of the Municipality of Juan Fernandez, the Office for National Tourism and Chile's Agriculture and Livestock Service. Advertised via social media, radio and fliers (Figure 9) and open to all RCI residents; 21 people attended (Figure 18, Annex 6 for list of participants). 4) The use of global positioning system (GPS) when sample collecting: Led by CONAF and attended by 15 people, all were park officers and responsible for collecting RCI seeds (course content available on request).

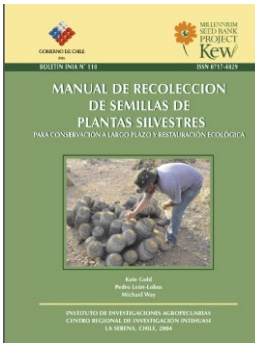

Figure 7. Seed manual given to trainees

Figure 8. Project's seed collection template

Figure 9. Flier advertising a series of evening courses run for residents of RCI

3.2 Manual of plant propagation and quality control distributed to local staff by Year 2. **Baseline**: no manual or written guidelines were present at the nursery/seed bank. **Progress**: By Year 2 a manual on the distribution, conservation and propagation of 18 endemic tree and shrub species (from vulnerable to critically endangered) had been written and distributed to 16 park officers and nursery staff. By end of Year 3 the manual had been updated to cover 31 species. (see Figure 10 for example layout; full manual is provided as a separate attachment to this report). Using matched funds CONAF intends to turn the manual into a book with additional information on soil microbiology, habitat replanting and the Darwin project in general (a copy will be made available to the Darwin Initiative with expected completion early 2019).

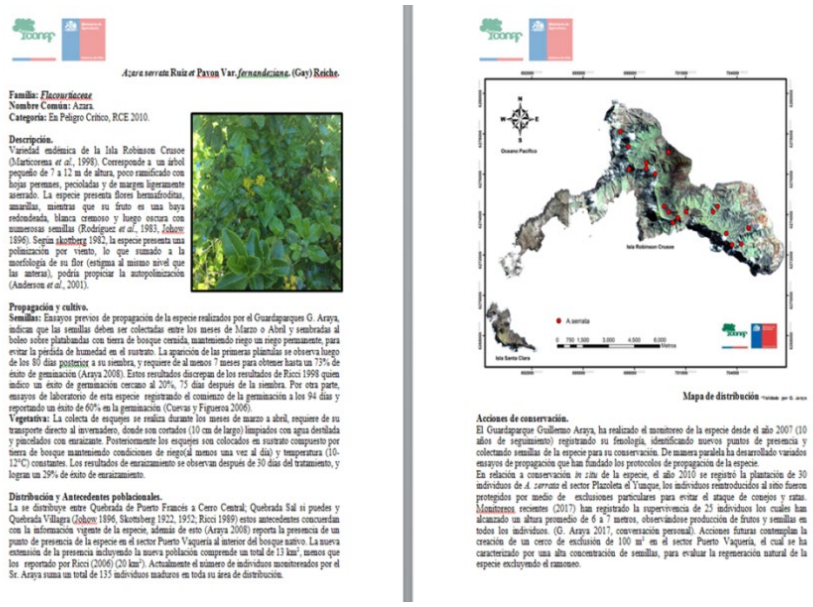

Figure 10. Example layout from manual on distribution, conservation and propagation of endemic plant species, produced by project team

3.3 Training notes demonstrate technical capacity building of local staff. **Baseline**: Prior to the project local staff had received no structured training on seed conservation and nursery production. **Progress**: The training courses detailed in Section 3.1 consisted of presentations and practical demonstrations. The training material is available on request from the project team.

Output 4. 1 ha of land cleared and five native plant species re-established

4.1 Field visits confirm 1 ha of land cleared by Year 1. **Baseline**: no land cleared pre-project. **Progress**: Oikonos coordinated the clearance of invasive plants, supported by a number of non-project partners. Clearance was primarily by hand with occasional herbicide use (Figure 11). Field log books show that by end of Year 1 the team had cleared 26 pockets of land, which when combined totalled over 1 ha (see Figure 12). Clearance continued in the next two years and by project-end records show that 56 pockets of land had been cleared, approximately 2.5 ha. The project team produced a document detailing site selection for both clearance and replanting which is provided as a separate attachment.

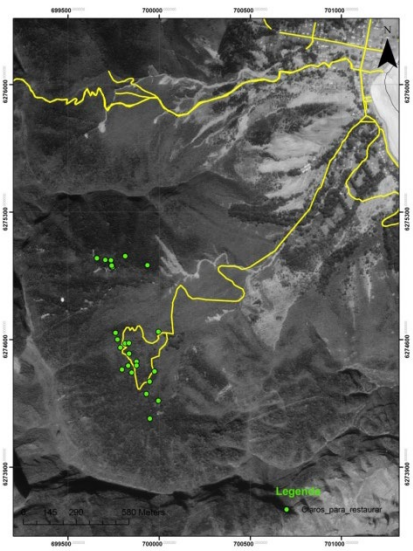

Figure 11. Project clearance of invasive plants Figure 12. Cleared sites in Year 1

4.2 Botanical records show successful re-establishment of 1 ha with Dendroseris litoralis (20*), Rhaphihamnus venustus (30), *Gunnera* ~~***tinctoria***~~ *bracteata* (20), Haloragis masatierrana (20) and Fagara mayu (10) produced by the nursery, by year 3. *minimum number re-established. **Baseline**: 0ha of native forest cleared and restored prior to project. **Progress**: A change request to replace *Gunnera tinctoria* with *G. bracteata* was accepted, as collecting seeds of *G. tinctoria* was taking longer than anticipated. The project evolved from focusing on just the five priority species to a more complex replanting strategy involving many more native species. Field records show 1842 individual trees, 551 shrubs and 638 ferns, representing 17 native species, were planted in an area of 1.01 ha (see Figure 13 for examples of replanting activities). All of the seedlings had been produced at the nursery. Of the project's five priority species the following numbers were planted: *D. litoralis* 188, *R. venustus* 363, *G. bracteata* 452, *F. mayu* 94 and *H. masatierrana* 29. The seedlings in the cleared areas were fenced to protect them from rabbits and their growth and establishment, plus any encroachment by invasive plants, monitored by park officers (this will continue beyond project-end). Field observations would suggest the native species are establishing well, however this is still a relatively early stage. In addition, 102 seedlings of *D. litoralis* were distributed amongst the RCI community, including the school, as a means of passive restoration of this IUCN critically endangered plant.

Figure 13. Planting of native species into cleared areas of native forest

Output 5. Beneficial plant-microbe complexes understood, and microbes produced for re-establishment activities; species conserved at INIA's Genetic Resources facility

5.1 Records of microbial complexes for key native plants. **Baseline**: no microbial complexes have been isolated from the priority species. **Progress**: INIA led the microbial component of the project. In Years 1 and 2 their field records show they collected 204 soil samples from RCI, mainly from the root zones of native forest species and including all five of the project's priority species. INIA's laboratory records show that 340 isolates of microorganisms were obtained from the samples (see Figure 14 for examples of isolations). The INIA team was selective with regards their groups of interest and their records show the following numbers were obtained: growth promoting bacteria 90 isolates, insect-killing fungi 123, nematode-killing fungi 56, mycopathogens 46, plant pathogens 17 and endophytic fungi 8. A summary report 'INIA microbial report' (as a Powerpoint presentation) is provided as a separate attachment.

Figure 14. Microbial isolates collected from root zones of native RCI plant species. L-R: insect-killing fungi, nematode-killing fungi, growth promoting bacteria

5.2 Records of conserved and characterised microbial diversity. **Baseline**: no microbial complexes have been isolated from the priority species hence there existed no records of conservation and characterisation. **Progress**: The microbial isolates obtained from RCI were cryopreserved at Chile's National Microbial Resources Bank on mainland Chile. Records from the bank show that all bar one of the isolates have been cryopreserved. Characterisation of isolates got underway in Year 3 but this was a significant delay and meant that a number of the microbial groups were not pursued any further (e.g. the nematode-killing fungi and plant pathogens). The number of organisms isolated from the soil samples was higher than expected and took longer to process and identify. A change request was accepted to modify the log frame. Characterisation primarily focused on aspects relevant to growth promotion; a scientific paper is in preparation and a copy will be made available to the Darwin Initiative once agreed for publication and general characterisation details are provided in the Powerpoint presentation from 5.1.

5.3 Improved plant propagation through the use of microbial amendments. **Baseline**: no studies on the promotion of plant growth by RCI microbes. **Progress**: This part of the project was again delayed as it took the project team some time to collect sufficient numbers of seeds for lab trials (the bulk of collected seeds went straight to the bank – only when there was an excess could they be sent to the INIA lab). In the meantime the INIA team used tomato as a model plant and investigated a number of growth promoting bacteria from RCI, as seed treatments. Subsequently these trials were reproduced but on one RCI native species *Solanum fernandezianum* when seeds finally arrived. The results using tomato plants were promising and, although the tests with *S. fernandezianum* have yet to be completed, visual inspection would suggest similar with the RCI plant (Figure 15).

Figure 15. Visual inspection of trails using growth promoting bacteria on germination of *Solanum fernandezianum.* L = control (14 seedlings), R = bacteria (26 seedlings)

3.2 Outcome

Project outcome: Improved seed-bank and nursery facilities, with conserved soil microbiota, enable the protection of RCI native plants and restoration of five important species to 1 ha (N.B. Darwin project level)

Indicator 1. 50% (minimum) of RCI's native flowering species and 50% (minimum) of known non-flowering vascular species stored as seed or in culture in the new seed-bank, by Year 3

Seed bank records show that >50% of RCI's native species (27% at the archipelago level) have been stored in the new seed bank, including four IUCN critically endangered species, three IUCN vulnerable species and all five of the project's priority species.

Indicator 2. 100% increase in production capacity of healthy planting stock at the RCI nursery by Year 2, by enlarged facilities by Year 1 and more efficient throughput by Year 2

This indicator was modified via a change request (the word 'healthy' inserted) in Year 2 to reflect an emphasis on quality not just quantity of nursery plants. INIA plant pathologist Dr France reviewed nursery production in Year 1 and recommended a number of best practices which were implemented (Section 2.3). A production unit specific for ferns was purchased and installed (Section 2.1). Nursery production records (Table 1 in Annex 6) show approximately 8000 individual plants were produced at the nursery and fern unit combined, representing 51 native species. There were no nursery records pre-project however an inventory showed around 3000 specimens representing 36 species were in propagation at the time, of which many were in bad health.

Indicator 3. Native plant species: *Dendroseris litoralis* (20*), *Rhaphihamnus venustus* (30), *Gunnera* ~~***tinctoria***~~ *(bracteata*) (20), *Haloragis masatierrana* (20) and *Fagara mayu* (10) re-established in 1 ha of RCI by Year 3. *minimum number re-established

This indicator was adjusted at the start of Year 2 with *Gunnera tinctoria* being replaced by *G. bracteata* as a priority species. Seed bank records show all five species were collected and stored in the new seed bank by project end. Nursery records show all five were grown in the nursery and 1126 individuals were subsequently planted in cleared areas of native forest. One of the priority species was distributed amongst the local community (102 specimens).

Indicator 4. Three project staff and 10 citizen scientists trained in production and maintenance activities at the nursery and seed-bank by Year 1

Records show numbers of people attending the following courses were: Collection and ex-situ conservation of seeds 16; Record keeping for seed banks 15; A fortnight of evening courses on various themes 21; The use of GPS 15. In total 15 project staff (primarily CONAF park officers) and 6 local citizens received training.

Indicator 5. Microbial complexes associated with five RCI species (as above) deposited in genetic resources collection by Year 2; complexes of 50% (minimum) of RCI native flora deposited by Year 3

A change request was accepted to modify the indicator from 50% of RCI's native species to just 2%, as over 300 microbes from the project's target groups were obtained in just two surveys and the group decided to focus on these microbes rather than searching for more. The project obtained 340 microbes in total (see Section 5.1 for breakdown) with all but one cryopreserved at Chile's National Microbial Resources Bank.

In conclusion: the project team feel the project achieved its intended outcome.

3.3 Impact: achievement of positive impact on biodiversity and poverty alleviation

Impact statement from logframe: Native biodiversity on JFA is substantially conserved through a programme of invasive species control and habitat restoration (N.B. programme level)

The Darwin project was a component of an invasive species management programme in the Juan Fernández Archipelago, of which RCI is the biggest island. Project and non-project organisations have been systematically removing invasive plants from RCI native forest. The Darwin project has enabled the conservation, propagation and replanting of native species in these cleared areas. The project contributed to the clearance of 2.5 ha of invasive species; it established a permanent seed bank, renovated the RCI laboratory and co-financed the purchasing of a controlled fern propagation unit. The project implemented best practice within the RCI nursery, trained staff on plant conservation and propagation and produced various extension materials to support the training. Chile's National Seed Bank (on mainland Chile) has agreed to conserve and curate a duplicate RCI seed collection beyond project end, which is essential as a back-up resource. The project collected and stored over 50% of RCI's native flora, including a number of critically endangered and vulnerable species. The renovated nursery has grown the project's five priority plants species (amongst a number of others) and, started a programme of native forest replanting in a relatively small area of land, as proof of concept for larger-scale replanting at the programme level. At the programme level it is expected that the enhanced technical capacity of local staff and improved infrastructure will support the restoration of approximately 30 sq km of the archipelago by 2033. There is however the important assumption that the Chilean Government will continue its support for RCI restoration activities over the next decade.

Poverty alleviation was not the primary objective of this proposal. Environmental de-pauperisation was mentioned in the project proposal as it is often symptomatic of economic poverty and it was felt that saving RCI's unique biodiversity would have a positive effect on the environment in which the RCI residents live. Whether this has been the case is hard to gauge, although project open days were well attended and RCI school children seemed enthused when invited to see project activities (see Section 5 on sustainability and legacy). The longer-term, wider programme's success, in restoring native plants and associated biodiversity to the archipelago, could help retain and increase tourism on RCI. It is feasible that some beneficial soil microbes obtained and characterised during the project will have useful commercial potential that can be exploited, although this is not being claimed as a primary output. To note however, the project has struggled with clarity on Chile's position on ABS and therefore the team is reluctant to pursue any commercial exploitation, at this moment. The project organised an ABS seminar in Santiago in Year 2 which was attended by various stakeholders including representatives from three Chilean ministries, intellectual property lawyers, the CABI Regional Director for Latin America and the Head of the World Federation for Culture Collections.

4 Contribution to Darwin Initiative Programme Objectives

4.1 Contribution to Global Goals for Sustainable Development (SDGs)

The project made a direct contribution to SDG 15 'Protect, restore and promote sustainable use of terrestrial ecosystems..'. In particular activities contributed to: 15.2 by planting around 1800 native plants in cleared areas of forest; 15.5 by storing (in the new seed bank) 58 species of native plant, of which four are critically endangered; 15.6 by organising a seminar on Nagoya and ABS which was attended by around 100 people (although only by unofficial head count) including researchers, intellectual property lawyers, biodiversity officers and Government officials; and 15.8 by clearing approximately 2.5 ha of invasive species from RCI native forest.

4.2 Project support to the Conventions or Treaties (CBD, CMS, CITES, Nagoya Protocol, ITPGRFA))

Nagoya Protocol on ABS: The project co-organised a Nagoya seminar with Chile's Ministry of Economy, Promotion and Tourism. The half-day seminar was held at the National Institute of Industry Property (INAPI) in the capital Santiago, Chile. The seminar included presentations on i) ABS policy and practice by CABI's Director for Biological Resources, ii) a case study on implementing biodiversity legislation in Brazil by CABI's Regional Director for Latin America and iii) efforts of the Darwin project to rescue and restore RCI's genetic resources by INIA's Director of Microbial Resources. The seminar was an open-invite and was attended by around 100 people (head count, no official attendance record was made); it generated good discussion on issues of intellectual property rights, access to genetic resources and Chile's ABS policy (of note Chile is yet to ratify the Nagoya Protocol). The Director of INAPI introduced the seminar and highlighted how important it is that Chile embraces the Nagoya Protocol and establishes national standards/procedures for accessing and sharing genetic resources. Eileen Frodden Kelly, a legal advisor at INAPI who helped organise the seminar, said it opened opportunities and provided ideas of how Chile should shape their response to the Nagoya Protocol. The seminar was filmed for use by INAPI lawyers. See Figure 19 in Annex 6 for full seminar programme.

CBD: The project contributed to CBD Article 9 'ex-situ conservation of biodiversity' through its collection and conservation of native RCI plants, Article 10 'sustainable use of native biodiversity' through its support of improved nursery facilities and best practices for producing planting stock, Article 8 'in-situ conservation of biodiversity' through its replanting of native species and Article 12 'ex-situ conservation of biodiversity' through its complementary scientific and technical training for park officers and local RCI citizens. The project partner MMA is the focal point for the CBD in Chile (MMA also sits on the CITES and CMS National Committees, in Chile) was present on many of the field visits to RCI and all the planning and review meetings. MMA reviewed this report prior to submission.

4.3 Project support to poverty alleviation

Poverty alleviation was not the primary objective of this (Defra) Darwin project, however the project did run evening classes on tourism for local residents, to help them pursue this as a possible income generator (see Table 3 in Annex 6). There could be minor employment benefits from the project as restoring native plants and associated biodiversity to the archipelago could help increase tourism. From a non-monetary perspective, as above in Section 3.3, the saving of RCI's unique biodiversity will have a positive effect on the environment in which the RCI community live.

4.4 Gender equality

There was very little planned regarding gender equality; all that can be reported is that any opportunities for local citizens to participate in project activities, including the means of advertising activities, did not discriminate against age or gender.

4.5 Programme indicators

- **Did the project lead to greater representation of local poor people in management structures of biodiversity?**

Whilst project open days and training sessions were open to all RCI residents this has not led to greater representation of local people in management structures.

- **Were any management plans for biodiversity developed?**

A plan for selecting and planting cleared areas of rci native forest was developed by the team and is provided as a separate attachment.

- **Were these formally accepted?**

Yes by the administrating authority for the RCI National Park (CONAF)

- **Were they participatory in nature or were they 'top-down'? How well represented are the local poor including women, in any proposed management structures?**

The restoration plan was led by CONAF, in consultation with Oikonos field staff residing on RCI.

- **Were there any positive gains in household (HH) income as a result of this project?**

A new project officer role on RCI was created for the duration of the project however this role ended when the project ended

- **How many HHs saw an increase in their HH income?**

One but temporarily, see above

- **How much did their HH income increase (e.g. x% above baseline, x% above national average)? How was this measured?**

This was not measured

4.6 Transfer of knowledge

There were a number of media articles relating to the project, including a YouTube film made by the project team and an interview for national Chilean television. Probably the two most significant examples of knowledge transfer to practitioners and, to a lesser extent, policy makers was i) a book being produced on RCI habitat restoration (see Section 3.2), scheduled for publication early 2019 and ii) host country lead Victor Lagos and project officer Felipe Saez (the officer stationed on RCI for project duration) were invited to speak at three Chilean congresses on habitat protection and restoration (for details see Annex 5).

Did the project result in any formal qualifications?

No formal qualifications were intended or achieved

4.7 Capacity building

As per 4.6 above, Victor Lagos and Felipe Saez (both male) were invited to speak at three national congresses on habitat protection and restoration. Although the feedback from these congresses was from Victor and Felipe themselves, it would appear their talks were well received and would have therefore elevated their status within the field of habitat protection.

5 Sustainability and Legacy

Project partners with permanent staff on RCI, namely CONAF and Oikonos, made significant efforts to involve RCI's 700+ residents. This included invites to workshops, opening ceremonies (of the seed bank and fern unit) and general project open-days. There were regular meetings

with the RCI Mayor and notice boards were put up around the town detailing latest project activities. There were several open-days for children from RCI's school, in which the children were given 'fun' activities at various project locations, e.g. growing plants at the nursery and helping to plant seedlings in the native forest (see Figure 16). At a higher level there was a visit to RCI by senior representatives from the Ministry of Agriculture and the Ministry of the Environment. The INIA Regional Director attended a project event held at INIA's Microbial Resources Bank during which he gave an interview for national Chilean television and he stressed the value of the project and Darwin's support (see Figure 17). From a more concrete legacy perspective the project has provided new and improved facilities on RCI to help conserve and restore biodiversity, namely the new seed bank and the much improved nursery and adjoining nursery. CONAF has confirmed its long-term commitment to the operation and maintenance of these facilities; they will continue to fund 15-20 park officers on RCI for which biodiversity conservation and habitat restoration will be priority. The project's original planned exit strategy remains valid; at project-end there is now sufficient capacity, infrastructure and commitment on RCI to enable propagation and replanting activities to continue for the duration of the larger restoration programme. CABI's role will not continue after the Darwin Initiative project, unless other funding is obtained, instead the work will be done by the Chilean partners. To note, there has not been any direct impact on policy in the host country. A new project officer role was created for the duration of the project however the role has now ended. There was never any intention that this role would continue beyond project-end and the applicant was made fully aware of this at the interview stage.

Figure 16. The project organised a number of open-days for local RCI school children

6 Lessons learned

The isolated nature of RCI was a challenging environment to work in/with. Several key decisions in the early stages helped the project achieve its objectives and deserve note: during the preparation of the proposal the project lead (CABI) included a project partner (INIA) with which they had a strong track-record of excellent project delivery. INIA lead on deciding what other Chilean partners to include, directing CABI directed to CONAF and specifically Victor Lagos who became our host country lead. Victor's expertise in habitat protection (he previously worked as a park officer on Easter Island) as well as his enthusiasm and general project coordination proved invaluable. Furthermore, his reporting was never late. At the project inception meeting it was unanimously agreed that the project should have someone based permanently on RCI rather than trying to manage activities on RCI remotely. This wasn't in the

original plan but proved an excellent decision. CONAF is continuously dealing with natural disasters in its national parks (earthquakes, volcanic eruptions, wild-fires, etc) and at times this pulls staff away from other activities, so having someone out on the island (ring-fenced) meant they were safe from mainland interruptions. Although to note, on a down side, the hiring and then relocation of the officer took several months which led to a delay in achieving several key objectives for Year 1 (although the project did catch-up).

6.1 Monitoring and evaluation

The project manager was responsible for M&E throughout the project. The M&E process was one of continuous, systematic monitoring of activities, which included internal monitoring by a project board. The board was appointed by CABI and included CABI's Regional Director for South America, CABI's liaison officer for Chile and the Centre Director of CABI-UK. CONAF became the primary in-country support for M&E even though MMA was originally assigned this role; this came about quite naturally due to CONAF's greater participation in project activities. CONAF coordinated all internal 6- and 12-monthly reporting from Chilean partners and facilitated all project planning and review meetings in Chile. CABI's Regional Director for South America spoke with Victor Lagos via Skype/Zoom on a number of occasions and visited RCI in Year 2 to meet with the team and senior representatives from Chilean Government. The project was monitored as individual work packages representing the main project outputs, namely facilities (seed bank and nursery structures), capacity building/training, project publicity, seed collection and plant propagation, soil microbiology and replanting. The delivery of each work package was managed, monitored and evaluated as a unit, enabling any changes to the work plan, for example the delays to nursery improvements, to be recognised and suitably controlled. All in all the M&E structure worked well. Three change requests were submitted and accepted during the project. The first was the re-allocation of funds between partners to enable a full-time officer to be stationed on RCI; the second was a change to the milestones for the microbiology work package, moving the focus to fewer, selected microbes rather than searching for more; the third was changing one of the five priority species for replanting. The Darwin annual reviews were valuable and brought to light a number of points which, when addressed, brought improvements to both the implementation and monitoring of the project. These included changes to the log frame, namely making it SMARTer, which give the project a more robust means of verification.

6.2 Actions taken in response to annual report reviews

The questions and outputs from each independent review was an agenda item at each annual planning and review meeting, which were attended by all project partners, with the exception of Oikonos who were briefed later via Skype.

Issues and responses to note include:
'Project Indicators should be revisited and revised to ensure they are SMARTer, and that baselines are included': This was addressed and a revised log frame was presented in the Year 2 annual report.

'Include a comment on the merit/disadvantages of breaking up the 1 ha of restored forest into 26 parcels. Is the ecological range of the selected priority species known? Is it necessary to have plots spread over a range of eco-zones? Why is the target restoration area so modest?': The project team produced a restoration strategy plan as a standalone resource which covered these points; it was provided as an attachment with the Year 2 annual point and again with this report.

'The project website mentions that this Darwin project will monitor the critically endangered, single-island endemic Juan Fernández Firecrown hummingbird (*Sephanoides fernandensis*), to assess the impact of replanting on this species (both the Red-Listed plants are food sources for the hummingbird: but this is not mentioned in the AR – or in the original Grant Application. What is the status of this activity?': Monitoring of the Firecrown hummingbird was not part of the log frame but was mentioned in the proposal as a possible indirect beneficiary of the project's work. As Oikonos planned to monitor bird populations as part of their other activities the project felt it was useful to keep up to date with their results. As it turned out the project was too small

in scale to have any measurable short term impacts on bird populations, plus a hurricane in 2016 had a bad impact on bird populations in general.

'Provide an update on progress with capacity building efforts to support the implementation of the Nagoya Protocol': This was provided in the Year 2 annual report as well as Section 4.2 of this report.

'Provide training notes for any courses run to support claims of technical capacity building of local staff': Attendance records are provided in Annex 6 and training material for the courses is available on request from the project team

7 Darwin identity

The team put considerable efforts into publicising the project during its three years. The Darwin Initiative was acknowledged throughout and, whenever possible, its logo used. Publicity included various website articles, presentations at seminars and conferences, including a Nagoya-ABS seminar in Santiago, a YouTube movie and an interview for Chilean national television (see Figure 17 for examples). CABI had partnered INIA in a previous Darwin so INIA was familiar with the Darwin Initiative; CONAF were not however they are now. All of the Chilean project partners, which included two Chilean ministries (Agriculture and, the Environment), were familiar with the Darwin Initiative as a previous CABI-Chile Darwin Initiative project was a considerable success in Chile and received wide national coverage. The only partner not familiar with Darwin was the US-Based Oikonos. The project was both a stand-alone project and, part of a larger habitat restoration programme, and it was publicised as such throughout the project. There was no Twitter/Flickr/Blog and the YouTube movie was not linked back to Darwin's social media accounts; this was an error and a link will be sent to the Darwin communications team.

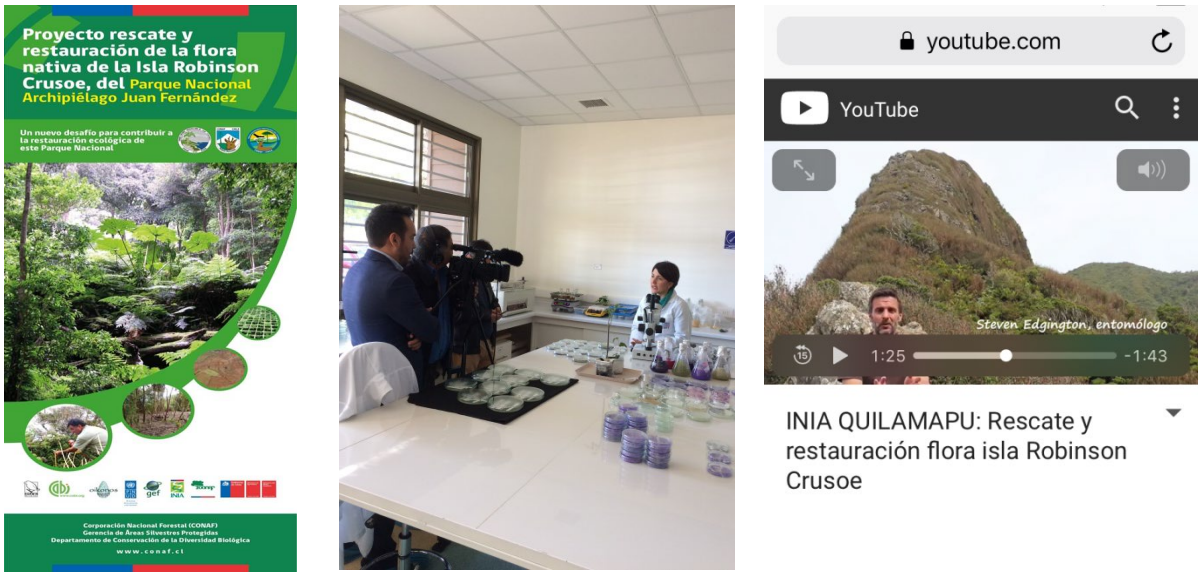

Figure 17. Various publicity activities for the project. L-R: project notice board on RCI, interview for national television and a YouTube movie.

8 Finance and administration

8.1 Project expenditure

Project spend (indicative) since last annual report	2017/18 Grant (£)	2017/18 Total actual Darwin Costs (£)	Variance %	Comments (please explain significant variances)

Staff costs (see below)			5.2	-
Consultancy costs			0	-
Overhead Costs			4	-
Travel and subsistence			8	-
Operating Costs			43	In total the project came in under budget over the three years. Overspend on operating costs in Yr 3 reflects late partner claims on underspent funds from previous years (approx £1000). Approx £500 for national travel was instead accounted for in T&S
Capital items (see below)			0	-
Others (see below)			132	Audit costs of £1500 accounted for in Others in Y3. There were also late/slow invoices from partners
TOTAL				

Staff employed (Name and position)	**Cost (£)**
Steve Edgington: Project Lead	
Jorge Castro: Project Scientist	
Cecilia Santelices: Project Scientist	
Victor Lagos: Host-country Lead	
Javiera Meza: Project Officer	
Felipe Saez: Project Officer	
Peter Hodum	
TOTAL	

Capital items – description	**Capital items – cost (£)**
NA	
TOTAL	

Other items – description	**Other items – cost (£)**

Publicity material Consumables	
TOTAL	

8.2 Additional funds or in-kind contributions secured

Source of funding for project lifetime	Total (£)
CABI (reduced overheads)	
INIA (staff and consumables)	
Oikonos (primarily staff cover)	
MMA (staff)	
CONAF (staff and national travel)	
Chilean Institute of Ecology and Biodiversity (purchase of fern facility)	
TOTAL	

Source of funding for additional work after project lifetime	Total (£)
NA	
TOTAL	**0**

8.3 Value for Money

On the whole we believe the project was good value for money. The project Outcome was achieved on budget and, a number of indicators surpassed, e.g. the number of specimens replanted of the five priority species. Some cost saving applications included: instead of building a new structure for the seed bank a shipping container was used as the outer shell, obtained at a considerably lower price than a complete new-build; Skype and Zoom was used on numerous occasions for meetings within country and between countries, saving on travel costs; the fern propagation unit was purchased with matched funding from the Chilean Institute of Ecology and Biodiversity; and a number project partners gave considerable matched funding for their staff time, INIA in particular.

Annex 1 Project's original (or most recently approved) logframe, including indicators, means of verification and assumptions.

Note: Insert your full logframe. If your logframe was changed since your Stage 2 application and was approved by a Change Request the newest approved version should be inserted here, otherwise insert the Stage 2 logframe.

Project summary	Measurable Indicators	Means of verification	Important Assumptions
Impact: Native biodiversity on JFA is substantially conserved through a programme of invasive species control and habitat restoration (N.B. programme level)			
Outcome: Improved seed-bank and nursery facilities, with conserved soil microbiota, enable the protection of RCI native plants and restoration of five important species to 1 ha (N.B. Darwin project level)	1. 50% (minimum) of RCI's native flowering species and 50% (minimum) of known non-flowering vascular species stored as seed or in culture in the new seed-bank, by year 3. Pre-project records show 17% of native species in storage and four of the five priority species, although quality not known 2. 100% increase in production capacity at the RCI nursery by year 2, by enlarged facilities by year 1 and more efficient throughput by year 2. Current nursery capacity approx. 3000 plants, including all five priority species, however many in bad health. 3. Native plant species: *Dendroseris litoralis* (20*), *Rhaphihamnus venustus* (30), *Gunnera bracteata* (20), *Haloragis masatierrana* (20) and *Fagara mayu* (10) re-established in 1 ha of RCI by year 3. *minimum number re-established 4. Three project staff and 10 citizen scientists trained in production and maintenance activities at the nursery and seed-bank by year 1. Present	1. Seed-bank log book; botanical survey records for RCI 2. Nursery production records 3. Botanical survey records for RCI 4. Staff training records 5. Resource collection records; INIA research records	1. Natural disasters, such as earthquakes and tsunamis do not disrupt nursery and seed bank facilities. These facilities to be situated above the height of the areas affected by the 2010 tsunami. 2. Local communities and MJFA remain open and committed to working on the project; representatives from both will be on a project steering committee, to ensure (and gauge) their engagement 3. Chilean Government maintains support for the project after 2018 4. Biological control agents work as expected from relevant experience (N.B. programme level)

	trained staff = 1 5. Microbial complexes associated with five RCI species (as above) deposited in genetic resources collection by year 2. At present the collection contains no microbes from these species		
Outputs: **1**. Seed-bank established to conserve native RCI plant species	1.1 Physical presence of functioning seed-bank facility. Presently no seed bank exists (seeds simply stored on shelves at nursery), accompanying laboratory in bad state 1.2. Seed-bank and nursery records record show minimum of 50% native species conserved by year 3. Presently 17% of native species in storage 1.3. Seeds of five priority species passed to the nursery. Presently no transfer of seed from bank to nursery	1.1 Photo records: of facilities 1.2 Project records: accessions to seed-bank 1.3 Project records: nursery; photo records: of re-planting	Low proportion of plant species recalcitrant regarding seed storage CONAF remit of conserving biodiversity in JFA National Park remains 'Turnover' of local staff remains manageable
2. Improved nursery facility to ensure sufficient plant material available for 1 ha habitat restoration (assuming growth from re-established species as well)	2.1 Productive, protected floor space increased from 100 sq m to 150 sq m, open nursery field production to be doubled 2.2. Internal fittings and fixtures are modern and suitable for effective plant propagation. Presently in unsuitable state for modern production 2.3. Nursery records demonstrate improved production efficacy of native plants. Present capacity 3000 plants but many in bad health with heavy reliance on chemical pesticides	2.1 Project records: nursery; Photo records: of facilities 2.2 Photo records: of facilities 2.3 Project records: nursery and training and education; project video of breeding successes	Low proportion of plant species recalcitrant regarding seed storage CONAF remit of conserving biodiversity in JFA National Park remains 'Turnover' of local staff remains manageable

3. Enhanced technical capacity of local staff for propagation, storage and quality control of native plant species	3.1. Local working group on plant propagation established by year 1. Presently one person on RCI involved in plant propagation 3.2. Manual of plant propagation and quality control distributed to local staff by year 2. Presently no manual exists 3.3. Training notes demonstrate technical capacity building of local staff	3.1 Project records: training and education 3.2 Project notes 3.3 Project notes	CONAF remit of conserving biodiversity in JFA National Park remains 'Turnover' of local staff remains manageable
4. 1 ha of land cleared and five native plant species re-established	4.1. Field visits confirm 1 ha of land cleared since project start 4.2. Botanical records show, since project start, successful re-establishment of 1 ha with *Dendroseris litoralis* (20*), *Rhaphihamnus venustus* (30), *Gunnera bracteata* (20), *Haloragis masatierrana* (20) and *Fagara mayu* (10) by year 3. *minimum number	4.1 Project notes: field notes; photo records 4.2 Project notes: field notes on native species' presence; photo records	Low proportion of plant species recalcitrant regarding seed storage CONAF remit of conserving biodiversity in JFA National Park remains 'Turnover' of local staff remains manageable
5. Beneficial plant-microbe complexes understood, and microbes produced for re-establishment activities; species conserved at INIA's Genetic Resources facility	5.1. Records of microbial complexes for key native plants. Presently no records. 5.2. Records of conserved and characterised microbial diversity. Presently no records. 5.3. Improved plant propagation through the use of microbial amendments. Presently no records.	5.1 Project notes: laboratory notes on microbial associations 5.2 Project records: accessions to microbial collection 5.3 Project notes: laboratory and nursery notes on microbial associations	'Turnover' of local staff remains manageable

Activities (each activity is numbered according to the output that it will contribute towards, for example 1.1, 1.2 and 1.3 are contributing to Output 1)

Activity 1.1 Adaptations to botanical garden to establish seed bank facility
Activity 1.2 Seeds and spores obtained from native forest and conserved in seed bank (duplicate collection in separated facility/store)
Activity 1.3 Testing of seeds/spores at yearly interval to demonstrate efficacy of procedures
Activity 1.4 Release of seeds and spores for nursery production and/or direct seeding into cleared areas
Activity 1.5 Monitoring and evaluation, recording and dissemination of above

Activity 2.1. Adaptations to expand nursery ground space
Activity 2.2. Internal fittings and fixtures upgraded and improved
Activity 2.3 Key native species prioritised and propagated
Activity 2.4 Monitoring and evaluation, recording and dissemination of above

Activity 3.1 Training in plant propagation, seed/spore preservation and quality control given to local staff and local citizens
Activity 3.2 Trialling of propagation techniques in nursery
Activity 3.3 Production of propagation and quality control guidelines
Activity 3.4 Monitoring and evaluation, recording and dissemination of above

Activity 4.1 1 ha of land manually cleared of invasive species
Activity 4.2 Seedlings of five native plant species replanted in 1 ha of cleared land
Activity 4.3 Testing of plant health and growth at intervals, to demonstrate successful re-establishment
Activity 4.4 Monitoring and evaluation, recording and dissemination of above

Activity 5.1 Determination of microbial constituents from native forest soils and associations with plant species
Activity 5.2 Production of selected microbes
Activity 5.3 Trialling of propagation techniques and interactions with microbial complexes in nursery
Activity 5.4 In-field trialling of microbial complexes with native plants, in 1 ha replanted area
Activity 5.5 Monitoring and evaluation, recording and dissemination of above

Annex 2 Report of progress and achievements against final project logframe for the life of the project

Project summary	Measurable Indicators	Progress and Achievements
Impact: Native biodiversity on JFA is substantially conserved through a programme of invasive species control and habitat restoration (N.B. programme level)		The two key components of this project were achieved, namely building local capacity for the conservation and propagation of native plants and a successful pilot of reintroducing native plants invaded areas. These achievements will support the restoration of approximately 30 sq km of the archipelago by 2033, at the programme level.
Outcome Improved seed-bank and nursery facilities, with conserved soil microbiota, enable the protection of RCI native plants and restoration of five important species to 1 ha (N.B. Darwin project level)	1. 50% (minimum) of RCI's native flowering species and 50% (minimum) of known non-flowering vascular species stored as seed or in culture in the new seed-bank, by year 3. Pre-project records show 17% of native species in storage and four of the five priority species, although quality not known 2. 100% increase in production capacity at the RCI nursery by year 2, by enlarged facilities by year 1 and more efficient throughput by year 2. Current nursery capacity approx. 3000 plants, including all five priority species, however many in bad health. 3. Native plant species: *Dendroseris litoralis* (20*), *Rhaphihamnus venustus* (30), *Gunnera bracteata* (20), *Haloragis masatierrana* (20) and *Fagara mayu* (10) re-established in 1 ha of RCI by year 3. *minimum number re-established 4. Three project staff and 10 citizen scientists trained in production and	1. 57% of RCI's native species (27% at the archipelago level) collected and in new seed bank. 2. Emphasis moved to healthy plants rather than solely an increase in production numbers. 3. Numbers planted were: *D. litoralis* 188, *R. venustus* 363, *G. bracteata* 452, *F. mayu* 94 and H. *masatierrana* 29. In addition, 102 seedlings of *D. litoralis* were distributed amongst the RCI community, including the school. 4. Workshops run on various themes including nursery production, seed collection and storage, biodiversity and restoration; in total 16 local park officers and six local citizens attended at least one workshop 5. 340 microbial isolates obtained from RCI soil samples, including from soils in and around all five priority species; all bar one cryopreserved at Chile's National Microbial Resources Bank.

	maintenance activities at the nursery and seed-bank by year 1. Present trained staff = 1 5. Microbial complexes associated with five RCI species (as above) deposited in genetic resources collection by year 2. At present the collection contains no microbes from these species	
Output 1. Seed-bank established to conserve native RCI plant species	1.1 Physical presence of functioning seed-bank facility. Presently no seed bank exists (seeds simply stored on shelves at nursery), accompanying laboratory in bad state 1.2. Seed-bank and nursery records record show minimum of 50% native species conserved by year 3. Presently 17% of native species in storage 1.3. Seeds of five priority species passed to the nursery. Presently no transfer of seed from bank to nursery	See 3.1 and Annex 6: A permanent, dedicated seed bank installed, fitted and operational by project end; target for seed conservation met; all five priority species moved from bank to nursery. Indicators remain appropriate
Activity 1.1 Adaptations to botanical garden to establish seed bank facility		RCI seed bank installed, fitted and operational. Suitable doors, windows and roof added, with electricity, storage cabinets, sinks, lab equipment all fitted. The bank was physically joined to the old RCI laboratory which was also renovated with new benches, sinks etc, to facilitate processing and germ testing of seeds. See Figures 2 and 3 in Section 3.1
Activity 1.2 Seeds and spores obtained from native forest and conserved in seed bank (duplicate collection in separated facility/store)		Pre-project seeds stored on nursery shelves assessed for viability and all discarded as viability was poor. Accession records (see Table 1, Annex 6) show the project collected 64 native plant species and put them into storage in the new bank. Species included four IUCN critically endangered species, three IUCN vulnerable species and all five of the project's priority species. The collection represents 57% of RCI's native species, 27% at the archipelago level. An agreement was established with Chile's National Seed Bank to conserve and curate a duplicate collection of seeds on mainland Chile with a small number of seeds were transferred in Year 3 (with the

		intention to create a full duplicate collection over the next several years).
Activity 1.3 Testing of seeds/spores at yearly interval to demonstrate efficacy of procedures		Quality control practices were established to test seed viability in storage. The tests revealed at least six species (including two priority species) had issues which will require careful observation.
Activity 1.4 Release of seeds and spores for nursery production and/or direct seeding into cleared areas		Nursery accession records (Table 1 Annex 6) show that all five project priority species were collected, stored in the seed bank and passed to the nursery during the project timeframe
Activity 1.5 Monitoring and evaluation, recording and dissemination of above		Project kick-off meeting on RCI, attendees included the CONAF Regional Director, local RCI citizens, the RCI Mayor and journalists. Six-month and 12-month Darwin reports submitted on time. Internal reporting from partners as per agreed schedule. Project homepage established on CABI website. Numerous media articles including a YouTube movie produced and a number of papers and posters presented at national and international conferences (see Annex 5). Project team met at least two times per year for review and planning.
Output 2. Improved nursery facility to ensure sufficient plant material available for 1 ha habitat restoration (assuming growth from re-established species as well)	2.1 Productive, protected floor space increased from 100 sq m to 150 sq m, open nursery field production to be doubled 2.2. Internal fittings and fixtures are modern and suitable for effective plant propagation. Presently in unsuitable state for modern production 2.3. Nursery records demonstrate improved production efficacy of native plants. Present capacity 3000 plants but many in bad health with heavy reliance on chemical pesticides	See 3.1 (Output 2). Nursery floor space increased including provision of a new fern propagation unit; internal fittings modernised; nursery production efficiency increased Indicator 2.1 not appropriate as emphasis was put on fern production rather than increasing total floor space, following feedback from replanting team
Activity 2.1. Adaptations to expand nursery ground space		A fern propagation unit was purchased with matched support from the Chilean Institute of Ecology and Biodiversity, fitted-out and was operational by Year 3 (see Figure 4 in Section 3.1). The unit has added an additional 18 sq m floor space to overall nursery area. The main nursery was renovated and upgraded (see Figure 5 in Section 3.1); a new roof was fitted and walls

		and doors (damaged by a series of storms over the years) were repaired. INIA's principal plant pathologist Dr France visited the RCI nursery to discuss best practice with staff and to assess plants being grown prior to project implementation. He found that pre-project the plants were in bad health due to poor sanitation, overcrowding and pests and diseases, which meant production efficiency was low; the nursery relied heavily on chemical pesticides with little consideration to ecotoxicology and resistance management; and the nursery's irrigation system was unsuitable for efficient production. Dr France drew-up plans for a new nursery layout for improved throughout (see Figure 6 in Section 3.1), which included a double-doored entrance and improved ventilation to help manage pests and diseases, together with better use of rainwater for irrigation.
Activity 2.2. Internal fittings and fixtures upgraded and improved		An inventory was prepared in Year 1 for new nursery fittings (see Table 2 in Annex 6) which were purchased and installed in Year 2. This was verified by an inspection by the project team
Activity 2.3 Key native species prioritised and propagated		*Gunnera tinctoria* has been replaced by *G. bracteata* as a priority species as collecting seeds of *G. tinctoria* was taking longer than anticipated. The nursery received seeds of the priority species and, according to nursery accession reocrds (see Table 1 in Annex 6) the following numbers were grown: *D. litoralis* 290, *F. mayu* 94, *R. venustus* 411, *G. bracteata* 488 and *H. masatierrana* 29.
Activity 2.4 Monitoring and evaluation, recording and dissemination of above		As per 1.5 above. In addition: There was a public opening ceremony for the fern unit which included activities for the local school children (see Figure 4 in Section 3.1).
Output 3. Enhanced technical capacity of local staff for propagation, storage and quality control of native plant species	3.1. Local working group on plant propagation established by year 1. Presently one person on RCI involved in plant propagation 3.2. Manual of plant propagation and quality control distributed to local staff by year 2. Presently no manual exists 3.3. Training notes demonstrate technical capacity building of local staff	See 3.1 (Output 3). Nursery and seed bank personnel trained; manual distributed and updated version in-progress (as book); training notes available on request. Indicators remain appropriate however there was no mechanism of formally assessing technical capacity of local staff, pre and post training.

Activity 3.1 Training in plant propagation, seed/spore preservation and quality control given to local staff and local citizens		Training activities were as follows (although please note not all were directly related to nursery and/or seed bank activities but have been listed against Activity 3.1 for better flow): 1) Collection and ex-situ conservation of seeds: led by INIA and attended by 16 local people. Course content included seed conservation, quality control of germplasm and record keeping; 2) Record keeping for seed banks. This was led by CONAF and attended by 15 local people; 3) A fortnight of evening courses on various themes, including plant propagation, management of invasive species, habitat restoration and aspects of tourism (for courses see Table 3 in Annex 6). Facilitated by various project and non-project partners. Advertised via social media, radio and fliers (see Figure 9 in Section 3.1) and open to all RCI residents. Twenty one people attended (see Figure 18 in Annex 6 for list of participants); 4) The use of global positioning system (GPS) when sample collecting. Led by CONAF and attended by 15 people.
Activity 3.2 Trialling of propagation techniques in nursery		Recommendations for Dr France's visit implemented: including adding compost to the potting media for healthier plants; stopping the sterilisation of potting media; more strategic use of fungicides post emergence; quarantining plants for 1 or 2 weeks prior to outside planting and a more considered approach to pesticide use in nursery, e.g. use of damage thresholds and resistance management
Activity 3.3 Production of propagation and quality control guidelines		Manual on the distribution, conservation and propagation of 31 endemic tree and shrub species (from vulnerable to critically endangered) produced and distributed to park officers and nursery staff (see Figure 10 in Section 3.1. for example layout; full manual is provided as a separate attachment to this report).
Activity 3.4 Monitoring and evaluation, recording and dissemination of above		
Output 4. 1 ha of land cleared and five native plant species re-established	4.1. Field visits confirm 1 ha of land cleared since project start 4.2. Botanical records show, since project start, successful re-establishment of 1 ha with Dendroseris litoralis (20*), Rhaphihamnus venustus (30), Gunnera bracteata (20), Haloragis masatierrana (20) and Fagara mayu	See 3.1. (Output 4). >1ha cleared; all five priority species replanted. Indicator 4.2. not appropriate as measuring 'successful establishment' not possible after a relatively short time from planting; should instead have read 'successful planting' (?)

	(10) by year 3. *minimum number	
Activity 4.1 1 ha of land manually cleared of invasive species		Field records show that 56 pockets of land were cleared, approximately 2.5 ha (see Figures 11 and 12 in Section 3.1). The project team produced a technical document detailing site selection for both clearance and replanting which is provided as a separate attachment to this report.
Activity 4.2 Seedlings of five native plant species replanted in 1 ha of cleared land		Field records show 1842 individual trees, 551 shrubs and 638 ferns, representing 17 native species, were planted in an area of 1.01 ha (see Figure 13 in Section 3.1 for examples of replanting activities). All of the seedlings had been produced at the nursery. Of the five priority species the following numbers were planted: *D. litoralis* 188, *R. venustus* 363, *G. bracteata* 452, *F. mayu* 94 and H*. masatierrana* 29. In addition, 102 seedlings of *D. litoralis* were distributed amongst the RCI community, including the school.
Activity 4.3 Testing of plant health and growth at intervals, to demonstrate successful re-establishment		The seedlings in the cleared areas were fenced to protect them from rabbits and their growth and establishment, plus any encroachment by invasive plants, monitored by park officers. Field observations would suggest the native species are establishing well, however this is still a relatively early stage.
Activity 4.4 Monitoring and evaluation, recording and dissemination of above		
Output 5. Beneficial plant-microbe complexes understood, and microbes produced for re-establishment activities; species conserved at INIA's Genetic Resources facility	5.1. Records of microbial complexes for key native plants. Presently no records. 5.2. Records of conserved and characterised microbial diversity. Presently no records. 5.3. Improved plant propagation through the use of microbial amendments. Presently no records.	See 3.1. (Output 5). Indicators remain appropriate
Activity 5.1 Determination of microbial constituents from native forest soils and associations with plant species		Field records show that 204 soil samples were analysed from RCI, mainly from the root zones of native forest species and, including areas under all five of the project's priority species. Laboratory records show that 340 microbial isolates were obtained (see Figure 14 in Section 3.1 for examples of isolations). The team was selective with regards the microbial groups they were isolating; lab records show the following numbers were obtained:

	growth promoting bacteria 90, insect-killing fungi 123, nematode-killing fungi 56, mycopathogens 46, plant pathogens 17 and endophytic fungi 8. A summary report 'INIA microbial report' (as a Powerpoint presentation) is provided as a separate attachment to this report.
Activity 5.2 Production of selected microbes	Small quantities of growth-promoting bacteria were produced in liquid media (lab trial quantities) primarily to provide inoculum for screening studies.
Activity 5.3 Trialling of propagation techniques and interactions with microbial complexes in nursery	Trials in the RCI nursery did not take place; instead all trials took place at the INIA laboratories. Activities relating to microbial trials were on the whole delayed. The main reason was that it took the project team some time to collect sufficient numbers of seeds for the lab trials (the bulk of collected seeds went straight to the bank – only when there was an excess could they be sent to the INIA lab). In the meantime the INIA team used tomato as a model plant and investigated a number of growth promoting bacteria from RCI, as seed treatments. Subsequently these trials were reproduced on only one RCI native species *Solanum fernandezianum* when seeds finally arrived. The results using tomato plants were promising and, although the tests with *S. fernandezianum* have yet to be completed, visual inspection would suggest similar with the RCI plant (see Figure 15 in Section 3.1)
Activity 5.4 In-field trialling of microbial complexes with native plants, in 1 ha replanted area	This did not take place. Lab trials are still taking place at INIA to establish the justification to take microbes out to the field on RCI
Activity 5.5 Monitoring and evaluation, recording and dissemination of above	

Annex 3 Standard Measures

We use these figures as part of our evaluation of the wider impact of the Darwin Initiative programme. Projects are not evaluated according to quantity. That is – projects that report few standard measures are not seen as being of poorer quality than those projects which can report against multiple standard measures.

Please quantify and briefly describe all project standard measures using the coding and format of the Darwin Initiative Standard Measures. Download the updated list explaining standard measures from http://darwin.defra.gov.uk/resources/reporting/. If any sections are not relevant, please leave blank.

Code	Description	Total	Nationality	Gender	Title or Focus	Language	Comments
Training Measures							
1a	Number of people to submit PhD thesis						
1b	Number of PhD qualifications obtained						
2	Number of Masters qualifications obtained						
3	Number of other qualifications obtained						
4a	Number of undergraduate students receiving training						
4b	Number of training weeks provided to undergraduate students						
4c	Number of postgraduate students receiving training (not 1-3 above)						
4d	Number of training weeks for postgraduate students						
5	Number of people receiving other forms of long-term (>1yr) training not leading to formal qualification (e.g., not categories 1-4 above)						
6a	Number of people receiving other forms of short-term education/training (e.g., not categories 1-5 above)						
6b	Number of training weeks not leading to formal qualification						
7	Number of types of training materials produced for use by host country(s) (describe training materials)						

Research Measures		Total	Nationality	Gender	Title	Language	Comments/ Weblink if available
9	Number of species/habitat management plans (or action plans) produced for Governments, public authorities or other implementing agencies in the host country (ies)	2	Chile	M	1.Informe técnico de actividades en Parque Nacional Archipiélago de Juan Fernández: Control de especies invasoras y revegetación de 1 ha en RCI. 2. Estrategia de restauración a pequeña escala en el Parque Nacional Archipiélago Juan Fernández.	Both Spanish	Provided as electronic attachments to report
10	Number of formal documents produced to assist work related to species identification, classification and recording.	1	Chile	M & F authors	Especies amenazadas del Archipiélago de Juan Fernández. Conservación, distribución y	Spanish	First version attached. An update with additional species will be sent to Darwin

					propagación		
11a	Number of papers published or accepted for publication in peer reviewed journals	1	Chile and UK	M & F authors	Rescate y restauracion de la flora native de la isla de Robinson Crusoe en el Parque Nacional Archipielago Juan Fernandez: avances y proyecciones.	Spanish	Biodiversidata 5: 40-51
11b	Number of papers published or accepted for publication elsewhere	0					
12a	Number of computer-based databases established (containing species/generic information) and handed over to host country						
12b	Number of computer-based databases enhanced (containing species/genetic information) and handed over to host country	0					
13a	Number of species reference collections established and handed over to host country(s)	1	Chile		Seed collection of RCI native plant species		
13b	Number of species reference collections enhanced and handed over to host country(s)	0					

Dissemination Measures	**Total**	**Nationality**	**Gender**	**Theme**	**Language**	**Comments**

Dissemination Measures		Total	Nationality	Gender	Theme	Language	Comments
14a	Number of conferences/seminars/workshops organised to present/disseminate findings from Darwin project work						
14b	Number of conferences/seminars/ workshops attended at which findings from Darwin project work will be presented/ disseminated.	13	Chile	M&F	Various	Spanish	See Annex 5 for conferences and Output 3 in Section 3.1.

Physical Measures		Total	Comments
20	Estimated value (£s) of physical assets handed over to host country(s)	£10000	New, permanent seed bank and fern propagation unit
21	Number of permanent educational, training, research facilities or organisation established	2	Permanent seed bank and fern propagation unit
22	Number of permanent field plots established	56	Areas of native forest cleared of invasive plants

Financial Measures		Total	Nationality	Gender	Theme	Language	Comments
23	Value of additional resources raised from other sources (e.g., in addition to Darwin funding) for project work	139392					In kind

Annex 4 Aichi Targets

Please note which of the Aichi targets your project has contributed to.

Please record only the **main targets** to which your project has contributed. It is recognised that most Darwin projects make a smaller contribution to many other targets in their work. You will not be evaluated more favourably if you tick multiple boxes.

	Aichi Target	Tick if applicable to your project
1	People are aware of the values of biodiversity and the steps they can take to conserve and use it sustainably.	✓
2	Biodiversity values have been integrated into national and local development and poverty reduction strategies and planning processes and are being incorporated into national accounting, as appropriate, and reporting systems.	
3	Incentives, including subsidies, harmful to biodiversity are eliminated, phased out or reformed in order to minimize or avoid negative impacts, and positive incentives for the conservation and sustainable use of biodiversity are developed and applied, consistent and in harmony with the Convention and other relevant international obligations, taking into account national socio economic conditions.	
4	Governments, business and stakeholders at all levels have taken steps to achieve or have implemented plans for sustainable production and consumption and have kept the impacts of use of natural resources well within safe ecological limits.	
5	The rate of loss of all natural habitats, including forests, is at least halved and where feasible brought close to zero, and degradation and fragmentation is significantly reduced.	
6	All fish and invertebrate stocks and aquatic plants are managed and harvested sustainably, legally and applying ecosystem based approaches, so that overfishing is avoided, recovery plans and measures are in place for all depleted species, fisheries have no significant adverse impacts on threatened species and vulnerable ecosystems and the impacts of fisheries on stocks, species and ecosystems are within safe ecological limits.	
7	Areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity.	✓
8	Pollution, including from excess nutrients, has been brought to levels that are not detrimental to ecosystem function and biodiversity.	
9	Invasive alien species and pathways are identified and prioritized, priority species are controlled or eradicated, and measures are in place to manage pathways to prevent their introduction and establishment.	
10	The multiple anthropogenic pressures on coral reefs, and other vulnerable ecosystems impacted by climate change or ocean acidification are minimized, so as to maintain their integrity and functioning.	
11	At least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes.	
12	The extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained.	
13	The genetic diversity of cultivated plants and farmed and domesticated animals and	

	of wild relatives, including other socio-economically as well as culturally valuable species, is maintained, and strategies have been developed and implemented for minimizing genetic erosion and safeguarding their genetic diversity.	
14	Ecosystems that provide essential services, including services related to water, and contribute to health, livelihoods and well-being, are restored and safeguarded, taking into account the needs of women, indigenous and local communities, and the poor and vulnerable.	
15	Ecosystem resilience and the contribution of biodiversity to carbon stocks has been enhanced, through conservation and restoration, including restoration of at least 15 per cent of degraded ecosystems, thereby contributing to climate change mitigation and adaptation and to combating desertification.	
16	The Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization is in force and operational, consistent with national legislation.	
17	Each Party has developed, adopted as a policy instrument, and has commenced implementing an effective, participatory and updated national biodiversity strategy and action plan.	
18	The traditional knowledge, innovations and practices of indigenous and local communities relevant for the conservation and sustainable use of biodiversity, and their customary use of biological resources, are respected, subject to national legislation and relevant international obligations, and fully integrated and reflected in the implementation of the Convention with the full and effective participation of indigenous and local communities, at all relevant levels.	
19	Knowledge, the science base and technologies relating to biodiversity, its values, functioning, status and trends, and the consequences of its loss, are improved, widely shared and transferred, and applied.	
20	The mobilization of financial resources for effectively implementing the Strategic Plan for Biodiversity 2011-2020 from all sources, and in accordance with the consolidated and agreed process in the Strategy for Resource Mobilization should increase substantially from the current levels. This target will be subject to changes contingent to resource needs assessments to be developed and reported by Parties.	

Annex 5 Publications

Provide full details of all publications and material that can be publicly accessed, e.g. title, name of publisher, contact details. Mark (*) all publications and other material that you have included with this report

Type * (e.g. journals, manual, CDs)	Detail (title, author, year)	Nationality of lead author	Nationality of institution of lead author	Gender of lead author	Publishers (name, city)	Available from (e.g. web link, contact address etc)
webpage	Rescuing and restoring the native flora of Robinson Crusoe Island, CABI 2016	UK	UK	F	CABI, Wallingford	http://www.cabi.org/projects/project/46827
webpage	Conaf liderará ejecución de proyecto de restauración ecológica en Juan Fernández, V.Lagos 2015	Chile	Chile	M	www.lignum.cl Santiago	http://www.lignum.cl/2015/08/18/conaf-liderara-ejecucion-de-proyecto-de-restauracion-fernandez/
webpage	CONAF liderará ejecución de proyecto de restauración ecológica en Juan Fernández, V.Lagos 2015	Chile	Chile	M	www.conaf.cl Santiago	http://www.conaf.cl/conaf-liderara-ejecucion-de-proyecto-de-restauracion-ecologica-en
webpage	El Parque Nacional Robinson Crusoe se somete a una restauración ecológica,	Chile	Chile	M	www.lignum.cl Santiago	http://www.lignum.cl/2015/08/20/el-parque-nacional-robinson-crusoe-se-somete-a-una-ecologica/

	V.Lagos 2015					
Seminar presentation	El rescate y la restauracion de la vegetacion native de la isla Robinson Crusoe V.Lagos 2016	Chile	Chile	Male		*As attachment
webpage	Seminario internacional abordará formas de acceder a beneficios que microorganismos generan en la sociedad, A. France 2017	Chile	Chile	Male		http://www.inia.cl/blog/2017/01/09/seminario-internacional-abordara-formas-de-accede microorganismos-generan-en-la-sociedad/
Seminar presentation	Seminario Internacional: Acceso Justo a Recursos Genéticos Microbianos A. France 2017	Chile	Chile	Male		http://www.uss.cl/blog/seminario-internacional-acceso-justo-recursos-geneticos-microb
You tube film	INIA QUILAMAPU: Rescate y restauración flora isla Robinson Crusoe A. France 2017	Chile	Chile	Male		https://www.youtube.com/watch?v=SFToST-cFSQ&t=
Symposium poster	Diversity of entomopathogenic fungi on Robinson Crusoe Island Ocares, Y.; Barra-Bucarei, L. &	Chile	Chile	Female	Symposium proceedings	http://www.controlbiologicochile.com/gallery/simposio%20chileno%20control%20biolog

	Carrasco J. 2016					
Symposium poster	Pathogenic fungi of sclerotia of Sclerotinia sclerotiorum isolated from soils of Robinson Crusoe island Santelices, C.; Carrasco, J.; Cisterna, V. & Barra-Bucarei, L. 2016	Chile	Chile	Female	Symposium proceedings	http://www.controlbiologicochile.com/gallery/simposio%20chileno%20control%20biolog
Seminar presentation	Política de acceso a los recursoso genéticos de INIA Fernando Ortega (2017)	Chile	Chile	Male		http://www.cchrgm.cl/img/05_ACCESO_RRGG_INIA-CHILE_FORTEGA.pdf
Seminar presentation	Patentamiento de microorganismos en Chile Carolina Garrido (2017)	Chile	Chile	Female		http://www.cchrgm.cl/img/04_BRGM_PATENTAMIENTO_MICROORGANISMOS_CGA
Seminar presentation	CABI América del Sur - Control Biológico. Implementación de programas de Control Biológico Yelitza Colmenarez 2017	Venezuela	UK	Female		http://www.cchrgm.cl/img/03_BRGM_ACCESO_RECURSO_GENETICOS_BRASIL_Y
Seminar presentation	Rescate y valorización del patrimonio microbiano del archipiélago Juan Fernández Andres	Chile	Chile	Male		http://www.cchrgm.cl/img/02_BRGM_RESCATE_Y_VALORIZACION_AFRANCE.pdf

	France 2017					
Seminar presentation	CABI and its international link for the protection and sustainable use of genetic resources: cases of microorganisms and shared benefit, D Smith 2017	UK	UK	Male		
Scientific publication	Rescate y restauracion de la flora native de la isla de Robinson Crusoe en el Parque Nacional Archipielago Juan Fernandez: avances y proyecciones. Saez, F., Lagos, V., Meza, J., Leiva, I., France, A., Barra, L., Baeriswy, F., Silva, C., Hodum, P. & Edgington, S. 2017	Chile	Chile	M		Biodiversidata 5: 40-51
Congress presentation	El rescate y la restauracion de la vegetacion native de la Isla Robinson Crusoe: Integrando enfoques de conservacion active en un	Chile	Chile	M	Congress proceedings	

	ensayo de pequena escala. V Lagos 2016					
Congress presentation	Estrategia de restauracion ecologica multiscale en claros de bosque native en el sector Plazoleta el Yunque al interior del Parque Nacional AJF. F. Saez 2016	Chile	Chile	M	Congress proceedings	
Congress presentation SNAPSE	El rescate y la restauracion de la vegetacion native de la Isla Robinson Crusoe: Integrando enfoques de conservacion active en un ensayo de pequena escala. V Lagos 2016	Chile	Chile	M	Congress proceedings	
Congress presentation SNAPSE	Estrategia de restauracion ecologica multiscale en claros de bosque native en el sector Plazoleta el Yunque al interior del Parque Nacional AJF. F. Saez 2016	Chile	Chile	M	Congress proceedings	

Congress presentation RED	Rescate y restauracion de la flora native de la isla de Robinson Crusoe en el Parque Nacional Archipielago Juan Fernandez: avances y proyecciones, V Lagos 2017	Chile	Chile	M	Congress proceedings	
webpage	Iniciativa Darwin avanza en restauración de flora nativa del PN Archipiélago Juan Fernández. Journalist 2018	Chile	Chile	NA	www.conaf.cl Santiago	http://www.conaf.cl/iniciativa-darwin-muestra-importantes-avances-en-restaura nativa-del-parque-nacional-archipielago-juan-fernandez

Annex 6

Table 1. Accession records for RCI seed bank and nursery (2015-2018). Blue = project priority species in log-frame; Yellow = IUCN critically endangered; Green = IUCN vulnerable

Plant species	Nursery production (individual plants)
Abutilon striatum	186
Adiantun chilense	72
Afoglosum scuamatum	
Altropsteris altoscandens	
Apium fernandezianum	392
Asplemium inaequalifolium	
Azara serrata	168
Berberis corimboza	168
Blechnum cordatum	
Blechnum cycadifolium	18
Blechnum hastatum	134
Boehmeria excelsa	582
Carex berteroniana	11
Bolletia spartoides	1
Chenopodium nesodendron	188
Chenopudium crusoeanum	643
Coprosma oliveri	540
Coprosma pyrifolia	14
Cuminia eriantha	280
Dendroseris gigantea	30
Dendroseris litoralis	290
Dendroseris micrantha	260
Dendroseris marginatha	91
Dendroseris nerifolia	227
Dendroseris pruinata	181
Dendroseris regia	24
Dicksonia berteroana	
Dicksonia externa	
Drymis confertifilia	
Eringyum bupleuroides	26
Escallonia callcotiae	40
Fagara mayu	94
Gunnera bracteata	488
Haloragis masatierrana	29
Haloragis santaclarae	
Histiopteris insisa	36
Hypolepis poeppigii	50
Juania australis	130
Juncus procerus	406
Lactoris fernandezianum	1
Libertia chilensis	98
Lophosoria cuadripinnatha	
Megalastrum macrosorum	
Margyracaena skottsbergii	6
Margyricarpus digynus	1
Myrceugenia fernandeziana	122
Nicotiana cordifolia	112
Nicotiana cordifolia sub.sanctaclarae	208
Ochagavia elegans	
Peperomia berteroana	145
Peperomia fernandeziana	2
Pteris berteroana	404
Pteris chilensis	116
Rhaphithamnus venustus	411
Robinsonia gallana	35
Robinsonia gracilis	8
Robinsonia masafuerae	2
Rumohra berteroana	18

Selkirkia berteroi	
Solanum fernandezianum	268
Sophora fernandeziana	166
Sophora fernandeziana var.reedeana	30
Spergularia confertiflora	23
Thirsopteris elegans	
Ugni selkirkii	3
Wahlenbergia larrainii	105

Table 2. Inventory for upgrade of nursery facilities.

Núm	ítem	Código	Dimensión (mm)	Cantidad
1	Pino tratado cepillado	192581	20x30x3200	250
2	Pino tratado cepillado	108808	20x60x3200	25
3	Rollizos impregnados	maderas concón	80x3.500	3
4	Bigas de pino	192597	20x100x3200	2
5	Tablas de pino tratado (platabanda)	192584	10x100x3200	16
6	Puerta entrada, sector trabajo y sector invernadero	186280	650x2000	3
7	Pernos largos + tuerca y golillas	na	3/4x9"	7
8	Ventana corredera de aluminio	186440	910x500	10
9	Policarbonato alveolar	119428	4x2100x5800 mm	13
10	Set canaleta rejillas	726053	1 m	18
11	Malla mosquetera plastificada	402630	1.03x1000	2
12	Malla galvanizada electro soldados Imchalam	119029	1.850x5000	3
13	Malla galvanizada electro soldados Imchalam	119027	1.850x3000	1
14	Silicona Sikasil ac	640347	1 tubo	15
15	Clavo 3"	145700	3"	4
16	Clavo 4"	147431	4"	6
17	Clavo 5"	147431	5"	10
18	Tornillo auto perforante con cabeza hexagonal	892237	12x2	5
19	Cemento preparado seco Presec	878471	na	500

Table 3. The schedule for a series of evening courses on RCI. Courses were open to all and were attended by 21 people in total

Week	Time	Monday	Tuesday	Wednesday	Thursday	Friday
1	18-19h	Course introduction	Importance of RCI's native flora and fauna	Invasive species and threats to biodiversity	Control and management of invasive species	Restoring native flora
	19-20h	Concepts of biodiversity	Conserving and propagating native species	Processes of biological invasions	Restoring native forest	Importance of ecosystem services
2	18-19h	Free		Types of customers and communication as a tourist guide	Managing groups as a tourist guide	Production of goods for tourists
	19-20h			Behaviour of a tourist guide	Adventure tourism	Tourism protocols
3	18h	Course evaluation and social event				

PROGRAMA
SEMINARIO INTERNACIONAL

ACCESO JUSTO Y EQUITATIVO DE BENEFICIOS ASOCIADOS A LOS RECURSOS GENETICOS MICROBIANOS.
Martes 17 de enero del 2017, a partir de las 9:00 horas.
Auditorio de INAPI. Av. Libertador Bernardo O'Higgins 194, piso 18, Santiago.

9.00 - 9.15	**Registro de participantes.**
9.15 - 9.30	**Palabras de Bienvenida.** **Director Nacional de INAPI, Sr. Maximiliano Santa Cruz.**
9.30 – 10.15	**CABI y su vinculación internacional para la protección y uso sustentable de los recursos genéticos: casos de microrganismos y beneficio compartido.** **David Smith. Director Recursos Biológicos de CABI, Reino Unido**.
10.15 - 10.35	**Rescate y valorización del patrimonio microbiano del archipiélago de Juan Fernández. Andrés France. Director Colección Chilena de Recursos Genéticos Microbianos, Instituto de Investigaciones Agropecuarias – INIA.**
10.35 - 10.55	**Acceso a los Recursos Genéticos Microbianos y protocolos de procedimiento en Brasil. Yelitza Colmenarez. Directora de CABI Brazil y Coordinadora Regional de Plantwise para Latino América y el Caribe, CABI.**
10.55 - 11.15	**Protección de los Recursos Genéticos Microbianos: Generación de una Linea Base Ambiental de Tapetes Microbianos presentes en Lagunas del Salar de Atacama, dela Región de Antofagasta.** **Paula Diaz, Min. Medio Ambiente. Did not attend**
11:15 - 11:35	**Patentamiento de microorganismos en Chile. Carolina Garrido, Examinadora de Biotecnología, INAPI.**
11:35 - 12:00	**Politica de acceso a Recursos Genéticos de INIA-Chile.** **Fernando Ortega, Coordinator de Programa Nacional de Recursos Genéticos de INIA**
11:35 - 12:00	**Consulta y Conclusiones**

Organizan: INIA - INAPI y CABI

Figure 19. Schedule for Nagoya/ABS seminar organised by the project in Santiago, Chile.

Annex 7 Darwin Contacts

Ref No	22-001
Project Title	Rescuing and restoring the native flora of Robinson Crusoe Island
Project Leader Details	
Name	Steve Edgington
Role within Darwin Project	Project Lead
Address	CABI, Bakeham Lane, Egham, Surrey TW20 9TY, UK
Phone	
Fax/Skype	
Email	
Partner 1	
Name	Victor Lagos
Organisation	CONAF
Role within Darwin Project	Host-country lead
Address	
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Email	
Partner 2 etc.	
Name	Andrés France
Organisation	INIA
Role within Darwin Project	Project Scientist
Address	
Fax/Skype	
Email	