



**PROGRAMME ON INNOVATION:
SMALL GRANTS PROJECTS THROUGH DIRECT ACCESS
MODALITY**

REQUEST FOR PROJECT FUNDING FROM THE ADAPTATION FUND

The annexed form should be completed and transmitted to the Adaptation Fund Board Secretariat by email or fax.

Please type in the responses using the template provided. The instructions attached to the form provide guidance to filling out the template.

Please note that a project must be fully prepared when the request is submitted.

Complete documentation should be sent to:

The Adaptation Fund Board Secretariat
1818 H Street NW
MSN P4-400
Washington, D.C., 20433
U.S.A
Fax: +1 (202) 522-3240/5
Email: afbsec@adaptation-fund.org



ADAPTATION FUND

PROGRAMME ON INNOVATION: SMALL GRANT PROJECT PROPOSAL

PART I: PROJECT INFORMATION

Country:	Chile
Title of Project:	Comprehensive multi-energy isolated system for community-based food security in the Chilean Patagonia
National Implementing Entity:	Chilean International Cooperation Agency
Executing Entity/ies:	Universidad Austral de Chile
Amount of Financing Requested:	249,900 USD

Project Background and Context:

Chile is one of the countries worldwide that has more vulnerabilities to climate change. Indeed, its main economic activities are strongly dependent on the availability of water and energy resources. In this context, the agricultural sector is one of the economic sectors more prone to be affected by climate change, putting at risk the food security of a large numbers of farmers and small communities whose main economic activity is the small-scale agriculture, usually located in remote/rural areas.

In this sense, the project aims at designing, sizing, and piloting a technological solution for small-scale agriculture in remote/rural areas that integrates different available local energy resources to cover both thermal and electrical needs. The solution should also incorporate technologies for water capturing and its efficient consumption, to guarantee the agricultural production despite the effects of water scarcity, changes in temperature, and rain regimes.

The project focuses on communities that have an economic activity related with food provision, so that the synergies between the community energy-needs and food provision can be covered holistically. Indeed, articulating the food production with its sustainable transformation (using local energy resources) and local commercialization is also considered in this proposal. In this way, we expect to diversify the economic activities of the benefited communities by adding value to their agricultural products, while adapting their economic activity to the effects of climate change.

Project Objectives:

The main objective of the project is to increase the adaptive capacity and to build resilience of small-scale agricultural producers in the face of the impacts of climate change and climate variability by developing a technological solution that facilitates the integration of diverse small and local energy resources to cover, simultaneously, the electrical and thermal, together with technologies for water capturing and its efficient consumption, to ensure the food provision of a pre-defined community.

To address the main objective, the following specific objectives are defined:

1. Enhance the resilience of small-scale agricultural producers of the south of Chile, vulnerable to climate change by identifying, adapting, and implementing appropriate technological solutions (e.g., greenhouses).
2. Strengthen energy and water independence of small-scale agricultural producers to mitigate the effects of climate change in their activities using local energy resources (including waste-to-energy approaches), the integration of water/rain capture technologies, and management systems for the efficient use of both energy and water, and therefore guarantee the food provision.
3. Identify alternatives for the diversification of the economic activities of communities of small-scale agricultural producers by adding value, in a sustainable way, to their local products and for defining strategies for their local commercialization in a context of climate change.
4. Improve the capacities at the territorial level for decision making and management of the implementation of adaptation measures and actions to address the effect of climate change and variability in small-scale agricultural production in the south of Chile.

Project Components and Financing:

Fill in the table presenting the relationships among project components, activities, expected concrete outputs, and the corresponding budgets. If necessary, please refer to the INSTRUCTIONS FOR PREPARING A REQUEST FOR PROGRAMME ON INNOVATION: SMALL GRANTS PROJECTS THROUGH DIRECT ACCESS for a detailed description of each term.

<u>Project Components</u>	<u>Expected Concrete Outputs</u>	<u>Expected Outcomes</u>	<u>Amount (US\$)</u>
<u>1. Socialization phase</u>	<u>Celebration of meetings with presentation of general ideal and team</u>	<u>Community engagement and creation of working group</u>	<u>5,000</u>
<u>2. Project definition</u>	<u>Identification of energy needs and renewable resources potential</u>	<u>Participative definition of resources, location, and uses</u>	<u>5,000</u>
<u>3. Project implementation</u>	<u>Installation of energy resources and control equipment</u>	<u>Identification of skills and services needed to deploy such projects</u>	<u>172,900</u>
<u>4. Consolidation phase</u>	<u>Adopted skills in the community to manipulate the system</u>	<u>Training program to extend the experience in other places</u>	<u>20,000</u>
<u>5. Project Execution cost</u>	<u>0</u>		<u>39,600</u>
<u>6. Total Project Cost</u>			<u>242,500</u>
<u>7. Project Cycle Management Fee charged by the Implementing Entity (if applicable)</u>			<u>7,500</u>
<u>Amount of Financing Requested</u>			<u>250,000</u>

Projected Calendar:

Indicate the dates of the following milestones for the proposed project/programme

Milestones	Expected Dates
Start of Project Implementation	April 2023
Project Closing	September 2024
Terminal Evaluation	December 2024

PART II: PROJECT JUSTIFICATION ¹

A. Describe the project components, particularly focusing on the concrete adaptation activities of the project, and how these activities contribute to climate resilience.

Component 1. Socialization phase. Adaptation is fostered through raising awareness in the community of the **effects of climate change and variability in small-scale agricultural production, and how these effects could be reduced by taking advantage of local energy resources such as wind, solar radiation and waste (e.g. by biogas production and utilization); and how water capture and energy and water management help to efficiently use these resources to meet their production needs and move towards energy and water independency and thus towards food security.** It contributes to climate resilience by making people active in the process of supplying their energy, **water, and food** needs.

Component 2. Project definition. Adaptation is fostered by the participative methodology to define the project. **The idea is to jointly (community plus implementation team) identify the challenges posed by climate change and variability in small-scale agriculture, and which technologies can be used to reduce the impacts of these challenges and foster the adaptation of the community production to the new climate conditions. In this process the energy and water demands are computed so that the food provision is secured. Furthermore, additional energy/water demands for adding value to the agricultural products are identified as well as the water and energy resources to fulfill the total energy and water needs. Here, solar radiation, wind and waste-to-energy are explored as main energy sources, and rain and environmental humidity are explored as main sources of water.**

Component 3. Project implementation. Adaptation is fostered by the involvement of the local community in the implementation. That is, the community will develop skills to install and operate the solution.

Components 2 and 3 contribute to climate resilience by using renewable-energy resources to cover the energy needs.

Component 4. Consolidation phase. Adaptation is fostered by installing capacities in the population to optimize their energy use and maximise energy efficiency. It contributes to climate resilience by making the population capable of extending their new skills to other locations.

B. Describe how the project provides economic, social and environmental benefits, with particular reference to the most vulnerable communities, and vulnerable groups within communities, including gender considerations. Describe how the project will avoid

¹ Parts II and III should jointly not exceed 10 pages.

or mitigate negative impacts, in line with the Environmental and Social Policy of the Adaptation Fund.

The project focuses on small-scale agriculture producers and on how climate change and variability affect them. Specifically, this proposal has interest in the producers of the south of Chile who are reducing their production per year due to changes in temperature and rain regimes (recently, lower temperatures during the winter season and higher temperatures during summer season have changed the timings for growing the agricultural products. This is accompanied by a significant reduction in the rains in the south of Chile). Consequently, food security of the communities composed by small-scale agricultural producers have been threatened. To adapt the production to the new conditions posed by climate change and variation, this project looks for the adaptation of technologies to the environmental conditions of the south of Chile that allow taking advantage of the local energy resources (solar radiation and wind mainly), waste-to-energy applications, water capture technologies, and energy and water management systems to guarantee the food production/provision and its transformation in a sustainable way to add value and diversify the sources of income of the community.

Due to the cultural aspects of the target population, women are usually in charge of food supply and are the most vulnerable group of the community since usually they need to give up formal jobs and well-paid positions. The project aims at making women the most important pillar of the community by fostering their participation in the definition and operation of the solution. **Indeed, it is expected that at least 70% of people from the community involved in the execution of this proposal are women. Their activities will cover the definition of the pilot to be implemented, the implementation of several equipment, the growing of different agricultural products using the solution defined in the project definition stage, and the evaluation and further improvements to be done.**

Additionally, the project looks at maximizing the energy, **water, and food** autonomy of the community in time, by strengthening the capabilities of its members to train new users of the energy solution.

C. Describe how the project encourages or accelerates development of innovative adaptation practices, tools or technologies and/or describe how the project helps generate evidence base of effective, efficient adaptation practices, products or technologies, as a basis for potential scaling up.

The project pursues the transition of small-scale agricultural production towards its energy and water independency and thus towards food provision securement. For doing that, technologies for the regulation of environmental conditions for the production, for taking advantage of local energy and water resources, and a system for the efficient use of these resources are considered. **Thereby**, the project impacts one of the main issues at small-scale renewables integration: the difficulty of getting familiar with the technology. This goal is addressed by implementing a system that automatically coordinates the diverse energy resources to minimize the dependency of external

resources (or maximize autonomy). This is a technological solution that is only recently being proposed for electrical systems but has not been proposed for both electrical and thermal system.

Nota that, the considered local energy resources are variable in nature (i.e., not necessarily available when needed). Thus, the use of energy storage devices (both thermal and electrical) might be needed to facilitate the integration of these resources. Indeed, technologies such as Lithium-ion batteries, thermal reservoirs, electrolysers, and fuel cells (these last two for dealing with hydrogen) will be considered as potential technologies to be integrated in the energy management system.

D. Please confirm whether the project meets relevant national technical standards, where applicable, such as standards for environmental assessment, building codes, etc., and is in line with the Environmental and Social Policy of the Adaptation Fund.

The project is fully aligned with the National Energy Strategy that fosters local solutions for energy independence. Although large-scale renewable generation is part of the solutions, the National Adaptation Plan emphasises the need of local solutions of social, economic, and environmental sustainability.

E. If applicable, describe the learning and knowledge management component to capture and disseminate lessons learned.

The project explicitly defines one of the components with the goal of systematising a methodology to transfer the lessons learned throughout the project period. Indeed, there will be a person specifically hired for this matter. Additionally, the project will be supported by the dissemination offices of both the NIE and the executing entity.

F. Provide an overview of the environmental and social impacts and risks identified as being relevant to the project. Describe how the project will engage, empower and/or benefit the most vulnerable communities and social groups, including gender considerations, in line with the Environmental and Social Policy of the Adaptation Fund.

Checklist	Assessment carried out	Potential impacts and risk
Compliance with Law	The project will comply with the local laws for electrical and thermal installations.	Risk: Very low Potential impact: Very high
Access and Equity	The project is focused on communities that have little access to the standard energy infrastructure, so it explicitly helps to minimize energy poverty.	Risk: Very low Potential impact: Very high
Marginalized and Vulnerable Groups	Isolated communities in Chile are usually marginalized in the municipal development plans. The goal of this project is to give relevance to these communities in the energy plans.	Risk: Very low Potential impact: Very high
Human Rights	The project will be cautious at respecting human rights of people where the project will	Risk: Very low Potential impact: High

	be implemented. The reason of the participation process is to ensure this.	
Gender Equity and Women's Empowerment	Women are the focus of the project, who are typically more vulnerable than men in the country.	Risk: Very low Potential impact: Very high
Core Labour Rights	The project will respect the labour rights of people that will take part of the development and operation of the system.	Risk: Low Potential impact: High
Indigenous Peoples	Many isolated communities in Chile are part of indigenous people. Therefore, the project will be taking especial care of these communities.	Risk: Very low Potential impact: Very high
Involuntary Resettlement	The project uses the local energy resources of the place where it will be located. Thus, no resettlement is considered.	Risk: Very low Potential impact: High
Protection of Natural Habitats	The project is respectful of the environment from design. That is, the main goal of the project is to use the available natural resources without damaging the habitat of species in the location.	Risk: Very low Potential impact: Medium
Conservation of Biological Diversity	The project is respectful of the environment from design. That is, the main goal of the project is to use the available natural resources without damaging the habitat of species in the location.	Risk: Very low Potential impact: Medium
Climate Change	The project will minimize the need of combustion of any kind (biomass or fossil fuels), changing the current technology which is typically diesel for internal combustion engines.	Risk: Very low Potential impact: Very high
Pollution Prevention and Resource Efficiency	The main objective of the energy management system will be to maximize the efficiency and minimize the use of energy devices that generate particle matter.	Risk: Very low Potential impact: Very high
Public Health	No impacts on public health are identified.	Risk: Very low Potential impact: Medium
Physical and Cultural Heritage	The participation of the community in the project is especially designed to avoid any impact on cultural heritage, by considering their voice in the design of the solution	Risk: Very low Potential impact: Very high
Lands and Soil Conservation	Since food security is the goal of the project, the use of land, the production of fertilizers with natural resources, and the water management are ensured.	Risk: Very low Potential impact: Very high

G. Provide justification for funding requested, focusing on the full cost of adaptation reasoning.

The total funding requested is 249,900 USD.

As indicated in Part I above, the project has 4 components: Socialization phase, Project definition, Project implementation, and Consolidation phase.

For the socialization phase and the project definition components, 3,000 USD are requested. This budget will fund the trips of the executing team to the location, the organization of meetings, and the salary of the people especially hired for the project which will be: 1 professional for the technological aspects and 1 professional for the social aspects. Both phases are planned to be 1-month long each.

For the project implementation component, lasting 10 months, 208,000 USD are requested. This budget will fund

PART III: IMPLEMENTATION ARRANGEMENTS

A. Describe the arrangements for project / programme implementation.

Since the goal of the project is to maximise the energy autonomy of an isolated community, the planned activities will directly impact on the adaptation to climate change and improving climate resilience by making the community capable of smoothly integrating different energy resources to cover the energy needs. The main difference with existent projects is that the synergy of the different energy resource will be fully exploited, minimizing the overall *energy losses*.

B. Describe the monitoring and evaluation arrangements and provide a budgeted M&E plan.

The project considers one 100% hired **person** (project manager) to keep track on the activities, the definition and evaluation of KPIs, and the modification of tasks if needed. That is, a monthly salary of 2,000 USD.

The monitoring and evaluation plan is designed as follows:

1. **Project definition report: 6 months after start**
2. **Project implementation report: 12 months after start**
3. **Final report: 16 months after start**

C. Include a simple results framework for the project proposal, including milestones, targets and indicators.

The specific KPIs of the project will be defined collaboratively with the local community to account for their vision, restrictions, and desires.

A list of general KPIs is, therefore, here indicated. Milestones are indicated in months (for example, **M1** means Month 1).

Result	Milestone	Indicator(s)	Baseline	Target	Means of verification
Component 1: Socialization phase					
Outcome 1.1: Raise awareness	Working group (executing entity + community) definition. M1.	Number of participating people from the community	0	10 (ideally only women)	Project definition report
Component 2: Project definition					
Outcome 2.1: Demonstrated community engagement	Definition of location, type, and size of energy resources. M2.	Area to be used Local resources used / Local resources available	- (nonexistent) 10%	< 10 m2 > 90%	Project definition report
Component 3: Project implementation					
Outcome 3.1: Technology familiarization	Energy resources installed. M7.	kWh of produced energy (electrical and thermal)	0	> 2	Project implementation report
Outcome 3.2:	Energy resources	kWh of produced	0	> 50	Project

Installed capacity in the community	fully operational. M12.	energy (electrical and thermal) Energy efficiency	5%	5%	definition report
Outcome 3.3: Pilot of management system	Energy management system installed. M15.	kWh of produced energy (electrical and thermal) Energy efficiency	0 5%	> 200 > 5%	Project definition report
Component 4: Consolidation phase					
Outcome 4.1: Training programs defined	Implementation of training programs to other people/communities. M18.	Number of people trained	0	20 (ideally only women)	Final report

D. Demonstrate how the project / programme aligns with the Results Framework of the Adaptation Fund

Project Objective(s) ²	Project Objective Indicator(s)	Fund Outcome	Fund Outcome Indicator	Grant Amount (USD)
PO1: Involve the local community of a pre-defined location, so that its vision and current capabilities are considered in the development of the project.	Number of participating people from the community	Outcome 3: Strengthened awareness and ownership of adaptation and climate risk reduction processes at local level	3.1. Percentage of targeted population aware of predicted adverse impacts of climate change, and of appropriate responses	5,000
PO2: Implement a co-construction methodology to design (define the type, size, and location) the energy solution.	Local resources used / Local resources available	Outcome 4: Increased adaptive capacity within relevant development sector services and infrastructure assets	4.2. Physical infrastructure improved to withstand climate change and variability-induced stress	5,000
PO3: Install an energy solution that takes advantage of the local energy resources to cover both electrical and thermal needs, including an energy management system that coordinates the operation of a diverse set of devices.	kWh of produced energy (electrical and thermal)	Outcome 6: Diversified and strengthened livelihoods and sources of income for vulnerable people in targeted areas	6.2. Percentage of targeted population with sustained climate-resilient alternative livelihoods	208172,0900
PO4: Define and implement a training program for ensuring the replicability of the solution in other places.	Number of people trained	Outcome 8: Support the development and diffusion of innovative adaptation practices, tools and technologies	8. Innovative adaptation practices are rolled out, scaled up, encouraged and/or accelerated at regional, national and/or subnational level.	20,000
Project Outcome(s)	Project Outcome Indicator(s)	Fund Output	Fund Output Indicator	Grant Amount (USD)

² The AF utilized OECD/DAC terminology for its results framework. Project proponents may use different terminology but the overall principle should still apply

Outcome 1.1: Raise awareness	Number of participating people from the community	Output 3.1: Targeted population groups participating in adaptation and risk reduction awareness activities	3.1.1 No. of news outlets in the local press and media that have covered the topic	5,000
Outcome 2.1: Demonstrated community engagement	Local resources used / Local resources available	Output 4: Vulnerable development sector services and infrastructure assets strengthened in response to climate change impacts, including variability	4.1.2. No. of physical assets strengthened or constructed to withstand conditions resulting from climate variability and change (by sector and scale)	5,000
Outcome 3.1: Technology familiarization	kWh of produced energy (electrical and thermal)	Output 6: Targeted individual and community livelihood strategies strengthened in relation to climate change impacts, including variability	6.1.1.No. and type of adaptation assets (tangible and intangible) created or strengthened in support of individual or community livelihood strategies	1350,9900
Outcome 3.2: Installed capacity in the community	kWh of produced energy (electrical and thermal) Energy efficiency			208,000
Outcome 3.3: Pilot of management system	kWh of produced energy (electrical and thermal) Energy efficiency			3022,000
Outcome 4.1: Training programs defined	Number of people trained	Output 8: Viable innovations are rolled out, scaled up, encouraged and/or accelerated.	8.1. No. of innovative adaptation practices, tools and technologies accelerated, scaled-up and/or replicated	20,000

E. Include a budget, including a budget on the Implementing Entity management fee use, and an explanation and a breakdown of the execution costs.

<u>Activity</u>	<u>Unit</u>	<u>Number of units</u>	<u>Unit cost</u>	<u>USD</u>
Component 1: Socialization phase				
Project presentation to community (PO1)	Presentation	2	1,000	2,000
Video of the project idea (PO1)	Video	1	1,000	1,000
Meetings to identify main concerns from the community (PO1)	Meetings	2	1,000	2,000
Component 2: Project definition				
Presentation of identified potential energy sources (PO2)	Presentation	1	1,000	1,000
Presentation of identified demand and synergies among energy sources (PO2)	Presentation	1	1,000	1,000
Working tables (PO2)	Meetings	3	1,000	3,000
Component 3: Project implementation				
Purchase of energy devices (biogasifiers, storage devices, photovoltaic panels, water recirculation, electrolyzers, others), (PO3)	Technology to be defined	To be defined with community		172,900
Component 4: Consolidation phase				
Training programs (PO4)	1	4	5,000	20,000
Management fee				
NIE Management Fee (5%)	1	1	11,900	7,500
Project Execution Cost				
Project Coordinator	1	1	39600	39600
TOTAL				250,000

F. Include a disbursement schedule with time-bound milestones.

<u>Schedule disbursement</u>	<u>Upon signing contract</u>	<u>6 months after project starts</u>	<u>12 months after project starts</u>	<u>Amount (USD)</u>
<u>Schedule date</u>	<u>April 2023</u>	<u>October 2023</u>	<u>March 2024</u>	
<u>Project funds</u>	<u>100,000</u>	<u>100,000</u>	<u>2,900</u>	<u>202,900</u>
<u>Project Implementing Entity</u>	<u>7,500</u>	<u>0</u>	<u>0</u>	<u>7,500</u>
<u>Project Execution Cost</u>	<u>39,600</u>	<u>0</u>	<u>0</u>	<u>39,600</u>
<u>Total</u>				<u>250,000</u>

PART IV: ENDORSEMENT BY GOVERNMENT AND CERTIFICATION BY THE IMPLEMENTING ENTITY

A. Record of endorsement on behalf of the government³ *Provide the name and position of the government official and indicate date of endorsement. If this is a regional project/programme, list the endorsing officials all the participating countries. The endorsement letter(s) should be attached as an annex to the project/programme proposal. Please attach the endorsement letter(s) with this template; add as many participating governments if a regional project/programme:*

Jenny Mager Santos Head of Climate Change Office, Designated Authority, Ministry of Environment	Date: August, 01, 2022
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B. Implementing Entity certification *Provide the name and signature of the Implementing Entity Coordinator and the date of signature. Provide also the project/programme contact person's name, telephone number and email address*

I certify that this proposal has been prepared in accordance with guidelines provided by the Adaptation Fund Board, and prevailing National Development and Adaptation Plans in accordance with Chile's national priorities in implementing adaptation activities to reduce adverse impacts of, and risks, posed by Climate Change and subject to the approval by the Adaptation Fund Board, commit to implementing the project/programme in compliance with the Environmental and Social Policy of the Adaptation Fund and on the understanding that the Implementing Entity will be fully (legally and financially) responsible for the implementation of this project/programme.

³⁶ Each Party shall designate and communicate to the secretariat the authority that will endorse on behalf of the national government the projects and programmes proposed by the implementing entities.

~~ENRIQUE O'FARRILL-JULIEN~~CARLA GUAZZINI GALDAMES

Acting Executive Director

Chilean International Cooperation Agency for Development (AGCID)

Implementing Entity Coordinator

Date: *August, 05, 2022*

Tel. and email: +56228275754 /

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Project Contact Person: Marco Ibarra, Policy Analyst.

Tel. And Email: +56228275759 / mibarra@agci.gob.cl



Letter of Endorsement by Government

Letter N°223005/

Santiago, 01-08-2022

To: The Adaptation Fund Board
c/o Adaptation Fund Board Secretariat
Email: afbsec@adaptation-fund.org
Fax: 202 522 3240/5

In my capacity as designated authority for the Adaptation Fund in Chile, I confirm that the project proposal: "Comprehensive multi-energy isolated for community-based food security in the Chilean Patagonia" is in accordance with the government's national priorities in implementing adaptation activities to reduce adverse impacts of, and risks, posed by climate change in Chile.

Accordingly, I am pleased to endorse the above project proposal with support from the Adaptation Fund. If approved, the project will be implemented by AGCID and executed by Austral University.

Sincerely,

Jenny Mager Santos
Head Climate Change Division
Ministry of Environment of Chile
Designated Authority of Chile

MJG/GSG/mrs

cc;

- AGCID
- International Affairs Office
- Archivo División de Cambio Climático
- Oficina de Partes