

AGTECH FOR CLIMATE-SMART DAIRY (Atn/rf 18078 rg)

ANNUAL REPORT 2022

**Regional Fund For Agricultural
Technology**

Ministry For Primary Industries
(Mpi) Of New Zealand

Global Research Alliance On
Agricultural Greenhouse Gases
(Gra)



TABLE OF CONTENTS

03	Abbreviations and Acronyms
04	Executive Summary
06	I. Introduction
08	II. Project portfolio execution and results
08	• 2.1. Objectives
08	• 2.2. Project activities summary
10	Table 1. Project Components and Activities
11	• 2.3. Project Implementation and Final Results
11	Figure 1. Product 2 “Good Practice Guide for Climate-Smart Dairy Farms” approved and published on FONTAGRO’s website
12	Figure 2. App access and login screen
12	Figure 3. LECHECK app homepage
12	Figure 4. Access to the app evaluation
12	Figure 5. App evaluation
13	Questions issued during the app validation period
14	Figure 6. Web platform for managing the results obtained from the use of the app
15	III. Conclusions
15	IV. Digital reference
16	V. Bibliographic references
17	VII. Annexes
19	VIII. IDB Grant Financing at a Glance
19	VII. Annexes
19	Annex II
22	Annex III

ABBREVIATIONS

ACI	Agricultura climáticamente inteligente (see CSA)
ALC	América Latina y el Caribe (see LAC)
APROCAL	Asociación Pro-Calidad de Leche (Argentina) (Pro-Quality Association of Milk and its Derivatives)
CAHLE	Cámara Hondureña de la Leche (Honduras) (Honduran Milk Chamber)
CATIE	Centro Agronómico Tropical de Investigación y Enseñanza (Tropical Agricultural Research and Teaching Center)
CSA	Climate-smart agriculture
CSDF	Climate-Smart Dairy Farms
FAO	Food and Agriculture Organization of the United Nations
FCA	Facultad de Ciencias Agrarias (School of Agricultural Sciences)
GHG	Greenhouse gases
HR	Human Resources
IDIAF	Instituto Dominicano de Investigaciones Agropecuarias y Forestales (Dominican Institute for Agricultural and Forestry Research)
IICA	Inter-American Institute of Agricultural Sciences
INIA	Instituto Nacional de Investigaciones Agropecuarias (Uruguay) (National Institute of Agricultural Research)
INTA	Instituto Nacional de Innovación y Transferencia de Tecnología Agropecuaria (Costa Rica) (National Institute for Innovation and Technological Transfer in Agriculture)
LECHECK	An AgTech app for Climate-Smart Dairy Farming (Lechería Climáticamente Inteligente)
LAC	Latin American and the Caribbean (see ALC)
MAG	Ministerio de Agricultura y Ganadería (Costa Rica) (Ministry of Agriculture and Livestock)
RIDAG	Ibero-American Network for the Digitalization of Agriculture
SDG	Sustainable Development Goals
TEC	Tecnológico de Costa Rica (Costa Rica Institute of Technology)
UNC	Universidad de Córdoba (Argentina) (Córdoba National University)
UCR	Universidad de Costa Rica (Costa Rica University)

EXECUTIVE SUMMARY

COMPONENT 1 of the project entailed the construction of a cooperative platform. During the inaugural year of the project implementation, the public-private collaborative platform was developed, made up of institutions and organizations from the diverse member countries. This development facilitated progress in achieving the expected outcome of Component 1, i.e., the establishment of public-private network with technical capability across the participating countries to achieve the project objectives, as well as Output 1, the consolidation of a public-private platform for cooperation among executing agencies, co-executors, partners, entrepreneurs and users.

COMPONENT 2 of the project aimed to create a preliminary document outlining Good Practices for Climate-Smart Dairy Farms (CSDF). To accomplish this, a literature and app review was completed, as well as interviews with various stakeholders, including members of chambers, dairy farmer associations, companies, and specialists, to evaluate the needs and capacities of the sector. This led to the drafting of the “Good Practices Guide for CSDF” (Project Product 2), and its successor, which served as the foundation for the development of digital tools such as a web platform and applications for mobile devices and computers. The development of these digital tools involved several stages, including a detailed survey and analysis of the administrative and operational processes of future users and initial implementation of the applications, the development of security factors report configuration, quality control, execution, and stabilization. The system was implemented through an exchange of requirements and adaptations between developers and users. This resulted in the second expected result of this component: digital tools (web platform, mobile applications, and computer applications), based on Good Practices for the management of the CSDFs. A hybrid event was held to launch the LECHECK app in San José, Costa Rica, at Inter-American Institute of Agricultural Sciences (IICA) headquarters on May 20 of 2022. Product 3 of this component, the development of a document with the description of the application for mobile devices and computers, based on Good Practices for the management of the CSDFs, was constructed and delivered.

COMPONENT 3 of the project aims to validate the use of applications on private dairy farms. The process will be conducted by professionals from each dairy farm and coordinated by a technical team who also hold periodic workshops to monitor progress. The component's aim is to evaluate whether the applications can collect the required information, whether it is easily understood, and if it reflects the establishment condition with regards to the proposed quality systems. Additionally, the component aims to train professionals in this field in quality management tools. Since May of 2022, five face-to-face validation workshops have been conducted, one in each co-executing country. Local technical teams carried out the validation process in each case. Following this preliminary validation effort, the application will be validated through the digital platform Top Farming (Tambero.com). The expected result of this component is the validation of digital tools on commercial dairy farms in the participating countries, and to make them available for massive use and dissemination through existing online platforms.

COMPONENT 4 aims to disseminate and communicate the results, provide human resources (HR) training, and establish a network of knowledge and partnerships with institutions and organizations that influence the rural areas where dairy farms are located. The expansion of a strategic public-private alliances network in the Latin America and Caribbean (LAC) region for the adoption of Good Practices tools will be achieved by participating in regional conferences and workshops where the dairy chain stakeholders are present. These meetings also serve as a platform to communicate project results, disseminate the new technology, and expand the network of trainers in Good Practices for CSDF. The adoption of the Good Practices and the list of contacts and users are key data points for knowledge management activities. Expected results of this component include HR personnel trained in Good Practices for CSDF, using the tools produced, and the results communicated and disseminated.

I. INTRODUCTION

Livestock systems are confronted with a number of challenges, including the depletion of natural resources, climatic variations, increased demand for food, price volatility, rising costs, environmental regulations, and more. However, efficient livestock production systems may have positive environmental impacts if systems are efficient^I, such as reducing greenhouse gas (GHG) emissions and improving carbon sinks, all while increasing productivity. Consequently, it is critical that these systems prioritize productivity and profitability in an environmentally and socially sustainable way. Additionally, changes in rainfall and temperature patterns pose a threat to agricultural production, which, in turn, increases the vulnerability of those who depend on agriculture for their livelihoods. To mitigate these threats, it is essential to increase the adaptive capacity of farmers and improve the resilience and resource efficiency of agricultural production systems^{II}.

Climate-smart agriculture (CSA) has gained significant attention recently, as humanity grapples with the challenges of adaptation and mitigation. The approach of CSA has three objectives: (i) increase agricultural productivity, food security and development; (ii) increase adaptive capacity at multiple levels and (iii) decrease GHG emissions and increase carbon sinks^{III}.

To apply this approach to dairy farming, it is recommended that dairy farmers follow a set of guidelines for production of healthy and high-quality milk, which prioritize sustainable management practices accounting for animal welfare and social, economic and environmental

aspects of dairy farm operations^{IV}. The Good Practices pillars are aligned with the CSA principles, therefore, a transition strategy from current production models to the Climate-Smart Dairy Farms (CSDF) model is recommended.

Small and medium-sized Latin American and Caribbean (LAC) dairy farmers have undergone difficulties in adopting Good Practices, largely due to the lack of knowledge or training on the subject^V. In Argentina, the National Institute of Agricultural Technology (INTA), the Córdoba National University (UNC) and the Pro-Quality Association of Milk and its Derivatives (APROCAL) have developed a “Good Practices Guide for Dairy Farms”^{VI VII VIII IX X XI XII} to help address these challenges. To facilitate the implementation of the Good Practices, AgTech tools were developed and successfully adopted^{XIII}. Furthermore, the National Network of Good Practices for the dairy sector and the National Program of Good Practices were created, thus creating a supportive regulatory framework for implementation. The development, dissemination, and promotion of CSDF concepts and Good Practices training tools for LAC dairy farmers are key to achieving results.

This project has already directly reached 1,503 dairy farmers and 25 organizations, including cooperatives, associations, and small and medium-sized enterprises, 1,027 professionals and technicians in the dairy sector, hundreds of students from technical agricultural schools and programs linked to milk production, 12 milk processing companies and residents of 25 municipalities across Argentina, Uruguay, Dominican Republic, Costa Rica and Honduras. Other stakeholders along the dairy value chain have been indirect beneficiaries, such as

political decision-makers, members from complementary services, and consumers. The primary outcomes of this initiative are dairy farmers enabled with AgTech tools to implement CSDF approaches, professionals with strengthened capacities to support farmers facing challenges with adoption, more efficient dairy farms, improved understanding of different management systems, and better market access.

The anticipated outcomes of this initiative include providing dairy farmers and their associations with access to AgTech tools for sustainable management and training to apply these skills, technical advisers in governmental and private organizations trained in the use of tools for the sustainable management of dairy farms, and the establishment of a baseline for

compliance with sustainable dairy farming practices in LAC, and a network to share feedback and sound advice to inform future implementation of CSA practices.

This project collaborates in promoting solutions that support the following SOGs: 1) End poverty, 2) End hunger, achieve food security and improved nutrition and promote sustainable agriculture, 8) Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all, 12) Ensure responsible consumption and production patterns, 13) Take urgent action to combat climate change and its impacts, and 15) Promote the sustainable use of terrestrial ecosystems.



II. PROJECT EXECUTION AND RESULTS

2.1. Objectives

Main Objective

Build new capacities for the LAC dairy sector to implement sustainable management practices to achieve climate-smart dairy farms.

Specific Objectives

- (i) Establish and strengthen a public-private network with technical capacity across the participating countries to achieve the project goals.
- (ii) Develop digital tools.
- (iii) Validate the digital tools developed on participating countries' dairy farms through online platforms.
- (iv) Train people in Good Practices for CSD using the developed tools.

2.2. Project activities summary

Component 1 entailed the construction of a cooperative platform, which is currently operational. The team was made up of researchers from the six co-executing agencies of the project, the organizations associated with the project, and representatives from organizations not initially included, such as Food and Agriculture Organization of the United Nations (FAO), the *Centro Agronómico Tropical de Investigación y Enseñanza* (CATIE), Cornell

University (USA), dairy farmers' associations, and other governmental bodies in each country. The team executed two primary activities in the inaugural year: Component 1, platform building and management project and Product 2, the drafting of the the Good Practices for CSD. All the activities planned were conducted online due to the COVID-19 pandemic. First, four meetings of co-executors and the executing agency were conducted, and later, an international conference was held to launch the project. The activities carried out in the second year were grouped into three categories: firstly, activities to complete Output 2 (Component 2), secondly, the development of digital tools and their validation (Component 3), and lastly, the dissemination of results and human resources (HR) training (Component 4).

The objective of **Component 2** was to produce a comprehensive document defining Good Practices in Milk Production for CSD in LAC. During the reporting period, the document drafting and editing was completed, and Product 2, "Guide of Good Practices for CSD," was achieved. This document formed the basis for the development of the digital tools described in the project, including a web platform, and mobile and computer applications. The development of the digital tools included several stages. Firstly, a detailed survey and analysis of the administrative and operational processes carried out by the software's future users was conducted. This informed the creation, compilation and initial implementation of the necessary modules for users interaction, alongside the development of initial adaptations. Secondly, security factors were established according to users' requirements, and report configuration was set up. Quality control constituted the third stage, including

the final review of the system's initial structure. The fourth stage, execution, included implementing the system in a joint process of exchange between developers and users, allowing users to incorporate the system into their daily activities. Finally, the fifth stage focused on system stabilization with the development of additional adaptations identified by early users.

As a result of this component, the second expected outcome was achieved: the development of digital tools (including a web platform, mobile applications, and computer applications) based on Good Practices for the management of the CSDFs. A hybrid event was held to launch the LECHECK app at Inter-American Institute of Agricultural Sciences (IICA) headquarters in San José, Costa Rica on May 20, 2022. Finally, Product 3, "Document with the description of the application for mobile devices and computers developed, based on Good Practices for the management of the CSDFs" was successfully completed and delivered.^{xiv}

Component 3 of the project began in May of 2022, and five face-to-face validation workshops have been held to date, one in each co-executing country. Local technical teams conducted the validation process in each case. In parallel, the validation process was launched through digital platforms. The LECHECK app is currently available on several platforms, including the Bank of Low-Cost Technological Solutions and the Platform for Climate Action in Agriculture in Latin America and the Caribbean (PLACA)^{xv}, the Ibero-American Network for the Digitalization of Agriculture (RIDAG)^{xvi} and INTA Lechero^{xvii} Platform. It is also soon to be published in Top Farming (Tambero.com). The expected outcome of this component is

to have digital tools validated on commercial dairy farms in the participating countries, and online through available platforms for mass use and dissemination.

Component 4 focuses on the dissemination and communication of results, as well as training HR and building a network of knowledge and alliances with institutions and organizations that have an influence in the rural areas where dairy farms are located. To achieve these objectives, the project aims to expand the network of strategic public-private alliances in the different LAC regions, participate in regional workshops involving dairy chain stakeholders to disseminate the technology, and expand the network of trainers in Good Practices for CSDF. The information developed by the platform and the list of contacts and users will be key for some knowledge management activities. Expected results of this component include HR personnel trained in Good Practices for CSDF using the tools produced, as well as thorough dissemination and communication of results.



Table 1. Project Components and activities

Component	Activity	Result	Current Status
1	1.1. Build a public-private platform for the development, validation, implementation and communication of the project's activities, in order to carry out knowledge management and capacity building.	Public-private network with the participating countries and technical capability to carry out the objectives set out in the Project in place and consolidated.	Completed
2	2.1 Co-building of a "Good Practices Guide for CSDF". Identification, evaluation, and selection of basic documents.	Good Practices to achieve CSDF agreed upon for LAC.	Good Practices to achieve CSDF agreed upon for LAC: completed. "Good Practices Guide for CSDF" to be published: Completed.
2	2.2 Develop applications for mobile devices and computers to assess Good Practices for dairy farms.	Good Practices to achieve CSDF agreed upon for LAC.	In progress.
3	3.1 Validate tools for dairy farms of FA with technical training. Technical teams will be established in each country for implementation. Training workshops will be held for application validation. Tool reliability and strength will be assessed. Adjustments will be made for tool use, scaling up and adoption.	Good Practices to achieve CSDF agreed upon for LAC.	In progress.
3	3.1 Validate tools for dairy farms of FA with technical training. Technical teams will be established in each country for implementation. Training workshops will be held for application validation. Tool reliability and strength will be assessed. Adjustments will be made for tool use, scaling up and adoption.	Good Practices to achieve CSDF agreed upon for LAC.	In progress.
3	3.2 Validate tools through the web. A Beta version (test) will be launched. The tool will be delivered to dairy farms through the Top Farming application. Together with the application, instructions, and some questions to collect users' opinions will be delivered.	Good Practices to achieve CSDF agreed upon for LAC.	In progress.
3	3.3 Analyse the validation stage results and final tool development.	Initial diagnosis of the compliance of GP on dairy farms in LAC.	In progress.
4	4.2 Train HR, disseminate and communicate results. Technical teams will be trained in all countries and their members will subsequently train local trainers. In addition, days, courses, webinars, and some other training strategies on the developed tools will be held.	HR trained in Good Practices for CSDF.	In progress.

2.3. Implementation Status and Results

Component 1. Building up of a Cooperation Platform.

Activity 1.1 Build a public-private platform for the development, validation, implementation and communication of the project's activities

The project platform was built in cooperation with the executing agency, the co-executing organizations, associated organizations, entrepreneurs, and users. This activity strengthened the platform members' technical, organizational, and institutional capacities to understand and utilize the digital tools developed in the Project. During the second year of the project, the platform underwent several activities: first, activities to complete the Good Practices for CSDF document (Component 2), second, activities related to the development of the digital tools and their validation (Component 3), and finally, activities associated with the dissemination of results and HR training (Component 4).

Component 2. Development of digital tools

Activity 2.1 Co-building of a “Good Practices Guide for CSDF”.

Product 2 development began at the meeting held on August 17, 2021 in Buenos Aires, Argentina, where the “[Good Practices for CSDF](#)” document was consolidated and closed. An Excel spreadsheet (Figure 1) was used as a basis for the published document (Figure 1).



Figure 1. Product 2 “Good Practices Guide for Climate-Smart Dairy Farms” approved and published on FONTAGRO’s website.

Activity 2.2. Develop applications for mobile devices and computers to assess Good Practices for dairy farms.

Together with the Product 2 edition, based on the Good Practices consensus document, the activities for the development of digital tools began. Within this framework, five meetings on the project platform were held between January and May 2022 (See Annex I). On May 20, 2022 the LECHECK app was launched with a goal of presenting the app developed within the AgTech project framework to the LAC community. The event was launched in a hybrid modality, live on [INTA Argentina YouTube channel](#). (see Annex).

The developed app

LECHECK is an app that works both online and offline, resulting in a versatile tool that adapts to the needs of each user. The app can be downloaded from the app store for both Android and iOS. Once the app has been downloaded from, the user must log in and/or register using an email account (Figure 2).

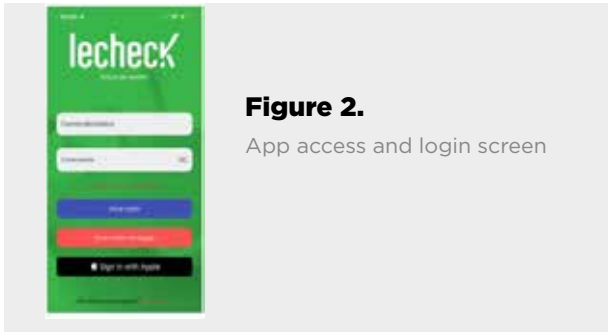


Figure 2.
App access and login screen

Description of the web application

On the [LECHECK web platform](#) (Figure 3), a video tutorial is available to facilitate the use of the app. The description and instructions to use each tool are detailed in Product 3, a description of the application for mobile devices and computers based on good practices for CFDS management.



Figure 3. LECHECK.app homepage

Component 3. Validated Digital Tools

Activity 3.1 Validate tools developed on Family Farming (FF) dairy farms with technicians' training.

Within the framework of this activity, five validation workshops were held to present the app, to train technicians in the capacity to validate the app on dairy farms in each country, and to provide feedback on the process. De-

tails of the workshops are presented in Annex II. During these workshops, technical advisors, industry representatives and farmers were trained on the importance of implementing good practices, milk safety, system efficiency, and “climate-smart” farming concepts, and were introduced to the LECHECK app. Most of them carried out practical work with the app on dairy farms.

One of the tools used during this validation process was an app evaluation form, accessible to users on the LECHECK website (Figure 4).

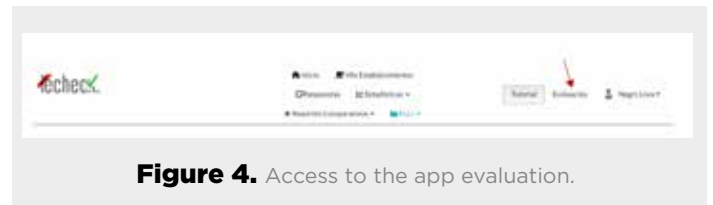


Figure 4. Access to the app evaluation.

By clicking on this link, users will be taken to a form with questions about their experience using the app. And feedback from this form is used to improve future iterations of the app (Figure 5). This evaluation process will be in place until May of 2023, during the app validation, when results will be evaluated and analyzed in each country and also from an overall perspective.



Figure 5. App evaluation.

QUESTIONS ISSUED DURING THE APP VALIDATION PERIOD:

I. Installation and use

- Trouble-shooting

II. Farm data upload

- Was the requested data amount adequate?
- Were there problems in collecting the mandatory information?

III. Good practices checking

- Were there difficulties in checking any of the areas?

IV. If so, indicate the area(s)

- Indicate if any practices were not understood
- Indicate if any practices could not be assessed. Which one and why?

V. App performance

- How would you rate the interpretation of the results provided by the app?
- How would you rate the interpretation of the CSDF score?
- Is the CSFD given by the app consistent with your assessment about your institution's situation?

VI. App Checklist

- Please rate your experience in evaluating the list of good practices

VII. Tell us about your experience as user

- How would you rate your experience of using the app?
- Would you use it to implement these good practices on dairy farms?
- Would you recommend its use?
- What was the farmer's attitude about validation?
- What would you improve/change about the app?
- Other comments/suggestions

Component 4.

Activity 4.2. Train human resources, disseminate and communicate the results.

Project videos

Six videos were produced in the framework of the project implementation.

Virtual site for the project

The material presented in each meeting and workshop, as well as the meeting recordings and the signed agreements, can be found on [the project website](#).

Web platform for managing the results obtained through the app use

The representatives of the project's co-executing organizations have access to a web platform (Figure 6) through which they are able to see all the data generated by the app. Thus, they can monitor the situation in their country and the region. It should be noted that the co-executing partners have developed an agreement to discuss within the project platform any information to be published which requires the parties' previous consent. It should also be noted that all the information collected with the app refers only to the production systems, not to personal and/or financial information.



Figure 6. Web platform for managing the results obtained from the use of the app

Knowledge management and dissemination

The following are knowledge management products developed based on FONTAGRO's Communication and Knowledge Management Instructions. The specific activities carried out to achieve effective knowledge dissemination are quantitatively analyzed, along with their results

Knowledge products

Product 1. Technical note corresponding to the Platform activities in year 1.

Product 2. Document consolidating the set of good practices (GP) in milk production, aiming at climate-smart dairy farms (CSDF) in Latin America and the Caribbean.

Product 3. Document with the description of the application for mobile devices and computers developed, based on good practices, for CSDF management.

Type of Product*	2020	2021
Articles published at Fontagro Project web: news, notes, blogs	3	8
Webstories	Initial upload	Updates
Fontagro tech, poster	0	2
Videos (YouTube)	2	4
Social networks postings (Twitter, Facebook, In)	52	167
Social networks followers (Twitter, Facebook, In)	588	7654

III. CONCLUSIONS

During the reporting period, the project platform was successfully established, and activities outlined in the annual action plan, including product delivery, were completed on schedule. The Good Practices for CSDF document was finalized and provided the basis for the development of digital tools which are now operational and available for free access. Validation workshops were conducted in each of the co-executing countries, allowing for adaptative fine-tuning of the LECHECK app for different production systems in the Central American, Caribbean, and South American regions. These workshops also provided networking opportunities with professionals and other projects focused on climate change, and thus providing complementary information for analysis. Participants in the workshops found the LECHECK app to be a valuable tool for overall farm analysis, covering all areas and complementing existing instruments and projects.

IV. DIGITAL REFERENCE

<https://www.fontagro.org/new/proyectos/lecheria-climaticamente-inteligente/en>

V. BIBLIOGRAPHIC REFERENCES

- I. FAO. 2006. Livestock's long shadow: environmental issues and options. Rome. Available at <ftp://ftp.fao.org/docrep/fao/010/A0701E/A0701E00.pdf>).
- II. Lipper, L. P.; Thornton, B.M.; Campbell, E.F. Torquebiau. 2014. Climate-smart agriculture for food security Nat. Clim. Chang., 4 (2014), pp. 1068-1072
- III. Campbell, B. M., Thornton, P., Zougmore, R., van Asten, P., and Lipper, L. (2014). Sustainable intensification: what is its role in climate-smart agriculture? Curr. Opin. Environ. Sustain. 8, 39-43. doi: 10.1016/j.cosust.2014.07.002
- IV. FAO y FIL. 2012. Guía de buenas prácticas en explotaciones lecheras. Directrices FAO: Producción y Sanidad Animal. No. 8. Roma
- V. Izquierdo, J. 2004. Las buenas prácticas agrícolas. Conferencia electrónica. FAO, Chile.
- VI. Negri, L y Aimar V. (2013). Guía de Buenas Prácticas en el Tambo. 1a ed, Buenos Aires, INTA ed., 87pp, ISBN 978-987-679-302-
- VII. Negri, L. y col. (2016) Guía de buenas prácticas para tambos; compilado por Livia Negri ; María Verónica Aimar. - 1a ed . - CABA, Ed INTA, 57 p. ; 20 x 28 cm. ISBN 978-987- 521-758-4
- VIII. Negri, L.M. y col. 2018a. Validación de una herramienta de gestión de calidad para tambos, basada en las buenas prácticas. Comunicación. 41 Congreso AAPA, octubre 2018.
- IX. Negri, L. y Aimar, V. (2017). CheqTambo. Registro propiedad RE-2017-16575947. Titular: INTA
- X. Negri, L.M. y col. 2018b. Avances en la implementación de la Guía de Buenas Prácticas en tambos de Argentina usando la app "CheqTambo". En memorias del 15o Congreso Panamericano de la Leche, BsAs. 5pp.
- XI. Negri, L.M. y col. 2018c. Grado de cumplimiento de las buenas prácticas en tambos utilizando la "Guía BPT". 41 Congreso AAPA, octubre 2018.
- XII. Negri, L. 2018. Desarrollo e implementación de un modelo de gestión para la adopción de buenas prácticas en el sector productor lechero. IV Encuentro Nacional de Gestores Tecnológicos. 20 y 21 de septiembre de 2018, Bs.As. 10pp
- XIII. Anpro Campus, 2019. Curso e-learning en Buenas Prácticas para Establecimientos lecheros, Tercer Término, Bs.As., Argentina. Available at <https://www.anprocampus.com>
- XIV. Negri, L. y Aimar, M.V. Ed. (2022). Guía de Buenas Prácticas para Establecimientos Lecheros Climáticamente Inteligentes. Proyecto Fontagro ATN-RF 18078 RG. 58pp. <https://fontagro.org>
- XV. Plataforma de Acción Climática en Agricultura de Latinoamérica y el Caribe (PLACA). 2022. Banco de soluciones tecnológicas de bajo costo y/o basadas en recursos locales. Disponible en: <https://accionclimaticaplaca.org/es/soluciones-tecnologicas-de-bajo-costo-y-o-basadas-en-recursos-locales/>.
- XVI. Red Iberoamericana para la Digitalización del Agro (RIDAG). 2022. Available at: <https://ridag.net/tecnologias/>
- XVII. Plataforma de INTA Lechero. 2022. Herramientas para mejorar la gestión de tu tambo. Available at: <https://herramientaslecherasinta.org>

VI. ANNEXES

Details about the meetings held (Activity 2.2)

6TH MEETING

Date: January 12, 2022

Venue: virtual (Zoom Platform).

Participants: Verónica Aimar (FCA-UNC, Argentina), Alejandro La Manna (INIA, Uruguay), Gabriela Mora Mora (INTA, Costa Rica), Carmen García (CAHLE, Honduras), Joaquín Caridad del Rosario (IDIAF, República Dominicana), Gustavo De Greef (INTA, Argentina), Sebastián Rojo (INTA, Argentina), Silvina Gabutti (Fundación ArgenINTA), Livia Negri (INTA, Argentina)

Objective: Present logo alternatives for the application. Discussion and selection of the final logo. Conclusion: one of the logos was selected but modifications were proposed.

7TH MEETING

Date: February 2, 2022

Venue: virtual (Zoom Platform).

Participants: Verónica Aimar (FCA-UNC, Argentina), Alejandro La Manna (INIA, Uruguay), Gabriela Mora Mora (INTA, Costa Rica), Carmen García (CAHLE, Honduras), Joaquín Caridad del Rosario (IDIAF, República Dominicana), Gustavo De Greef (INTA, Argentina), Sebastián Rojo (INTA, Argentina), Silvina Gabutti (Fundación ArgenINTA), Livia Negri (INTA, Argentina).

Objective: to present the financial status of the project: Annual Reporting and agenda for year 2. To organize co-executor meeting and 1st validation workshop of the app in Costa Rica (May 2022), discuss the progress of the Guide-Product 2.

8TH MEETING

Date: February 24, 2022

Venue: virtual (Zoom Platform).

Participants: Verónica Aimar (FCA-UNC, Argentina), Alejandro La Manna (INIA, Uruguay), Gabriela Mora Mora (INTA, Costa Rica), Carmen García (CAHLE, Honduras), Joaquín Caridad del Rosario (IDIAF, República Dominicana), Gustavo De Greef (INTA, Argentina), Sebastián Rojo (INTA, Argentina), Silvina Gabutti (Fundación ArgenINTA), Livia Negri (INTA, Argentina).

Objective: Presentation of the final logo of the app, access to the website and organisation of activities in Costa Rica in May. Design of the dissemination materials.

9TH MEETING

Date: 6 April 2022

Venue: virtual (Zoom Platform).

Participants: Verónica Aimar (FCA-UNC, Argentina), Alejandro La Manna (INIA, Uruguay), Gabriela Mora Mora (INTA, Costa Rica), Carmen García (CAHLE, Honduras), Joaquín Caridad del Rosario (IDIAF, República Dominicana), Gustavo De Greef (INTA, Argentina), Sebastián Rojo (INTA, Argentina), Silvina Gabutti (Fundación ArgenINTA), Livia Negri (INTA, Argentina).

Objective: Presentation of the 1st disbursement report, review of the proposed agenda for Costa Rica, discuss the possibility of the GP -CSDF Guide. Product 2.

Conclusion: it was decided to take advantage of the trip and stay in Costa Rica in May to hold an event to launch the app jointly with IICA within the Digitalization Week that IICA was organizing for the same week that our team would be working in Costa Rica.

10TH MEETING

Date: May 16 and 17, 2022

Venue: San Carlos, Costa Rica

Participants:

Co-executors: Verónica Aimar (FCA-UNC, Argentina), Alejandro La Manna (INIA, Uruguay), Gabriela Mora Mora (INTA, Costa Rica), Carmen García (CAHLE, Honduras), Joaquín Caridad del Rosario (IDIAF, República Dominicana), Gustavo De Greef (INTA, Argentina), Sebastián Rojo (INTA, Argentina), Livia Negri (INTA, Argentina).

Participants from Costa Rica, from INTA: William Sánchez, Óscar Transferencia, Sergio Abarca, Johnny Montenegro, Fabián Castro, José Luis Rivera, Douglas Rodríguez, Fernando Vargas, Laura de la Mata, Juan Solano. Jorge Segura (Nat. Livestock Coord.), Carlos Salazar (National Dairy Programme Coord.), Jorge Elizondo (Costa Rica University), a representative of the Costa Rica Technological Institute, a representative of Copeleche, a representative of Coprebrisas, a representative of the Monteverde Milk Producers' Association, Cinthya Granados Marín, Yamil Quesada García, Erick Fallas Álvarez, Laura Zamora Sánchez, Yoseth Dávila Saborio, Edgar Campos, Marvin Leitón, Juan Pablo Muñoz.

Objective: conduct an internal workshop with Costa Rican co-executors and decision-makers to start the validation stage.

Conclusions: work guidelines were agreed upon, an agenda was set, and modifications were made to the app for its optimal functioning.



Figure 1. Screen captures from the 10th co-executors meeting and the validation internal workshop held in San Carlos, Costa Rica, on May 16 and 17, 2022

LAUNCHING OF THE LECHECK APP

Date: May 20, 2022

Venue: IICA Headquarters, Costa Rica

Speakers: Federico Bert, IICA; Rocío Valerio Rodríguez ViceMinister of Agriculture and Livestock of Costa Rica; Eugenia Saini, FONTAGRO Executive Secretary (via zoom); Hayden Montgomery from Global Research Alliance on Agricultural Greenhouse Gases (GRA), Representative of GRA (via zoom); Arturo Solórzano Arroyo, Director of INTA, Costa Rica; Carlos Parera, National Director of INTA Argentina (via zoom); Héctor Ferreira, President CAHLE, Honduras (via zoom); José Bonica, President INIA Uruguay (via zoom); Jorge Dutto, Dean of the Agricultural and Livestock Sciences School, National University of Cordoba, Argentina (via zoom); Eladio Arnaud, Director General of IDIAF, República Dominicana (via zoom); Livia Negri, Technical Project Leader.

Attendees: Minister of MAG, Executive Director of INTA, Enrique Martínez (INTA), William Sánchez (INTA), Oscar Bonilla (INTA), Fernando Vargas (MAG Región Huetar Norte), Guillermo Flores (MAG Región Oriental Sidney García (MAG Región Chorotega), Nils Solórzano (MAG Región Pacífico Central), Jimmy Ruiz (MAG Región Central Occidental), Jorge Segura (MAG National Livestock Programme), Rodolfo Wing Chin Jones (UCR), Milton Villareal (TEC), Luis Diego Obando (Corfoga), Verónica Aimar (FCA-UNC, Argentina), Alejandro La Manna (INIA, Uruguay), Gabriela Mora Mora (INTA, Costa Rica), Carmen García (CAHLE, Honduras), Joaquín Caridad del Rosario (IDIAF, República Dominicana), Sebastián Rojo (INTA, Argentina), Fabián Castro (INTA, Costa Rica), Gustavo De Greef (INTA, Argentina).

Objective: to present to the LAC community the LECHECK app developed in the framework of the Agtech project for CSM. The event was held in a hybrid modality and was streamed live on INTA Argentina's YouTube channel. The video event is available at <https://www.youtube.com/watch?v=ExWql-J0p3dk&t=3s> and has 619 views to date.



Figure II. Screen capture of the LECHECK app launching event at IICA



Figure III. Photograph taken at the end of the launching event at IICA with representatives of coexecuting organizations

Program for the launching of the LECHECK app event



Lanzamiento app LECHECK en Marco de la Semana de la Digitalización

Proyecto Fontagro "AgTech para Lechería Climáticamente Inteligente" ATN-RF 18078 RG

Lugar: Sala USA, Sede Central IICA, Costa Rica
 Dirección: 100 m. noroeste del Cruce Ispil-Coronado
 Vázquez de Coronado, San Isidro 11101 - Costa Rica. San José, Costa Rica

Programa

Viernes 20 de mayo, 2022 – 9,00 hs.

09.00 hs. Recepción de los asistentes.

09.30 hs. Bienvenida e introducción a la reunión. Livia Negri, Líder técnico del Proyecto (INTA Argentina).

09.40 hs. Espacio para IICA

9.50 hs. ViceMinistra de Agricultura y Ganadería de Costa Rica, Rocío Valerio Rodríguez

10.00 hs. Espacio para Fontagro. Eugenia Saini, Secretaria Ejecutiva FONTAGRO (vía zoom)

10.10 hs. Presentación de Global Research Alliance on Agricultural Greenhouse Gases (GRA). Hayden Montgomery, Representante de GRA (vía zoom).

10.20 hs. Espacio para el Organismo co-Ejecutor de Costa Rica. Arturo Solorzano Arroyo, Director de INTA, Costa Rica

10.25hs. Espacio para el Organismo Ejecutor Técnico. Director de INTA, Argentina. Carlos Parera, Director Nacional de INTA Argentina

10.30 hs. Espacio para palabras de representantes de los organismos co-ejecutores (vía zoom):

- Héctor Ferreira, Presidente CAHLE, Honduras.

- José Bonica, Presidente INIA Uruguay.

- Jorge Dutto, Decano de la Facultad de Ciencias Agropecuarias de la Universidad Nacional de Córdoba, Argentina.

- Eladio Arnaud, Director General de IDIAF, República Dominicana.

10.50 hs. Breve presentación de la app LECHECK. Livia Negri, Líder técnico del Proyecto (INTA Argentina).

11.00 hs. Cierre de la reunión. Livia Negri, Líder técnico del Proyecto (INTA Argentina).

Datos de la reunión modo virtual:

Enlace: <https://lica.zoom.us/j/83506161702?pwd=U2pwRGU5RDxocTJlUkp4aHNKGkJKQT09>

Clave: 2NPEH

Mails de contacto: negri.livia@inta.gov.ar, fontagro.agtech@inta.gov.ar



ANNEX II

Details about the workshops held (Activity 3.1)

1ST VALIDATION WORKSHOP

Date: May 18 and 19, 2022

Venue: San Carlos, Costa Rica.

Participants: 30 attendees, including professionals from Costa Rican organisations and co-executors (a list is attached).



Figure IV. Photo from the validation workshop held in Costa Rica



Figure V. Photo from the co-executing team's visit to a dairy farm in Costa Rica

Register of Attendees Validation Workshop in Costa Rica

SISTEMA DE GESTIÓN DE CALIDAD FORMULARIO SP-3		Lista de Asistencia					
Nombre de la institución: Centro de Estudios para el Desarrollo del Sector Agrario y Agropecuario (CENDES) - Universidad Nacional de Costa Rica							
Lugar: San Isidro, San Carlos, Costa Rica		Fecha: 08 y 09 de mayo 2022					
Nombre del Evento: Seminario sobre el Modelo de Gestión de la Calidad en el Sector Agrario		N° de insc.: 200 personas					
#	Nombre y apellido	Cédula	Representación	Móvil de Contacto*	Sexo	Edad	Nota
1	Dr. Oscar Arias	37015123	ICR-CR	37137123	M	45	[Handwritten signature]
2	Dr. Oscar Pérez	10200142	ICR-CR	10200142	M	45	[Handwritten signature]
3	Dr. Jorge Castro	10001100	ICR-CR	10001100	M	45	[Handwritten signature]
4	J. Oscar Abenda	10150123	ICR-CR	10150123	M	45	[Handwritten signature]
5	Edison Chaves	2001234	ANEP	2001234	M	45	[Handwritten signature]

#	Nombre y apellido	Cédula	Representación	Móvil de Contacto*	Sexo	Edad	Nota
1	Wendy Rivas	2001234	ANEP	2001234	M	45	[Handwritten signature]
2	Mayra Salas	1001234	ANEP	1001234	M	45	[Handwritten signature]
3	Dr. María B.	1001234	ANEP	1001234	M	45	[Handwritten signature]
4	Carla Cortez	1001234	ANEP	1001234	M	45	[Handwritten signature]
5	Juan Carlos Salas	1001234	ANEP	1001234	M	45	[Handwritten signature]
6	Eduardo Rojas	1001234	ANEP	1001234	M	45	[Handwritten signature]
7	Yvonne Soto	1001234	ANEP	1001234	M	45	[Handwritten signature]
8	Yvonne Soto	1001234	ANEP	1001234	M	45	[Handwritten signature]
9	Yvonne Soto	1001234	ANEP	1001234	M	45	[Handwritten signature]
10	Yvonne Soto	1001234	ANEP	1001234	M	45	[Handwritten signature]
11	Yvonne Soto	1001234	ANEP	1001234	M	45	[Handwritten signature]
12	Yvonne Soto	1001234	ANEP	1001234	M	45	[Handwritten signature]
13	Yvonne Soto	1001234	ANEP	1001234	M	45	[Handwritten signature]
14	Yvonne Soto	1001234	ANEP	1001234	M	45	[Handwritten signature]
15	Yvonne Soto	1001234	ANEP	1001234	M	45	[Handwritten signature]
16	Yvonne Soto	1001234	ANEP	1001234	M	45	[Handwritten signature]
17	Yvonne Soto	1001234	ANEP	1001234	M	45	[Handwritten signature]
18	Yvonne Soto	1001234	ANEP	1001234	M	45	[Handwritten signature]
19	Yvonne Soto	1001234	ANEP	1001234	M	45	[Handwritten signature]
20	Yvonne Soto	1001234	ANEP	1001234	M	45	[Handwritten signature]

#	Nombre y apellido	Cédula	Representación	Móvil de Contacto*	Sexo	Edad	Nota
17	Yvonne Soto	1001234	ANEP	1001234	M	45	[Handwritten signature]
18	Yvonne Soto	1001234	ANEP	1001234	M	45	[Handwritten signature]
19	Yvonne Soto	1001234	ANEP	1001234	M	45	[Handwritten signature]
20	Yvonne Soto	1001234	ANEP	1001234	M	45	[Handwritten signature]
21	Yvonne Soto	1001234	ANEP	1001234	M	45	[Handwritten signature]
22	Yvonne Soto	1001234	ANEP	1001234	M	45	[Handwritten signature]
23	Yvonne Soto	1001234	ANEP	1001234	M	45	[Handwritten signature]
24	Yvonne Soto	1001234	ANEP	1001234	M	45	[Handwritten signature]
25	Yvonne Soto	1001234	ANEP	1001234	M	45	[Handwritten signature]
26	Yvonne Soto	1001234	ANEP	1001234	M	45	[Handwritten signature]
27	Yvonne Soto	1001234	ANEP	1001234	M	45	[Handwritten signature]
28	Yvonne Soto	1001234	ANEP	1001234	M	45	[Handwritten signature]
29	Yvonne Soto	1001234	ANEP	1001234	M	45	[Handwritten signature]
30	Yvonne Soto	1001234	ANEP	1001234	M	45	[Handwritten signature]

#	Nombre y apellido	Cédula	Representación	Móvil de Contacto*	Sexo	Edad	Nota
31	Yvonne Soto	1001234	ANEP	1001234	M	45	[Handwritten signature]
32	Yvonne Soto	1001234	ANEP	1001234	M	45	[Handwritten signature]
33	Yvonne Soto	1001234	ANEP	1001234	M	45	[Handwritten signature]
34	Yvonne Soto	1001234	ANEP	1001234	M	45	[Handwritten signature]
35	Yvonne Soto	1001234	ANEP	1001234	M	45	[Handwritten signature]
36	Yvonne Soto	1001234	ANEP	1001234	M	45	[Handwritten signature]
37	Yvonne Soto	1001234	ANEP	1001234	M	45	[Handwritten signature]
38	Yvonne Soto	1001234	ANEP	1001234	M	45	[Handwritten signature]
39	Yvonne Soto	1001234	ANEP	1001234	M	45	[Handwritten signature]
40	Yvonne Soto	1001234	ANEP	1001234	M	45	[Handwritten signature]

2ND VALIDATION WORKSHOP

Date: June 16, 2022
 Venue: Tegucigalpa, Honduras
 Participants: 20 persons.



Figure VI. Images from the validation workshop in Honduras

Attendance register in Honduras

#	Nombre y apellido	Cédula	Representación	Móvil de Contacto*	Sexo	Edad	Nota
1	Dr. Oscar Arias	37015123	ICR-CR	37137123	M	45	[Handwritten signature]
2	Dr. Oscar Pérez	10200142	ICR-CR	10200142	M	45	[Handwritten signature]
3	Dr. Jorge Castro	10001100	ICR-CR	10001100	M	45	[Handwritten signature]
4	J. Oscar Abenda	10150123	ICR-CR	10150123	M	45	[Handwritten signature]
5	Edison Chaves	2001234	ANEP	2001234	M	45	[Handwritten signature]
6	Wendy Rivas	2001234	ANEP	2001234	M	45	[Handwritten signature]
7	Mayra Salas	1001234	ANEP	1001234	M	45	[Handwritten signature]
8	Dr. María B.	1001234	ANEP	1001234	M	45	[Handwritten signature]
9	Carla Cortez	1001234	ANEP	1001234	M	45	[Handwritten signature]
10	Juan Carlos Salas	1001234	ANEP	1001234	M	45	[Handwritten signature]
11	Eduardo Rojas	1001234	ANEP	1001234	M	45	[Handwritten signature]
12	Yvonne Soto	1001234	ANEP	1001234	M	45	[Handwritten signature]
13	Yvonne Soto	1001234	ANEP	1001234	M	45	[Handwritten signature]
14	Yvonne Soto	1001234	ANEP	1001234	M	45	[Handwritten signature]
15	Yvonne Soto	1001234	ANEP	1001234	M	45	[Handwritten signature]
16	Yvonne Soto	1001234	ANEP	1001234	M	45	[Handwritten signature]
17	Yvonne Soto	1001234	ANEP	1001234	M	45	[Handwritten signature]
18	Yvonne Soto	1001234	ANEP	1001234	M	45	[Handwritten signature]
19	Yvonne Soto	1001234	ANEP	1001234	M	45	[Handwritten signature]
20	Yvonne Soto	1001234	ANEP	1001234	M	45	[Handwritten signature]

3RD VALIDATION WORKSHOP

Date: June 20 and 21, 2022

Venue: Santo Domingo, República Dominicana.

Participants: : 21 people (see annex).



Figure VII. Participants at the validation workshop in República Dominicana



Figure VIII. Photo from the visit to a dairy farm during the Lecheck validation workshop in República Dominicana

Attendance register in Honduras

Registro de Participantes	
Datos Generales	
Nombre: Taller Nacional Lechechek Agrotech	
Fecha: 20 y 21 de Junio de 2022	
Lugar: Santo Domingo, República Dominicana	
Organización: INTA	
Organizado por: INTA	
Patrocinado por: INTA	
Asistencia: 21 personas	
Detalle de Participantes	
Nombre y Apellido	Organización
[Handwritten names]	[Handwritten organizations]

4TH VALIDATION WORKSHOP

Date:

Venue: August 25th and 26th, 2022 Rafaela, Santa Fe, Argentina.

Participants: : 17 people representing INTA, companies, and the Ministry of the Province of Santa Fe.



Figure IX. Participants at the validation workshop in República Dominicana

Validation Workshop in Argentina

List of Attendance

Presentación y Taller de Validación de la App LÉCHECK			
Proyecto "Agtech para Lechería Clínicamente Inteligente", 25 de agosto 2022- INTA EEA Rafaela (Santa Fe)			
Nombre y Apellido	Institución/Empresa	Email	Firma
[Handwritten name]	INTA	[Handwritten email]	[Handwritten signature]
[Handwritten name]	[Handwritten company]	[Handwritten email]	[Handwritten signature]
[Handwritten name]	[Handwritten company]	[Handwritten email]	[Handwritten signature]
[Handwritten name]	[Handwritten company]	[Handwritten email]	[Handwritten signature]
[Handwritten name]	[Handwritten company]	[Handwritten email]	[Handwritten signature]
[Handwritten name]	[Handwritten company]	[Handwritten email]	[Handwritten signature]
[Handwritten name]	[Handwritten company]	[Handwritten email]	[Handwritten signature]
[Handwritten name]	[Handwritten company]	[Handwritten email]	[Handwritten signature]
[Handwritten name]	[Handwritten company]	[Handwritten email]	[Handwritten signature]
[Handwritten name]	[Handwritten company]	[Handwritten email]	[Handwritten signature]

5th VALIDATION WORKSHOP

Date: August 31st, 2022

Venue: Colonia del Sacramento, Uruguay

Participants: 15 people representing INIA, companies, dairy farmers, the Ministry of Agriculture and GRA (see details in the annex).



Figure X. Photo from the participants at the validation workshop in Uruguay

Validation Workshop in Uruguay List of Attendance

Nombre	Institución	Correo electrónico
Antonio López	INIA	antonio.lopez@inia.gub.uy
María Elena López	INIA	mariaelena.lopez@inia.gub.uy
María Elena López	INIA	mariaelena.lopez@inia.gub.uy
María Elena López	INIA	mariaelena.lopez@inia.gub.uy
María Elena López	INIA	mariaelena.lopez@inia.gub.uy
María Elena López	INIA	mariaelena.lopez@inia.gub.uy
María Elena López	INIA	mariaelena.lopez@inia.gub.uy
María Elena López	INIA	mariaelena.lopez@inia.gub.uy
María Elena López	INIA	mariaelena.lopez@inia.gub.uy
María Elena López	INIA	mariaelena.lopez@inia.gub.uy
María Elena López	INIA	mariaelena.lopez@inia.gub.uy
María Elena López	INIA	mariaelena.lopez@inia.gub.uy
María Elena López	INIA	mariaelena.lopez@inia.gub.uy
María Elena López	INIA	mariaelena.lopez@inia.gub.uy
María Elena López	INIA	mariaelena.lopez@inia.gub.uy

ANNEX III

1- Project contents page

- Data on indicators, participants, general information on the project, data, and the researchers' pictures and 3 articles in "What's new in the project" were completed. <https://www.fontagro.org/new/proyectos/lecheria-climaticamente-inteligente/es>

2- Web stories, Fontagro Tech and posters were completed.

3- Videos:

- 6 <https://youtube.com/@lecheriaclimaticamenteinte3322>

4- Networks

The tracking for the project networks is shown below:

- Twitter (61 following / 102 followers) - 106 posts (Tweets and Retweets). https://twitter.com/Agtech_ELCLI
- Facebook (1500 likes / 1500 followers) - 61 posts. <https://www.facebook.com/agtech.ELCLI>
- YouTube channel (136 views) - 6 videos. (640 followers, 11500 views) 46 posts.

The networks total 2242 followers, 13,136 visits and 219 posts.

5- Publications on the FONTAGRO website.

- Available at <https://www.fontagro.org/new/proyectos/lecheriaclimaticamente-inteligente/es>

2021

- What would you name our app? campaign. December 7, 2021.
- Internal workshop on Dairy Farming and Climate Change. April 30, 2021.
- Meeting to close and consolidate the Good Practices for CSDF. August 24, 2021.

2022

LECHECK has been integrated into the Bank of low-cost and/or local resource-based technological solutions of the

A platform for Climate Action in Agriculture in Latin America and the Caribbean (PLACA). November 28, 2022.

- Lecheck validation stage. September 13, 2022.
- Lecheck app validation workshop in Argentina. August 1, 2022.
- Interviews with our researchers. August 13, 2022.
- Catalogue of innovations in the livestock sector in Latin America and the Caribbean. August 25, 2022.
- Good Practice Guide for Climate-Smart Dairy Farms. Blog. June 21, 2022.
- Lecheck app launch. Blog. June 21, 2022.
- Validation workshop and Lecheck app launch. May 30, 2022.

6- Other dissemination products

6.1 Communications submitted to academic and R&D events:

2021

- Aimar M, ...Negri L. Agtech digital tools for a climate-smart dairy. In IX Jornadas Integradas de Investigación, Extensión y Enseñanza de la Facultad de Ciencias Agropecuarias. Córdoba, Argentina. November 14 and 15, 2021.
- Aimar V, ...Negri L. Good practices in milk production with potential impact on productivity, adaptation, and mitigation to climate change. In IX Jornadas Integradas de Investigación, Extensión y Enseñanza de la Facultad de Ciencias Agropecuarias.
- Negri L, ... Aimar V. Consensus process of Good Practices for Climate-Smart Dairy Farms in Latin America and the Caribbean. In IX Jornadas Integradas de Investigación, Extensión y Enseñanza de la Facultad de Ciencias Agropecuarias. Córdoba, Argentina. November 14-15, 2021.

2022

- Aimar, M.V., Tentor, G., Deza, C., Loza, P., Pedraza, M.B. Negri. L.M. 2022. Implementation of Good Practices on dairy farms in the Province of Córdoba (Argentina): improvement in aspects related to the environment. III International Congress CATUMBARÍ, Colombia. November 20-23. Opio, C. y Sangoluisa Rodriguez, P. 2022. Innovaciones en el sector ganadero; Compendio de experiencias en América Latina y el Caribe 2021. Panamá, FAO e IICA. <https://doi.org/10.4060/cc0876es>

- Negri, L. and Aimar V. 2022. Good dairy practices and their role in climate change adaptation and mitigation. Satellite activity in the 45th AAPA Congress, November 17. 51 attendees
- Aimar, V. 2022. Pre-congress course on Animal Welfare on Dairy Farms. November 9 to 11, 2022, Montevideo, Uruguay. 22 attendees.

6.2 Project presentations at meetings/events.

2021

- Negri L. and Aimar V. Presentation of the Agtech Project for Climate-Smart Dairy. Meeting of the Dairy Commission for the Good Practices Network. March 10, 2021. Attendees (15): representatives from the dairy sector in Argentina, chambers, governmental bodies, companies, and universities.
- Negri L. and Aimar V. Project Launching Event. Zoom meeting. December 17, 2020, with the participation of authorities from the co-executing organizations and the project executor, as well as Fontagro's Technical Administrative Secretariat and GRA representative. A video summarizing the event can be found on YouTube at <https://www.youtube.com/watch?v=LSYXBPQX314>
- García F., Tieri M.P., Faverín C. 1 Workshop on Climate Change and Dairy Farming. Zoom Meeting for the project team members. February 24. Participants: 16.

2022

- Aimar, V. and Negri, L. 2022. App Development for climate-smart dairy farms. II Latin American Congress on Precision Agriculture (CLAP 2022) and 19th INTA-Agtech Training Meeting. March 30-31 and April 1. Manfredi, Córdoba, Argentina.
- Negri, L. 2022. Traceability and Sustainability in the Digital Transformation of Agriculture, 2nd Edition. Buenos Aires, Argentina. Hybrid event. 227 views.
- Negri, L. 2022. Lecheck. Innovative Projects and Solutions Panel at the Digital Revolution in Agriculture event organized by the Technological University, Durazno, Uruguay, on November 3. 21 attendees
- Negri, L. 2022. Workshop on validation and training of technicians in the Lecheck app. Colonia, Uruguay.
 - organized by INIA and INTA Argentina. August 31 and September 1. 29 attendees.
- Negri, L. 2022. Validation and training workshop for technicians in the Lecheck app. Rafaela, Santa Fe. 19 attendees. August 25 and 26. Organized by INTA Argentina.
- Negri, L. 2022. Digitalisation of agriculture. INTA Argentina Main Areas. At the Workshop "Contribution to the digitization processes of the agricultural sector in the region". Organized by PROCISUR, Montevideo, Uruguay. July 13 and 14. 13 participants.
- Negri, L. 2022. Latin America and the Caribbean move towards a Climate-Smart Dairy. At the XVII Fontagro Project Monitoring Workshop. Organized by FONTAGRO, INTA Argentina. Mendoza, Argentina. 70 attendees.
- Negri, L. 2022. Workshop for validation and training of technicians in the Lecheck app. Santo Domingo, República Dominicana. 29 attendees. June 20. Organized by IDIAF and INTA Argentina.
- Negri, L. 2022. Workshop for validation and training of technicians in the Lecheck app. Tegucigalpa, Honduras. 21 attendees. June 16. Organized by CAHLE Honduras and INTA Argentina.

- Negri, L. 2022. Launching of the LECHECK app. In the IICA's Digitization Week, at IICA Headquarters, San José, Costa Rica. Hybrid event. 210 attendees online and 20 in-person.
- <https://www.youtube.com/watch?v=ExWqIJOp3dk> May 20.
- -Negri L. 2022. Co-executors Workshop for the validation of the Lecheck app for the Ministry of Agriculture and Livestock agents, San Carlos, Costa Rica. 60 participants. May 16 to 19. Organized by INTA Costa Rica and INTA Argentina.
- Mancuso, W. 2022. "Good Dairy Practices and use of Lecheck". Agricultural Sciences School. UNER. Entre Rios,
- Argentina. November 2. 35 attendees

IDB Grant Financing at a Glance





Inter-American Development Bank
www.iadb.org