



Food and Agriculture
Organization of the
United Nations



AG:GCP/GLO/779/IFA
Terminal Report

FAO/GOVERNMENT COOPERATIVE PROGRAMME

PASTORALISTS-DRIVEN DATA MANAGEMENT SYSTEM

GLOBAL:
ARGENTINA, CHAD AND MONGOLIA

PROJECT FINDINGS AND RECOMMENDATIONS

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

ROME, 2020

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Report prepared for
the participating governments
by
the Food and Agriculture Organization of the United Nations

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

Rome, 2020

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LIST OF ABBREVIATIONS

AFED	-	Aimag Federation of Pasture User Groups
AGAG	-	Animal Production and Genetics Branch
APESS	-	<i>Association pour la promotion de l'élevage au Sahel et en Savane</i> (Association for the Promotion of Livestock in the Sahel and Savannah)
CAPI	-	Computer-Assisted Personal Interviewing
CILSS	-	<i>Comité Permanent Inter-Etats de Lutte contre la Sécheresse dans le Sahel</i> (Permanent Interstate Committee for Drought Control in the Sahel)
CIRAD	-	<i>Centre de coopération internationale en recherche agronomique pour le développement</i> (Agricultural Research Centre for International Development)
CSO	-	Civil Society Organization
GCP	-	Government Cooperative Programme
GDP	-	Gross Domestic Product
GPS	-	Global Positioning System
IFAD	-	International Fund for Agricultural Development
ILC	-	International Land Coalition
IT	-	Information technology
LOA	-	Letter of Agreement
MANIP	-	Mongolian Alliance of Nomadic and Indigenous Peoples
MAW	-	Major Areas of Work
MOFALI	-	Ministry of Food, Agriculture and Light Industry
NFPUG	-	National Federation of Pasture User Groups

OPTIM-AOC	-	<i>Observatoire des terres de parcours et de l'intégrité des couloirs de transhumance et commerciaux pour la mobilité du bétail en Afrique sahélienne de l'Ouest et du Centre</i> (Observatory of rangelands and the integrity of transhumance and commercial corridors for livestock mobility in West and Central Sahelian Africa)
PKH	-	Pastoralist Knowledge Hub
PRAPS	-	Regional Project to Support Pastoralism in the Sahel (<i>Projet régional d'appui au pastoralisme au Sahel</i>)
PREDIP	-	<i>Projet régional de dialogue et d'investissement pour le pastoralisme et la transhumance au Sahel et dans les pays côtiers de l'Afrique de L'Ouest</i> (Regional dialogue and investment project for pastoralism and transhumance in the Sahel and in the coastal countries of West Africa)
PRODECCA	-	<i>Programa de Desarrollo de las Cadenas Caprinas</i> (Goat Value Chain Development Program)
PUG	-	Pasture User Group
RBM	-	<i>Réseau Bilital Maroobé</i>
SDC	-	Swiss Agency for Development and Cooperation
SDG	-	Sustainable Development Goal
SIPSA	-	Information System on Pastoralism in the Sahel
SO	-	Strategic Objective
WISP	-	World Initiative for Sustainable Pastoralism

A. OVERVIEW

A.1 PROJECT PROFILE

Country	Global: Argentina, Chad and Mongolia	
Project Symbol	GCP/GLO/779/IFA	
Project Title	Pastoralists-driven data management system	
Resource Partner	International Fund for Agricultural Development (IFAD)	
Actual EOD	1 January 2017	
Actual NTE	30 September 2019	
Participating Organizations (e.g. Ministry of Agriculture, etc.)	Ministries of Agriculture and Livestock of Argentina, Chad and Mongolia	
Implementing Partners (List):		
Name	Type (NGO/Community Based Organization/Gov.)	Total Funds Transferred
<i>Fundación Gran Chaco</i>	Community-based Organization	USD 71 320
<i>Réseau Billital Maroobé (RBM)</i>	Community-based Organization	USD 77 094
Mongolian National Federation of Pasture User Groups (NFPUG)	Community-based Organization	USD 63 727
Agricultural Research Centre for International Development (<i>Centre de coopération internationale en recherche agronomique pour le développement [CIRAD]</i>)	Research Institute	USD 85 000
Contribution to FAO's Strategic Framework		
<i>Indicate the title of each higher level result to which the project contributes</i>		
Sustainable Development Goals (SDGs)	The project contributes to SDG 1 (No poverty), SDG 13 (Climate action) and SDG 15 (Life on land), through the achievement of the outcomes listed below under Objective 2 of the FAO Strategic framework.	
Organizational Outcome(s)	Strategic Objective 2 (SO2)/Organizational Outcomes: 2.03 - Stakeholders develop, adopt and implement international governance mechanisms and related instruments (standards, guidelines, recommendations, etc.), which are needed to improve and increase provision of goods and services in agricultural sector production systems in a	

	<p>sustainable manner.</p> <p>2.04 - Stakeholders make evidence-based decisions in the planning and management of the agricultural sectors and natural resources to support the transition to sustainable agricultural sector production systems through monitoring, statistics, assessment and analyses.</p> <p>Major Areas of Work (MAW): “Ecosystem services and biodiversity for food and agriculture” and “Monitoring for development”. Indicators: 20303 - Stakeholders are supported to facilitate implementation and application of international (including regional) instruments and the recommendations/requirements of related governance mechanisms; 20403 relates to capacity-development support provided to institutions at national or regional level to plan for and conduct data collection, analysis, application and dissemination</p>
Regional Priority Area/Initiative	Regional Initiative/Priority Area: SO2 in Africa: sustainable production intensification and value-chain development in Africa.
Country Programming Framework Outcome(s)	<p>Country Programming Framework(s) Output(s):</p> <p><u>Mongolia</u> - Priority Area 1: Promotion of sustainable livestock development through improved quality, health, and productivity of livestock and increased pasture, feed, fodder, and water supply;</p> <p><u>Chad</u>: Priority Area 2: Disaster Risk Prevention and Management. Outcome 2: The resilience of vulnerable populations to threats and crises is enhanced. Output 2.1: Chad has an effective information system;</p> <p><u>Argentina</u>: No CPF available.</p>
UNDAF Outcome(s)	N/A

A.2 FINANCIAL DATA in USD¹

(as at: 30 September 2019)

Budget	USD 450 000
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¹ Data source: FPMIS/ Data Warehouse.

A.3 EXECUTIVE SUMMARY

Basic information is lacking about many pastoralist areas in the world. As a result, many services, programmes and policies do not effectively address the needs of pastoralist communities. The Government Cooperative Programme (GCP) project GCP/GLO/779/IFA, “Pastoralists-driven data management system”, was based on the idea that pastoralist associations could themselves collect, manage and share data from among their communities. This information could then be used to advocate for better targeted and pastoralist-friendly policies at local, national and international level.

The project aimed at strengthening the capacities of pastoral organizations in data collection and analysis and information management, in order to facilitate evidence-based policy decision-making. It was implemented in Argentina, Chad and Mongolia, managed by the Pastoralist Knowledge Hub (PKH), and supported by the *Centre de coopération internationale en recherche agronomique pour le développement* (Agricultural Research Centre for International Development [CIRAD]). In the field, the project was implemented by the following pastoralist organizations: *Fundación Gran Chaco* (Argentina), *Réseau Billital Maroobé* ([RBM] Chad), and the National Federation of Pasture User Groups ([NFPUG] Mongolia).

The project was successful in strengthening the capacities of the three pastoralist organizations, which conducted surveys among the pastoralist communities of their respective countries autonomously. An innovative approach for collecting data was developed through close partnership among the stakeholders involved, and was adopted during two successive surveys. The two questionnaires for collecting data on pastoralism were discussed and adapted to the national contexts, through the contribution of the participants and their deep knowledge of the field. This was one of the most innovative and successful aspects of the project, i.e. the pertinence of the method, as a result of the proactive involvement of the beneficiaries.

The first survey, which aimed to identify and describe the pastoralist population, gathered information on 112 957 households in Mongolia, 8 938 in Chad, and 6 532 in Argentina. The second survey, which was more in-depth and aimed to assess the pastoralist economy and its contribution to the national economies, was conducted on a sample (based on the results of the first survey) of 1 938 households in Mongolia, 1 010 in Chad, and 1 198 in Argentina. As well as demonstrating that pastoralist organizations had the potential to successfully manage data, the surveys revealed the actual contribution of pastoralism to the economies of participating countries. In particular, they showed that pastoralism contributed

to the national economies more than studies usually indicated, as, owing to specific characteristics, such as high levels of self-consumption, pastoralists' contribution to Gross Domestic Product (GDP) was often underestimated². During the project, it emerged that pastoralism could contribute up to 27 percent to the GDP of Chad, and up to 12 percent in Argentina and Mongolia. The data also revealed wide inequalities in pastoralist contexts, resulting from deep inequities in resource access (land and natural resources, social services, infrastructures, etc.). All the information collected is freely accessible and available for the three organizations, which will be able to disseminate it and use it to advocate for their needs and concerns.

Throughout the project, the representatives of the pastoralist organizations were in charge of training their peers, through adapted capacity-building systems, from plenary training sessions to cascade approaches. In this context, the overall implementation of activities involved primarily the pastoralists themselves, not as beneficiaries but as active stakeholders and protagonists. As a result of this approach, their technical skills in information management increased, as well as awareness about their rights and the desire to claim recognition. Through the project, the three pastoralist organizations established core teams of people trained on the implemented approach (around 300 people in Mongolia, 14 in Chad, and 43 in Argentina), as well as one or two supervisors, who are now qualified to organize similar large data management operations in the future. These are key aspects for the sustainability and long-term effectiveness of the project results.

In addition, the three pastoralist organizations increased their information exchanges with the national authorities (ministries of livestock and statistics) and research institutes. This included signing a contract with the government to cross-check available information (Mongolia), and organizing end-of-project forums to present and disseminate the project results to national stakeholders (Argentina and Chad). The project also supported the participation of three pastoralist representatives in three different international/regional forums (in Mexico, Senegal and Mongolia), thus broadening their opportunities to advocate for pastoralism.

² For comprehensive reviews of the knowledge gaps relating to pastoralism, see, for instance:

- Hatfield and Davies (2007), *Global Review of the Economics of Pastoralism*, WISP and IUCN, Nairobi);
- Pica-Ciamarra, U., Baker, D., Morgan, N., Zezza, A., Azzarri, C., Ly, C., Nsiima, L., Nouala, S., Okello, P., Sserugga, J., 2014. Investing in the livestock sector. Why good numbers matter. A sourcebook for decision makers on how to improve livestock data. World Bank Report No: 85732 –GLB. Washington DC: World Bank.

B. RELEVANCE

The problem

Project rationale

Comprehensive and meaningful data is the basis for well-informed decision-making and planning. Basic information is, however, lacking about many pastoralist areas in the world. This includes socio-economic data, information on natural resource use and management, livelihood practices, and herd composition and health. As a result, many services, programmes and policies do not effectively address the needs of pastoralist communities.

Between 200 and 500 million pastoralists worldwide practice extensive livestock herding to produce food on rangelands that cover over a third of the Earth's surface. Research provides increasing evidence that pastoralism is one of the most sustainable forms of agriculture in areas where no crops can grow, ensuring the livelihoods of not only pastoralists, but also neighbouring communities, and providing valuable ecosystem services³. Basic data is needed for any type of intervention aiming to make pastoral systems more resilient and productive, and to provide services that are adapted to mobile livelihoods.

Recognition that pastoralism is a form of global adaptation to the unique conditions of rangelands has contributed greatly to the acceptance of the viability of pastoralism, and has opened the door to many innovations to strengthen pastoralist livelihoods in developing countries. Another challenge is pastoralists' own engagement at the policy level. They have initiated networking processes later than other producer groups, such as small crop farmers or fishers. Their remoteness and the often transboundary nature of their livelihoods have made it challenging to access services and engage in decision-making. Their self-sufficiency, mobility and different culture make them a unique constituency, which often does not engage in dialogue with policy-makers. Currently, pastoralist Civil Society Organizations (CSOs) are requesting greater recognition and becoming better organized, and wish to engage in policy dialogue.

In addition, the lack of data on pastoralism poses challenges at various levels. Animal health and disease surveillance programmes are difficult to plan if pastoral migratory routes are not taken into account, or if the number of livestock heads is unknown. Social services that are adapted to pastoral mobility cannot be designed if governments do not know exactly how many pastoralists there are. Data on the economic contribution of pastoralism to value chains and economic performance indicators are largely lacking, hindering the measurement of Sustainable Development Goals (SDGs) targets.

³ See, for example, Blench R., 2001. *You can't go home again'. Pastoralism in the new millennium*, ODI Report, FAO, 106 p.

Recognition of these opportunities and challenges, and international investments (e.g. from the International Fund for Agricultural Development [IFAD] and the World Bank) in pastoral areas has increased over the past years. However, detailed and reliable information, although essential to investors, is still lacking to monitor trends in pastoral areas and to provide adequate support to public policy planning process, and to the development of strategies designed to meet the specific needs of pastoral communities and stakeholders. The Information System on Pastoralism in the Sahel (SIPSA) is an example of how research and international organizations have tried to address this lack of information. These types of initiatives should be generalized across regions, and in a more sustainable way.

The response

The project was based on the idea that pastoralist associations could themselves collect, manage and share data from among their communities. It aimed to directly support pastoralist associations, organizations, movements and networks in improving their representation, by providing quality data and information. Pastoralist organizations, as key stakeholders, are in the best position to reach out to pastoralist communities, promote their growth and development, and advocate for better targeted and pastoralist-friendly policies at local, national and international levels.

The project, financed by IFAD, focused on three countries where pastoralism plays an important role: Argentina, Chad and Mongolia. These countries were selected on the basis of the importance of pastoralism for agriculture. They represented a wide range of different ecosystems and environmental conditions affecting pastoral activities, and could be considered as a key representation of the related pastoral regions (Central Asia, Chaco Region and West Africa).

Impact, outcomes and outputs

The project was conceived as part of a larger and longer-term intervention in support of pastoralist networks, and involved the following impact, outcomes and outputs/activities:

- Impact: Increase knowledge, awareness and recognition of pastoral production for poverty alleviation and food security.
- Outcome: Strengthen capacities of civil society organizations for pastoral data collection and analysis and information management to facilitate evidence-based policy decision-making.
- Output 1: Pastoralist organizations contribute effectively in the collection of policy and management relevant data on pastoralism in support of the SDGs and their

indicators, especially SDG targets 1.4 and 2.3. Three pastoral organizations participate and contribute to baseline data gathering, land tenure mapping and measurement of the contribution of pastoralism to the national economies.

- Output 2: Pastoralist networks and organizations play an active role in knowledge management. Three pastoralist organizations provide information and participate in a knowledge-sharing process through different platforms, discuss policy and technical topics, and agree on advocacy messages.
- Output 3: The global pastoral network is engaged and advocates internationally and nationally. Three pastoralist organizations participate in a number of global meetings, to strengthen their participation in policy dialogue on the international stage to advocate for their interests.

Planned activities

The planned activities are described below, under three specific components.

Component 1: Collection of policy relevant data on pastoralism

- Activity 1.1: Capacity building for pastoral organizations to collect and manage data.
- Activity 1.2: Improved data collection on the number of pastoralists and pastoral livestock and their access to basic services.
- Activity 1.3: Improved data collection on land tenure and status and use of natural resources, including rangelands and water.
- Activity 1.4: Improved data on the economic contribution of pastoralism to national economy.

Component 2: Pastoral-led knowledge management

- Activity 2.1: Pastoralist organizations and development partners share validated tools/methods and technical and policy information in a knowledge platform.
- Activity 2.2: Methods are developed together with pastoralist CSOs to define pastoralists and to assess the pastoral economy.

Component 3: Global pastoral network advocacy:

- Activity 3.1: Three stakeholder workshops are organized in selected regions.
- Activity 3.2: Pastoralist organizations use the discussion forum of the PKH to discuss policy and technical topics and agree on advocacy messages for delegates attending events.

- Activity 3.3: Pastoral representatives contribute to policy development.

Stakeholders

The project was managed by PKH, a comprehensive platform launched by FAO in 2014 to bring pastoralist networks and international actors together, in order to create synergies for dialogue on pastoralist development. The PKH facilitates an extensive network of pastoralist organizations and builds on FAO's technical capacities and knowledge of the Animal Production and Genetics Branch (AGAG) and the Livestock Information, Sector Analysis and Policy Branch of FAO's Animal Production and Health Division (AGA), and other divisions, such as the Statistics Division. The PKH has a unique position, in that it directly interacts with intergovernmental bodies and governments, and works together with pastoral CSOs, and has established a relationship based on trust. It also has partnerships with the main international organizations working on pastoralism, including IFAD, the World Initiative for Sustainable Pastoralism (WISP) of the International Union for Conservation of Nature, and the International Land Coalition (ILC).

The implementing partners for the project were key pastoral networks in the target countries: *Fundación Gran Chaco* in Argentina, the RBM in Chad and the NFPUG in Mongolia⁴. These three organizations are the largest and most representative pastoral organizations in their respective countries. They are all made up of members of pastoral communities, irrespective of age or gender. *Fundación Gran Chaco* is a network of 100 grassroots organizations representing about 20 000 families. Its objective is to promote the visibility of vital issues and collective actions in the *Gran Chaco Americano*, in order to improve governance of pastoral land?. The RBM is a West African network of pastoralists working to defend its members' concerns at an economic, politic, social and cultural level. Currently, it consists of 80 professional organizations (comprising 750 000 members) and acts in favour of 2.5 million beneficiaries. Its objective is to secure the pastoral economy by enhancing and following initiatives for the organization and adoption of technical innovations, and by striving to restore the balance between ecology and livestock. The Mongolian NFPUG is a federation of 1 300 herder groups (consisting of about 40 500 households), covering the whole Mongolian territory. It has numerous international partners (such as the World Bank, *Agronomes et Vétérinaires Sans Frontières* [Agronomists and Veterinarians without Borders] the United Nations Development Programme, the Swiss

⁴ The implementing partner for Mongolia, as foreseen by the Project Document, was originally the Mongolian Alliance of Nomadic and Indigenous Peoples (MANIP). However, owing to unforeseen events occurring between the formulation of the project and its implementation, the NFPUG was selected (for more details, please see Section D below).

Agency for Development and Cooperation [SDC], etc.), with which it has been implementing several projects and programmes related to pastoralism.

Synergies with other initiatives

The grant activities were foreseen to result in mutual benefits for both the grant implementing partners and the Project Implementation Units of related IFAD-financed projects, not only in the selected project areas, but also in other pastoral areas (e.g. Eastern Africa). Information exchange and meetings between IFAD and the project implementing stakeholders were held during the implementation period, to allow for potential joint activities and the sharing and evaluation of results.

The project built on existing monitoring systems at national and regional level, such as SIPSA, an information system on pastoralism in the Sahel developed by FAO and CIRAD. It is a decision support tool for anticipating, managing and monitoring changes in pastoralism and its interactions with the environment in six countries covered by the *Comité permanent Inter-États de Lutte Contre la Sécheresse dans le Sahel* ([CILSS] Permanent Interstate Committee for Drought Control in the Sahel): Burkina Faso, Chad, Mali, Mauritania, the Niger and Senegal. Another similar information system was the web platform *Observatoire des terres de parcours et de l'intégrité des couloirs de transhumance et commerciaux pour la mobilité du bétail en Afrique sahélienne de l'Ouest et du Centre* (Observatory of rangelands and the integrity of transhumance and commercial corridors for livestock mobility in West and Central Sahelian Africa [OPTIM-AOC]), which was an RBM initiative on pastoral mobility and land tenure information. The project also capitalized on the lessons learned from different initiatives conducted by the subregional institutions, including the CILSS, such as the *Projet régional d'appui au pastoralisme au Sahel* ([PRAPS] Regional Project to Support Pastoralism in the Sahel) and the *Projet régional de dialogue et d'investissement pour le pastoralisme et la transhumance au Sahel et dans les pays côtiers de l'Afrique de l'Ouest* ([PREDIP] Regional dialogue and investment project for pastoralism and transhumance in the Sahel and in the coastal countries of West Africa).

Experiences and initiatives in the Latin American Chaco region were taken into account for data collection on land tenure, such as the *Visor Gran Chaco*⁵, which is a regional joint initiative of institutions working in social and environmental management. Its main objective was to communicate the characteristics of the territory through activities carried out in different projects related to conservation and sustainable development. Similarly, the *Programa de Desarrollo de las Cadenas Caprinas* ([PRODECCA] Goat Chains Development

⁵ <http://visorgranchaco.org/>

Program) in Argentina aimed to monitor the vegetation cover in goat production areas. The grant built *Fundación Gran Chaco*'s capacity to access, analyse and share this data with its members.

The project also liaised with other initiatives led by the PKH, in particular with those providing support to pastoralist organizations to improve their representation in policy dialogue meetings globally. The outcomes of such meetings have raised greater interest in pastoralist representation, with spaces reserved in different international forums, such as the Committee on World Food Security, the United Nations Permanent Forum on Indigenous Issues, the United Nations Environment Programme General Assembly, IFAD's Forum for Indigenous Peoples and Farmers' Forum, and several consultations at FAO (both geographically and relating to wide involvement of the civil society). This greater space requires better organization and a higher involvement capacity.

In addition, the project liaised and promoted content through the PKH email-based forum, as well as through the WISP network, the emailing list of the Coalition of European Lobbies for Eastern African Pastoralism and ILC's Rangelands Initiative.

Official arrangements with governments

In accordance with FAO procedures, a project agreement was signed with relevant ministries (Ministry of Food, Agriculture and Light Industry [MOFALI] of Mongolia; Ministry of Livestock and Animal Production of Chad; Ministry of Social Development of Argentina). The related FAO country offices facilitated and drove the negotiations with the respective governments, and contributed to enhancing the involvement and ownership of the project by the national institutions.

Letters of Agreement with the implementing partners

Under the project, FAO signed Letters of Agreement (LOA) with the four implementing partners.

The three pastoralist organizations were in charge of the actual implementation of the project in the field, e.g. adapting the survey methodology to their national context, establishing and supervising a team of data collectors, validating the project results and developing clear policy messages. More specifically, the respective LOAs foresaw the following activities:

- reviewing available data on pastoralism and producing an analysis report before the survey launch;

- organizing and convening a national launch workshop, as well as several regional workshops, to train the data collectors;
- supporting, supervising and coordinating the data collection activities, and validating and managing the data received from the regions;
- contributing to developing a methodology (to analyse the pastoralist economy and to collect relevant data); and
- contributing to organizing results presentation meetings to diverse stakeholders, including government representatives.

The fourth LOA was signed with CIRAD, which was in charge of supporting the survey implementation, through the development of a method and analysis of the data, aimed at evaluating the contribution of pastoralism to the national economies. This LOA foresaw the following activities:

- developing, with technical support from FAO and in collaboration with the three pastoralist organizations, a methodology (questionnaire, sampling, definition of concepts, etc.) for collecting data on the pastoralist economy and the contribution of pastoralism to the national GDPs;
- participating in the three launch workshops/training sessions taking place in the three countries involved in the project, in order to contribute to training the necessary staff on the use and adaptation of data collection methods;
- providing scientific support during the survey implementation in the three countries;
- analysing the collected data on the pastoralist sector and its contribution to the national GDPs in each of the three countries; and
- participating in results presentation and validation sessions with FAO and the pastoralist organizations in the three countries.

Contribution of the project to the Sustainable Development Goals

The project sought to contribute to SDG 1 (No poverty), SDG 13 (Climate action) and SDG 15 (Life on land). More specifically, it aimed to increase knowledge, awareness and recognition for pastoralist communities, in order to provide them with tools to improve their income and food security, and combat climate change and uncertainty.

The project was aligned to ensure the achievement of FAO's five SOs, mainly SO2 (to increase and improve provision of goods and services from agriculture, forestry and fisheries in a sustainable manner), and was relevant for areas on "Ecosystem services and biodiversity for food and agriculture" and "Monitoring for development". The proposal was endorsed by FAO's Major Area of Work on Ecosystem Services and Biodiversity. It contributed to the

regional initiative in Africa, “Sustainable production intensification and value-chain development in Africa”. It also contributed directly to SO2 Output 2.3.3: “Stakeholders are supported to facilitate implementation and application of international (including regional) instruments and the recommendations/requirements of related governance mechanisms”. It related to capacity-development support provided to institutions at national or regional level (20303), and to capacity-development support provided to institutions at national or regional level to plan for and conduct data collection, analysis, application and dissemination (20403).

C. ACHIEVEMENT OF RESULTS

Results achieved

Outcome 1: Pastoralist organizations contribute effectively in the collection of policy and management relevant data on pastoralism in support of the SDGs and their indicators, especially SDG targets 1.4 and 2.3

An innovative approach for collecting data among mobile pastoralist households and for assessing their economic contribution to the national economies was developed. This was done through close partnership between FAO-PKH, CIRAD, and the three pastoralist organizations. The approach was innovative because: i) the questionnaires were developed specifically for pastoralist contexts, addressing pastoralism-specific issues that were not taken into account by normal censuses; ii) collaboration with pastoralist organizations in data collection activities made it possible to both enhance skills and acquire detailed and new information; and iii) the analysis of data took into account issues that were usually overlooked when assessing the contribution of producers to their countries, such as self-consumption as a key component of their gross income.

Methodological framework

During the project, pastoralism was defined through six key features: i) strategic long or short movements of herds; ii) the use of natural resources, mainly water and pastures; iii) the location in less favoured landscapes; iv) traditional knowledge about land, climate, and animal breeds; v) the exploitation of indigenous breeds; and vi) a particular lifestyle with socio-cultural norms and values related to livestock. Thus, “pastoralists” were defined as actors whose lifestyles were characterized by these six key features.

The approach was based on the Guidelines for the Enumeration of Nomadic and Semi-Nomadic (Transhumant) Livestock⁶, according to which two types of surveys could be used to enumerate nomadic and transhumance livestock, namely ground surveys and

⁶ Global Strategy. 2016. Guidelines for the Enumeration of Nomadic and Semi-Nomadic (Transhumant) Livestock. Available at: <http://gsars.org/wp-content/uploads/2016/08/Guidelines-for-the-Enumeration-of-Nomadic-and-Semi-Nomadic-Livestock-06.pdf>

aerial/satellite surveys. Given that aerial surveys are usually costly, require a high level of technical support, and are not able to gather information on other variables concerning livestock (breeds, age, sex) or households, ground surveys were conducted during the project. In ground surveys, livestock enumeration can be done with the support of the ethnic group or clan leaders and family networks, and by identifying and locating temporary seasonal camps of group members. Animals can be enumerated through the physical inspection of animals in herds and flocks (direct observation), or from the numbers reported by informants (interviews), using questionnaires to collect the number of livestock heads through herders' declarations.

To collect data for this project in Argentina, Chad and Mongolia, the method of ethnic groups was particularly useful, as it ensured that all groups were taken into account, and was facilitated by the collaboration of the three pastoralist organizations involved in the project. These organizations had an in-depth knowledge of the areas inhabited by pastoralists, and of their leaders, and fostered the cooperation of all groups.

The surveys were conducted by the pastoralist organizations themselves. Each of them relied on a highly variable number of enumerators (from 10 to more than one thousand), and on one or more supervisors validating the collected data. The enumerators were selected by the organizations based on their information technology (IT) skills, level of education, availability, interest, knowledge of the local pastoral communities, and relevant experiences and skills, including language and communication skills (for more details, please see sections below).

Data collection was split into two successive surveys. The first one had a two-fold objective, namely estimating the national pastoralist population, and providing the pastoralist organizations with an easy tool and basic skills to conduct surveys autonomously. Following each organization's capacity and possibilities, the first survey was carried out among a variable number of pastoralist households – from some thousands to more than one hundred thousand. A short questionnaire was submitted to a representative of each household, addressing the following topics: i) households' socio-demographic characteristics; ii) livestock numbers and ownership; iii) land tenure and access; and iv) water access and use.

The second survey was conducted on a sample of the pastoralist population, as estimated based on the previous survey. The aim was to gather information on the pastoralist economy and on the contribution of pastoralism to the national GDPs. The method (questionnaire, sampling, etc.) was defined through close collaboration among each pastoralist organization, CIRAD, and FAO (please see Output 2). The questionnaire was more in-depth and time-consuming than the first one, and involved between 1 000 and 2 000 households in

each country. The activity implementation process in each country is explained in more detail below.

Table 1: Timetable of data collection in Argentina, Chad and Mongolia

Country	Implementation period of the first survey	Implementation period of the second survey
Mongolia	June-December 2018	January-June 2019
Chad	March 2018-January 2019	March-June 2019
Argentina	October 2018-May 2019	July-September 2019

Computer-assisted data collection system

The surveys were conducted through a Computer-Assisted Personal Interviewing (CAPI) tool, in order to obtain and analyse the collected data in real time. For this purpose, before the survey implementation two different types of software were evaluated: Survey Solutions and Open Foris Collect. The advantages and disadvantages of these were taken into account, and are outlined below in Table 2.

Table 2: Comparison between two CAPI tools: Survey Solutions and Open Foris Collect

Features	Survey Solutions	Open Foris Collect
Origin	External (World Bank).	In-house (FAO's Forestry Department).
Accessibility	Low – need to request access credentials from the World Bank.	High – free and open-source for all.
Reliability	High – already successfully exploited for economic surveys.	Low – originally developed for forest inventories.
Confidentiality	Low – data have to be stocked in the World Bank's web server.	High – data can be stocked in FAO's internet server, in Google Drive, or in local hosts.
Flexibility	Low – no possibility to ask for software changes.	High – software developers available to make changes following the users' needs.

The Open Foris Collect software was chosen for collecting data among pastoralists, as it was easier to access and manage. It especially respected the principle of sustainability on which the project was based, as pastoral organizations are now able to use it by themselves under other data collection operations. The software was used by the data collectors in the field through tablets or smartphones. While interviewing the households, they entered the information directly into the mobile application. Once the interview was completed, they could send it through the same application to the central web server (<http://www.openforis.org/collect-pastoralism>), where the data were stocked and accessible to all users (from the pastoralist organizations, CIRAD, and FAO). The survey supervisors could then verify the correctness of the collected information. If any error was detected, they could correct it or ask the collector to check the information; otherwise, the interview was approved

and made ready for analysis. All the users could visualize in real time the ongoing process of data collection, but each type of user had different use permission, as follows: i) the collectors could only upload the completed interviews; ii) the supervisors could upload, validate, or send back interviews to the collectors; and iii) the administrators could accept or send back interviews, and marginally modify the survey.

The case of Mongolia: a widespread operation supported by a broad existing network

For the first survey, the Mongolian NFPUG targeted 159 219 pastoralist households living in the different *aimags*⁷. Given the large number of interviews to be conducted, the Federation printed out the questionnaires and distributed them to the Aimag Federation of Pasture User Groups (AFED)⁸. The executive directors of each AFED trained and provided the heads of the *sum*-level associations of Pasture User Groups (PUG)⁹ with the paper-based questionnaires, and they, in turn, did the same with the PUG leaders. Given that the PUG leaders could only conduct the survey in their own PUG¹⁰, the NFPUG collaborated with the MOFALI in order to conduct the survey also in areas not covered by the Federation. The MOFALI sent official letters to each *aimag* to invite the local representatives and the land managers to collaborate in the project. In total, around 1 200 data collectors were involved in the process, more than one thousand from the NFPUG, covering 50 percent of the national territory, and more than one hundred covering 30 percent of the territory. Of the 159 476 targeted households at the beginning, 112 957 interviews were completed (please see Table 3 below).

Table 3: Number of *sums* and households covered by the first survey in Mongolia

	<i>Aimags</i>	No. of targeted <i>sums</i>	No. of actually covered <i>sums</i>	No. of targeted households	No. of actually interviewed households	Survey performance rate (in %)
1	Arkhangai	18	18	14 562	12 079	83
2	Bayan-Ulgii	12	9	9 185	5 306	58
3	Bayankhongor	19	18	11 336	9 476	84
4	Bulgan	15	15	8 200	4 998	61
5	Govi-Altai	17	17	6 755	6 565	97
6	Govisumber	1	0	543	-	0
7	Darkhan-Uul	1	1	581	273	47
8	Dornogovi	13	13	3 893	3 010	77

⁷ In Mongolia, an *aimag* is the first-level administrative subdivision. The country currently has 21 *aimags*. Each *aimag* is divided into *sums* (the second-level administrative subdivision), which are in total 331.

⁸ The *aimag*-level bodies of the NFPUG.

⁹ Structured groups of herder households federated into the NFPUG.

¹⁰ The PUG being part of the NFPUG occupy only 159 *sums* of 331.

	<i>Aimags</i>	No. of targeted <i>sums</i>	No. of actually covered <i>sums</i>	No. of targeted households	No. of actually interviewed households	Survey performance rate (in %)
9	Dornod	13	13	4 470	3 800	85
10	Dundgovi	15	15	7 001	4 726	68
11	Zavkhan	23	21	8 875	4 863	55
12	Orkhon	1	1	547	257	47
13	Uvurkhangai	18	18	15 398	11 359	74
14	Umnugovi	16	16	6 058	5 524	91
15	Sukhbaatar	12	12	6 714	6 283	94
16	Selenge	16	16	4 540	3 300	73
17	Uvs	18	18	8 153	5 927	73
18	Tuv	26	26	11 596	8 997	78
19	Khovd	15	11	7 208	3 562	49
20	Khuvsgul	23	22	16 657	9 007	54
21	Khentii	17	16	7 204	3 645	51
Total		309	296	159 476	112 957	

The first data collection operation took place from March to June 2018, when the paper-based interviews were sent to the NFPUG headquarters in Ulaanbaatar. The data were subsequently entered into the Open Foris Collect server, through computers. This operation required a great deal of time and effort on the part of the Federation, which hired some students to accelerate the process.

With regard to the second survey, 1 938 pastoralist households from the 18 *aimags* were targeted, based on statistical requirements, as advised by CIRAD. To select the sample households, the NFPUG used maps created from the Global Positioning System (GPS) data collected through the first survey. The sample was made up of four different groups/types of households, based on their animal numbers. This survey involved a smaller number of collectors, only the *aimag* and *sum* leaders were involved, and the former gave paper-based questionnaires to the latter, to gather data from after the completed interviews and enter into the Open Foris Collect server. Each collector interviewed 10-15 households, and no more than one per day in areas such as the Gobi Desert, where households lived far apart. They were paid compensation, mainly covering travel expenses, in addition to their monthly salary paid by the NFPUG.

The case of Chad: a learning-by-doing experience leading to a new organization set-up

The first data collection operation in Chad was launched in March 2018, involving 14 collectors, and was originally planned for a duration of four months. However, the results of this first operation were not satisfactory, owing to low technical skills among the collectors

and a weak level of communication/collaboration between them and the national node of the RBM in Chad. Therefore, the RBM held another training and logistics session, which led to organizational changes, especially regarding the collectors' motivation and target. As a result, the data collection accelerated, and at the end of January 2019, 8 938 interviews were correctly conducted and uploaded on the Open Foris Collect server.

The second survey was carried out from March to June 2019 and targeted 1 066 pastoralist households, as recommended by CIRAD based on statistical requirements. The same 10 collectors were deployed throughout the national territory, and each of them was assigned to his native zone. The target regions were originally 15 of 23, but owing to unforeseen constraints, only 10 regions were covered. However, the data collection was successful, and 1 010 interviews were correctly conducted.

The case of Argentina: need for awareness about pastoralism

The survey implementation was particularly slow in Argentina, mainly because of insufficient awareness in the field and a lack of partnership among different institutions concerning pastoralism. Thus, *Fundación Gran Chaco* dedicated several months to a campaign of training/awareness raising in the different regions, with a representative travelling all around the country, organizing information meetings, and training those interested in contributing to the survey. This mobile campaign also helped *Fundación Gran Chaco* to better understand the reality in the field and strengthen its network at national level.

The database of the first survey was created through primary data collected in the field by volunteers and existing smaller databases, which had previously been created by grassroots organizations on the occasion of extraordinary events, such as droughts. The participant collectors were around 35, who used the Open Foris Collect mobile application through tablets or smartphones to interview the households. Each volunteer collected a highly variable number of interviews, from 30 to 200, depending on their possibilities, for a total of 6 532 records.

Most of the collectors for the first survey did not contribute to the second one. They were mainly from grassroots institutions and knew the field well, enabling them to reach a large number of households. However, they did not have the technical skills that were required for the second survey. Thus, *Fundación Gran Chaco* sought to involve data collectors with more specific technical expertise. However, the work that was carried out for the first survey contributed to creating a network of reliable people that would subsequently be selected as data collectors.

Through 10 small in-person training sessions, *Fundación Gran Chaco* trained around 20 data collectors, who in turn trained other colleagues. This process resulted in 43 data collectors trained and participating in the second survey, and in the completion of 1 198 interviews. They were paid on a performance basis. Most of them used paper-based questionnaires, and subsequently entered the data into the Open Foris Collect server. They faced some difficulties using the mobile application in the field, owing to a weak internet connection. Some of them filled in questionnaires in Word format and sent them to *Fundación Gran Chaco*, which collaborated with some interns to enter all the interviews into the server. Although this method slowed down the survey implementation, it also allowed for a double-checking process to better verify the correctness of the received information.

Survey results/relevance of data: the contribution of pastoralism to their countries is underestimated

As well as showing that pastoralist organizations have the potential to successfully handle multiple tasks related to data collection, the surveys led to remarkable results, which shed light on the actual contribution of pastoralism to the participating countries.

First, it was shown that, on the one hand, pastoralists know markets well, in the sense that they participate in markets in an opportune way, by balancing their short-term consumption needs and long-term herd-building strategy to meet future consumption. On the other hand, markets do not know pastoralists well, and the lack of a market-related enabling environment explains why business initiatives have difficulties setting up in most pastoral areas.

Second, the data revealed that pastoralists contribute to their national economies to a higher extent than studies usually showed, as, owing to specific characteristics, such as high levels of self-consumption, pastoralists' role in GDP creation was often underestimated. During the project, it emerged that pastoralism could contribute up to 27 percent to the GDP of Chad, and up to 12 percent in Argentina and Mongolia.

Third, the data revealed wide inequalities in pastoralist contexts, which were wider than those at national level. Despite the fact that pastoralist societies have always been considered as socially and economically egalitarian, in reality they are characterized by high levels of economic inequalities (illustrated by high Gini coefficients), resulting from deep inequities in resource access (land and natural resources, social services, infrastructures, etc.).

Last, it was demonstrated that through operating in a shock-prone environment, pastoralists had developed their own resource-based strategies (e.g. through mobility, family labour, asset sales). In other terms, they relied primarily on their own family resources and

social capital, thus dispelling the myth that they depended on official support coming from the state or other stakeholders. Detailed information on the survey results can be found in the report produced by CIRAD (see report annexed hereto).

Outcome 2: Pastoralist networks and organizations play an active role in knowledge management

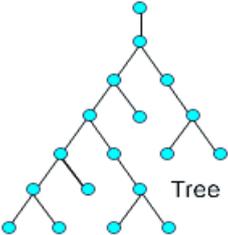
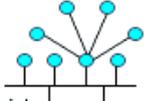
The project was designed on the basis that it was of utmost importance to strengthen the capacities of CSOs for pastoral data collection and analysis and information management, in order to facilitate evidence-based policy decision-making. For this reason, the overall implementation of activities involved primarily the pastoralists themselves, not as beneficiaries but as active stakeholders and protagonists. The project contributed to connecting the three implementing partners, both with each other and with FAO (headquarters and country representations) and CIRAD. By sharing opinions and ideas on the implementation of the project, and collecting data by themselves, the pastoralist organizations improved their knowledge on data collection tools and methods. This knowledge will be spread and managed within their networks.

As part of the capacity-building component, the strategy for data collection was developed in close collaboration with the three pastoralist organizations from the very beginning. A draft methodology was defined by CIRAD in collaboration with FAO, which was then shared and discussed with the RBM, the NFPUG, and *Fundación Gran Chaco* respectively during the launch meetings/training sessions held in the three countries. In Chad, the meeting took place in N'Djamena from 17 to 19 November 2017. During this workshop, 10 pastoralists from different regions of the country were trained on data collection methods, and contributed to improving and validating the methodology. In Mongolia, a national three-day workshop was organized in Ulaanbaatar from 26 to 28 February 2018, and was attended by 18 pastoral communities' representatives. In Argentina, the national workshop took place in Buenos Aires from 29 to 31 May 2018, and was attended by about 30 pastoralist representatives. The three launch meetings/training sessions were successful, with the participation of key stakeholders and partner institutions working on pastoralism in their respective countries. These meetings greatly involved the implementing partners, as well as the representatives of the pastoralist communities, who subsequently trained their peers at the regional workshops. The two questionnaires for collecting data on pastoralism were discussed and adapted to the national contexts, through the contribution of the participants and their deep knowledge of the field. This was one of the most innovative and successful aspects of the project, i.e. the pertinence of the method, as a result of the proactive involvement of the beneficiaries. Finally, the trainees had the opportunity to test the questionnaires through the tablets bought by the project¹¹ and the CAPI software Open Foris Collect Mobile. The members of these organizations were in charge of not only conducting the surveys, but also

¹¹ Between 14 and 18 tablets were bought for each country.

training their peers and supporting each other by sharing information, experiences and suggestions. For example, the data collectors of Chad created a WhatsApp group, with which they communicated with each other about the progress of the surveys, the social and political constraints they faced, possible solutions to problems, and ways of meeting their claims and needs. This contributed not only to the sustainability and long-term effectiveness of the project results, but also to creating a desire to claim recognition and rights. In-person and remote support was provided throughout the survey implementation by both FAO and CIRAD, to solve everyday issues relating to the survey design, the CAPI tool, logistics, etc.

Table 4: Capacity-building process of the three pastoralist organizations

	Mongolia	Chad	Argentina
Launch meeting/training (place and date)	Ulaanbaatar, February 2018	N'Djamena, November 2017	Buenos Aires, May 2018
Training method ¹²	 <p>Tree</p> <ul style="list-style-type: none"> • In-person and online training sessions held by the NFPUG for the <i>aimag</i> leaders; • the <i>aimag</i> leaders trained the <i>sum</i> leaders, who trained the PUG leaders. 	 <p>Star</p> <ul style="list-style-type: none"> • Five training sessions (three plenary in N'Djamena and two regional in Massakory and Abéché) held by RBM for 14 data collectors. 	 <p>Hybrid</p> <ul style="list-style-type: none"> • For the first survey, 22 in-person large information meetings were held by a representative of <i>Fundación Gran Chaco</i> in the different regions, plus telephone exchanges; • For the second survey, one large meeting in Salta and 10 in-person small training meetings were held by two representatives of <i>Fundación</i> for 20 people, who trained other people in the field.
Results presentation meeting (place and date)	Ulaanbaatar, October 2019.	N'Djamena, October 2019.	Salta and Buenos Aires, December 2019.

Once the surveys had been completed, the three pastoralist organizations were involved in data management, through daily remote exchanges with CIRAD during the analysis phase. This enabled them to acknowledge the huge amount of work they had performed, and the successful management by themselves of raw quantitative data. They also assisted CIRAD in

¹² The small diagrams visually represent the training methods.

the data analysis, by checking the correctness of the information, filling in the missing fields, and detecting and correcting abnormal data. They reported that this was a very challenging, but rewarding part of the project.

The three pastoralist organizations now have a core team of people trained on the adopted approach, and able to replicate surveys autonomously. This team is made up of around 300 people in Mongolia, 14 in Chad, and 43 in Argentina. In addition, each team had one or two supervisors, who were directly and constantly involved throughout project, and are able to organize other large data management operations in the future.

The three organizations established two large databases with pastoralism-related information, to be used for further analysis and advocacy. The databases were stored in the central web server hosted by FAO (<http://www.openforis.org/collect-pastoralism>), and were also exported by the organizations in Excel format and stored on their local servers. The trained supervisors of each organization will be involved in the publication and dissemination of activities led by FAO and CIRAD.

Table 5: Number of records (= number of households) available for the three pastoralist organizations

	Number of available records		
	Mongolia	Chad	Argentina
Database on the pastoralist population's characteristics	112 957	8 938	6 532
Database on the pastoralist economy	1 938	1 010	1 198

Outcome 3: The global pastoral network is engaged and advocates internationally and national members are engaged and advocate nationally

The project supported the organization of two international/regional forums (in Mexico and Senegal), as well as the participation of two pastoralists in those events. One pastoralist from Peru participated in the *Reunión Internacional para la Sostenibilidad de la Zonas Áridas* (International Meeting for the Sustainability of Arid Zones), which took place in San Luis de Potosí (Mexico) in May 2017, and another pastoralist from the *Association pour la promotion de l'élevage au Sahel et en Savane* (Association for the Promotion of Livestock in the Sahel and Savannah [APESS]) attended the *Colloque international sur le pastoralisme dans le courant des changements globaux: défis, enjeux et perspectives* (Pastoralism in the current of global change: challenges, issues and perspectives), which was held in Dakar, Senegal in November 2017. These events gave the two pastoralists the opportunity to share the experience of their communities with other pastoral communities' representatives, and to contribute to the discussions. Another representative of the Latin America pastoralist

communities was supported to participate in the meeting of the Global Agenda for Sustainable Livestock, which took place in Mongolia in June 2018.

The three pastoralist organizations organized a forum in each of their respective countries, in order to present and disseminate the project results at the national level, thus showing the importance of the pastoralism sector and its contribution to the national economies.

In addition, the three pastoralist organizations increased their information exchanges with the national authorities (ministries of livestock and statistics) and research institutes. This was particularly important for the Mongolian NFPUG, which strengthened its relations with the Government by crossing its new database with the official ones. Furthermore, in Argentina and Chad, pastoralist organizations organized a forum each after the project was completed, where they presented and disseminated the project results to diverse stakeholders, including government representatives, in order to show the importance of the pastoralist sector and its contribution to the national economies. This contributed to the recognition of pastoralist organizations at the national level and broadened their opportunities to advocate for pastoralists.

D. IMPLEMENTATION OF WORK PLAN AND BUDGET

Work plan and budget

The project was expected to start in January 2017, but was launched in April 2017 (after reception of the funds), through an inception meeting that gathered experts from different institutions (FAO, World Bank, CIRAD, International Livestock Research Institute).

In May 2017, a full-time consultant was recruited to contribute to defining the data collection methodology, train the pastoralist organizations, and monitor the data collection process.

With regard to Argentina, the implementation of the project was delayed by the signature of the project agreement between FAO and the Government of Argentina. In addition, initially the implementing partner had difficulties in launching the data collection operation, especially because of weak relations with many of the regions of the country (its work mainly focuses on the region of Gran Chaco). In response to these difficulties, it was decided not to cover the whole pastoralist population, but to target 7 000 households instead. *Fundación Gran Chaco* invested a great deal of effort in improving its knowledge of all the

regions of the country, acknowledging that this knowledge would be mobilized for other projects/activities in the future.

In Mongolia, FAO replaced the Mongolian Alliance of Nomadic and Indigenous Peoples (MANIP), which was the implementing partner originally foreseen by the Project Document, with the NFPUG. This decision was based on a FAO recommendation, after a number of irregularities involving MANIP was identified. As a result, certain changes were made and it was decided to contract the NFPUG, which was also highly recommended by the SDC, with whom they had been collaborating under the Mongolian Green Gold Project.

In addition, AGAG allocated additional resources to improve the project results and impact. These resources were used by the implementing partners to organize the above-mentioned final forums, where the project results were presented and disseminated to key stakeholders. The aim of the forums was to show the importance of the pastoralist sector and its contribution to the national economies, thus advocating for pastoralism with government officials and non-government institution representatives.

Resource partner contribution

The budget of USD 450 000 was provided by IFAD. In addition, the three pastoralist organizations participated in the project funding by allocating some of their own resources to achieve the goals, thus demonstrating their interest and deep involvement in the project.

The project obtained a five-month extension (from April to September 2019), to allow the partners to fully achieve the activities in the field.

Risk management

Risk No	Risk statement	Mitigating action
1	Political or social instability.	In Chad, the RBM encountered some difficulties conducting the first survey, owing to the political instability of the country ¹³ , and the weak background of the enumerators ¹⁴ . As with Argentina, it was decided, in consultation with CIRAD, not to cover the whole pastoralist population, but only as many households as the organization could interview, given the limited time and financial resources. The RBM interviewed about 5 000 households, which improved its capacity in data collection and management. CIRAD integrated this information with other data sources (national census and other development projects), in order to deliver a

¹³ For example, in May 2018, the Government banned all two-wheeled vehicles outside urban centres in some regions.

¹⁴ The IT skills of the enumerators varied widely, as some of them were not familiar with mobile devices. As a result, some tablets broke down.

Risk No	Risk statement	Mitigating action
		sample of households, with which the RBM conducted the second survey. The implementation of the project was particularly successful, as both reliable data were collected, and a positive dynamic emerged from the group of data collectors (please see Human Interest Story, Section I).
2	Non-coincidence between data obtained from CSOs and official data.	One of the objectives of the project was exactly to produce pastoralist-managed information, which can be used to advocate for pastoralism before national and international institutions. In some cases, there was non-coincidence between the data obtained from the pastoralist organizations and the official data, but those discrepancies were managed through the involvement of different stakeholders from the beginning (see risk mitigation below) and productive discussion while presenting the final results.
3	Information generated and shared is not consensual.	To avoid any conflict between the pastoralist organizations, on one side, and local authorities and research centers, on the other side, the latter were involved from the beginning in the project, mainly through the kick-off meetings held in each of the countries.
4	Knowledge sharing networks or mechanisms not used or accessible by all.	In some areas where the project was implemented (mainly in Argentina), poor internet connection did not allow all the stakeholders to gain access to the shared platform containing the database. Thus, in some cases, they could not upload their data automatically in the database. This issue was solved through using paper forms that the pastoralist organizations distributed among the data collector and then gathered once filled.
5	Women and youth marginalized.	Particular attention was paid from the beginning to the involvement of women and youth in the project, especially while organizing the kick-off meetings and composing the data collector teams. In Chad, it was not possible to involve women in the data collection process, since they have more difficulties in leaving their households and travelling. However, the gender aspect was taken into account while conducting the surveys, since many interviews were made with female household heads. Moreover, the questionnaires allowed for evaluating the access of women to productive assets.

E. SUSTAINABILITY

a. *Capacity development*

The project aimed to strengthen the capacities of CSOs for pastoralist data collection and analysis and information management, in order to make them autonomous in providing scientific evidence and facilitating effective decision-making. For this reason, as mentioned above, the overall implementation of activities involved primarily the pastoralists themselves, not as beneficiaries but as active stakeholders and protagonists. By sharing opinions and ideas on the implementation of the project, and collecting data by themselves, the pastoralist organizations improved their knowledge on data collection tools and methods. This knowledge can be mobilized for other projects and activities, which the organizations will be able to conduct autonomously.

b. *Gender equality*

The project adopted a gender-sensitive approach in each of the activities implemented. For example, the questionnaires used for data collection were designed to capture gender-related issues within pastoralist households, such as livestock ownership for women, and their access to other productive activities. The analysis of the data revealed the main issues related to gender, such as women's access to animal ownership and the number of female household chiefs. This was particularly interesting in the case of Argentina, where it emerged that in some areas women had a very high level of decision power. The capacity-building sessions in the field were organized through a gender-balanced approach and were attended by a balanced ratio of women and men (except for the training held in Chad, where it can be difficult for women to travel). In addition, the participation of both female and male pastoralist representatives in international/regional forums was supported.

c. *Environmental sustainability*

The project had a strong focus on environment and climate, as the data collection and analysis highlighted the natural resources that pastoralists depended on, and the main concerns linked to their use. In this context, several sections of the questionnaires focused on land tenure and use, as well as water access. This was crucial for ascertaining the environmental constraints faced by pastoralist households, which led to negatively impacting phenomena, such as overgrazing. This was key information, especially in countries like Mongolia, where land degradation and overgrazing are sensitive issues. The collected data

also highlighted the impact of climate-related issues, by showing the variability of agriculture and livestock production, and thus of income.

In Mongolia, the data collection method that was developed through the project has already been exploited for other environment-related activities. In this context, the NFPUG recently launched the Raw Material Traceability System, in order to set up a database with information on households' livestock productions, and to produce certification for environment-friendly materials. This activity was designed based on the information management system built during the project, and the database was built through information collected during the project.

d. Human Rights-based Approach (HRBA) – in particular Right to Food and Decent Work

By assessing households' levels of production, spending, self-consumption, and sales, the data collection carried out during the project could serve as a solid basis to evaluate the nutrition and food security status of pastoralist households, and to raise warnings about it. The data indicated the wide inequalities among households in pastoralist areas, their different levels of access to food and productive assets, and the strategies they set up to face climate and economic variability, among which, reducing the number and quantity of meals was quite important. The collected data also showed several issues relating to youth in pastoralist households, such as their access to livestock and other productive assets, as well as the efforts made by youth to improve and ensure the income and food security of their households, through migration, remittances and other income sources.

e. Technological sustainability

The methods used (data collection through a CAPI tool and smartphones or tablets) were easy to implement and replicate. Users only need their smartphones and an internet connection.

f. Economic sustainability

Through its strong capacity-strengthening component, the project ensured its economic sustainability, since the beneficiaries (who were not simple beneficiaries, but rather proactive stakeholders) will be able to keep the information management activities going.

F. LESSONS LEARNED

LESSONS LEARNED – elements of success

The project can be considered as innovative in its adoption of pastoralist-related development approaches. Rather than simply collecting data on pastoralism, it aimed to enable pastoralists to collect data by themselves. This required improving the knowledge of pastoralist organizations in data collection methods. The innovative approach also comprised using surveys that made it possible to obtain disaggregated data (by species, region, etc.), while available data is usually aggregated. These surveys allowed for the creation of databases that were fully and easily accessible and manageable by the pastoralist organizations involved in data collection.

A lesson that was learned from the project was that it could be extremely useful to work with different countries at the same time. This made it possible not only to have a wide overview of some trends and phenomena happening in the world (i.e. some common characteristics of pastoralists living in different continents, or the broad inequalities among pastoralist households), but also to create a sense of imitation/competition among countries. For example, the data collectors of Chad became more motivated in conducting their tasks when they knew that the activities had been successfully implemented in Mongolia.

LESSONS LEARNED – impediments/constraints

One of the constraints encountered during the project was the weak presence of implementing partners in the field, and poor coverage in some areas of their respective countries. For example, in Argentina, *Fundación Gran Chaco* had strong relations only in the northern regions, and thus faced many difficulties when launching the project in the south, where it had to gather the existing fragmented and small pastoralist entities. In Chad, the national branch of the RBM had weak relations with the communities and low human resources to improve them; while in Mongolia the NFPUG activity covered only half of the country. This situation slowed down the implementation of the project at the beginning, and represented a huge challenge for the organizations. It was solved in different ways in the three countries. In Argentina, a representative of *Fundación Gran Chaco* created a network of relations with diverse institutions throughout the country, by travelling and organizing in-person gatherings. In Chad, the intervention of the RBM's regional technical coordination was key, as it contributed to improving strained relations between the data collectors and the pastoralist communities they represented, and the RBM national branch.

In Mongolia, the NFPUG signed a collaboration contract with the Government, which supported the implementation of the project in the field.

Another of the constraints encountered was the low motivation of the data collectors, which considerably held up the implementation of the project at the beginning. This issue was

solved by introducing various incentives, from pep talks to economic rewards, which contributed to accelerating the pace of the activities and to achieving the expected results.

G. FOLLOW-UP ACTIONS

It is recommended that donor funding be sought to assist in fine-tuning the skills of the three pastoralist organizations involved in the project in database management and data analysis, in order to make them fully autonomous in conducting complex evidence-based studies.

H. GOVERNMENT ATTENTION

Specific Findings and Recommendations for Government Attention

It is recommended that the same activities be implemented in other countries/regions of the world, in order to: i) fine-tune the method used to assess the weight of the pastoralism sector and its contribution to the national economies; and ii) obtain additional material to provide evidence-based results to be used for policy-making.

I. HUMAN INTEREST STORY

The project was successful in all three countries, but in Chad it especially led to a positive dynamic, involving the RBM, its national branch, and the data collectors. This was not anticipated, as the stakeholders initially had quite low expectations. Indeed, the presence of the RBM (as a regional organization) in Chad was very recent, so the performance of its national branch was as yet unknown.



Figure 1: The first training session for the data collectors

In addition, the level of expertise of the selected data collectors was variable, for example, some of them did not have skills in smartphone manipulation. The RBM technical focal point, Chec Ouattara, said that it was difficult to find candidates, among the pastoralist communities of Chad, who could speak and write in French or Arabic and had basic IT skills.

Given this situation, it was necessary for the RBM to put a lot of effort in strengthening the skills of the field actors. More training sessions were organized (involving both the RBM national branch and the data collectors), and continuous support was provided by telephone. A WhatsApp group was created, through which people communicated about the progress of the surveys, the social and political constraints they faced, possible solutions to any kind of problem, and their claims and needs.

This close follow-up contributed to the successful achievement of the project goals. Indeed, 8 938 data were collected among pastoralist households during the first survey, and 1 010 interviews were correctly conducted on the economic contribution of pastoralism in Chad during the second one. This was the first time that a pastoralist organization in Chad was in charge of managing autonomously such a wide data collection operation, with representatives of pastoralist communities who were greatly involved and accountable for it. This was key for the sustainability and long-term effectiveness of project results.

The project also contributed to creating a desire to claim recognition and rights among the data collectors as pastoralist representatives. In this context, 10 pastoralist representatives were successfully trained, and learned a job that was complementary to their pastoralist background; and they now represent a “bridge” between their communities on the one hand, and policy-makers and international organizations on the other. This “new” job can be mobilized through other projects and activities, and spread through peer-training.

According to the RBM regional coordinator, Blamah Jalloh, this was a phenomenon that had not been previously observed in Chad. It has led to ask for a stronger role and presence of the RBM national branch in representing the interests of the pastoralist communities, as well as to the desire to request fair policies and public attention.



Figure 2: A data collector conducting the survey in the field

Appendix 1
LOGFRAME MATRIX - ACHIEVEMENT OF INDICATORS

Results chain	Indicators				If not achieved, explain why	If applicable/ follow-up action to be taken
	Indicators	Baseline	End target (<i>expected value at project completion</i>)	Achieved		
Impact¹	Increase knowledge, awareness and recognition of pastoral production for poverty alleviation and food security.					
Project Outcome Strengthen capacities of civil society organizations for pastoral data collection and information to facilitate evidence-based policy decision-making	Three regional pastoral CSOs have been reinforced and their participation on policy decision process has been enhanced through capacity-building processes on organizational aspects and data collection skills.	0	Strengthened capacities of pastoralist organizations for pastoral data collection and analysis and information management to facilitate evidence-based policy decision-making.	Exceeding 100%		Fine-tune technical skills of the three pastoralist organizations in database management and analysis.
	Three regional networks have participated in national and international consultative processes and political decision-making.	0				
Outcome (1) Pastoralist organizations contribute effectively in the collection of policy and management relevant data on pastoralism in support of the SDGs, especially SDG targets 1.4 and 2.3.	Three regional pastoral organizations and three national-based associations have participated and contributed to baseline data gathering, land tenure mapping and measurement of the contribution of pastoralism to the national economy.	0	Three regional pastoral organizations and three national-based associations have participated and contributed to baseline data gathering, land tenure mapping and measurement of the contribution of pastoralism to the	100%		Increase the number of pastoralist organizations able to conduct data collection and management, by replicating this project in other countries and regions?

¹ The impact level should always reflect the higher programmatic outcome to which the project contributes. For example, at the country level, this is expressed as the CPF outcome to which the project contributes and can also reflect other elements of impact that are defined at a higher programmatic level (UNDAF/national goal/FAO Strategic Framework).

Results chain	Indicators			If not achieved, explain why	If applicable/ follow-up action to be taken
	Indicators	Baseline	End target (<i>expected value at project completion</i>)		
			national economy.		
Outcome (2) Pastoralist networks and organizations play an active role in knowledge management	Three regional pastoral organizations and three national-based associations have provided information and participated in a knowledge-sharing process through different platforms, discussed policy and technical topics and agreed on advocacy messages.	0	Three regional pastoral organizations and three national-based associations have provided information and participated in a knowledge-sharing process through different platforms, discussed policy and technical topics and agreed on advocacy messages.	Exceeding 100%	Follow up the advocacy activities of the pastoralist representatives.
Outcome (3) The global pastoral network is engaged and advocates internationally and nationally	Three regional pastoral organizations and three national-based associations have participated in a number of global meetings to strengthen their participation in policy dialogues on the international stage and to advocate for their interests.	0	Three regional pastoral organizations and three national-based associations have participated in a number of global meetings to strengthen their participation in policy dialogues on the international stage and to advocate for their		

Results chain	Indicators			If not achieved, explain why	If applicable/ follow-up action to be taken
	Indicators	Baseline	End target (<i>expected value at project completion</i>)		
			interests.		

Appendix 2

PROJECT STAFF

<u>Name</u>	<u>Function</u>	<u>Dates of Service</u>	
		<u>Starting Date</u>	<u>Concluding Date</u>
<u>International staff</u>			
Gregorio Velasco Gil	Project coordinator	Jan. 2017	Sept. 2019
Serena Ferrari	Consultant	May 2017	Sept. 2019
Cindy Wang	Intern	June 2018	Aug. 2018

Appendix 3

TRAINING AND STUDY TOURS

No. of participants	Study/training	Place	Date
10	Launch meeting/training session.	N'Djamena	Nov. 2017
18	Launch meeting/training session.	Ulaanbaatar	Feb. 2018
30	Launch meeting/training session.	Buenos Aires	May 2018
1 200	In-person and online training sessions held by the NFPUG for <i>aimag</i> , <i>sum</i> and PUG leaders.	Mongolia	March 2018-Jan. 2019
14	Five training sessions (three plenary in N'Djamena and two regional in Massakory and Abéché).	Chad	Nov. 2017-March 2019
Unknown	For the first survey, 22 in-person large information meetings were held by a representative of <i>Fundación Gran Chaco</i> in the different regions, plus telephone exchanges.	Argentina	July 2018-April 2019
43	For the second survey, one large meeting in Salta and 10 in-person small training meetings were held by two representatives of <i>Fundación</i> for 20 people, who trained other people in the field.	Argentina	April 2019-Sept. 2019
Three	Results presentation meeting.	Ulaanbaatar	Oct. 2019
30	Results presentation meeting.	N'Djamena	Oct. 2019
30	Results presentation meeting.	Salta and Buenos Aires	Dec. 2019

Appendix 4

MAJOR ITEMS OF EQUIPMENT PROVIDED

<u>Quantity</u>	<u>Item</u>	<u>Cost (USD)</u>
<u>Argentina</u> 15	Tablet - Kanji Yubi 7"	1 482
<u>Chad</u> 14	Tablet - Asus, tactile - ZENPAD C 7.0 7" 16GB	4 495
<u>Mongolia</u> 18	Tablet - ASUS Zenpad	3 186

Appendix 5

DOCUMENTS PRODUCED DURING THE PROJECT

Review of available information on pastoralism in Mongolia, Argentina, and Chad. Working document. FAO-PKH. July 2017. 58 pp.

Methodological approach for data collection under the “Pastoralist-Driven Data Management System” project. Working document. FAO-PKH. August 2017. 9 pp.

Approche méthodologique pour la collecte des données dans le cadre du projet “Système de gestion de données piloté par les organisations pastorales”. Working document. FAO-PKH. August 2017. 10 pp.

À la recherche d’un système d’information pour le pastoralisme en Argentine. Typologie des systèmes pastoraux et intégration dans un système d’information. Master’s thesis in geomatics. L. Pérez Merle d’Aubigné. September 2018. 112 pp.

Perception et compréhension de la dégradation des pâturages par les éleveurs nomades mongols. La mise en place de groupes de gestion des communs comme solution d’adaptation. Master’s thesis in “Agroecology, Society, and Territory”. I. Mardesiç, September 2018. 83 pp.

The economics of pastoralism. Working document. CIRAD. January 2020. 34 pp.