



Food and Agriculture
Organization of the
United Nations



World Food Programme



Good practices for the resilience of rural livelihoods for food security and nutrition

The added value of coordination, collaboration
and synergy between FAO and WFP

Latin America and the Caribbean

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Acronyms

AAH	Action Against Hunger
AECID	Spanish Agency for International Cooperation for Development
APAC	Association of Small Community Farmers of Esquipulas and Chiquimula
CAC	Central American Agricultural Council
CCA	Climate Change Adaptation
CBBG	Community Banks for Basic Grains
CDC	Community Development Council
CELAC	Community of Latin American and Caribbean States
CERF	Central Emergency Response Fund
CMF	Contingency Mutual Fund
CNE	National Emergency Commission
DFNC	Departmental Food and Nutrition Commission
DRD	Disaster Risk Reduction
DRM	Disaster Risk Management
ECHO	Directorate-General for European Civil Protection and Humanitarian Aid Operations
ECLAC	Economic Commission for Latin America and the Caribbean
ENSO	El Niño – Southern Oscillation
EOC	Emergency Operations Centre
EWS	Early Warning System
FAO	Food and Agriculture Organization of the United Nations
FBF	Forecast Based Financing
FFA	Food Assistance for Assets
FNS	Food and Nutrition Security
GDP	Gross Domestic Product
IAD	Dominican Agrarian Institute
ICA	Integrated Context Analysis
IFDA	International Fund for Agricultural Development
MCFNS	Municipal Commission for Food and Nutrition Security
INAPA	National Drinking Water Institute
INDRHI	National Institute of Hydraulic Resources
INE	National Institute of Statistics
INFORM	Index for risk management
IPCC	Intergovernmental Panel on Climate Change
LAC	Latin America and the Caribbean
MAL	Ministry of Agriculture and Livestock
ME	Ministry of the Environment
MINEDU	Ministry of Education
MSPAS	Ministry of Public Health and Social Assistance

NADS	National Administrative Department of Statistics
NCFNS	National Council for Food and Nutritional Security
NSPMR	National System of Prevention, Mitigation and Response
NGO	Non-Governmental Organization
OCHA	Office for the Coordination of Humanitarian Affairs
ONAMET	National Meteorology Office
OXFAM	Oxford Committee for Famine Relief
P4P	Purchases for Progress
PAHO	Pan American Health Organization
PCP	Participatory Community Planning
PMRC	Provincial and Municipal Committees on Prevention, Mitigation and Response
PRRO	Protracted Relief and Recovery Operation
REDLAC	Latin American and Central American Network of Environmental Funds
RI3	FAO Regional Initiative 3
RSA	Restoration of the Food System and strengthening the livelihood resilience of families affected by the Prolonged Canícula 2014 in the municipalities of the Departments of Chiquimula and Jalapa, Guatemala
SDG	Sustainable Development Goals
SESAN	Secretariat for Food and Nutrition Security
SLP	Seasonal Livelihood Programming Consultation
TCP	Technical Cooperation Project
UN	United Nations
UNFCCC	United Nations Framework Convention on Climate Change
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
UTZ CHE	Community Forestry Association of Guatemala
WFP	World Food Programme
3PA	Three-pronged Approach

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Foreword

Thirty-four billion Dollars in just ten years: this was the magnitude of the cost of natural disasters in Latin America and the Caribbean between 2003 and 2014.

The region sustains a fourth part of all global losses caused by disasters, draught, floods, hurricanes and earthquakes, which directly affected the life and wellbeing of over seventy-seven million people.

On third of the habitants of Latin America and the Caribbean lives in areas which are highly exposed to geological and hydro-meteorological threats and four of the ten countries with the highest climate risk form part of this region: Guatemala, Honduras, Haiti and Nicaragua.

It is not by chance that these countries also have the highest indexes of hunger and poverty in the region, since the recurrence of natural disasters is slowly undermining the quality of life of the people and their capacity to stand-up and continue forward.

Disasters affect livelihoods, destroy agriculture and animal husbandry systems, destroy crops, drown cattle and sweep away roads, infrastructure and homes. With every new flood, draught, earthquake or storm, communities become more vulnerable, losing what is so hard to build with their own hands. Disasters generated by natural phenomenon are among the main causes of falling back into poverty. This is serious enough on its own, and it becomes worst if one considers the hard truth: the poor are among those who die the most as a consequence of disasters.

Evidence shows that people in vulnerable situation are disproportionally affected by disasters: between the year 1975 and the year 2000, population in extreme poverty was responsible of almost seventy percent of the mortality caused by disasters. In order to urgently respond to this reality, the Food and Agriculture Organization of the United Nations (FAO) and the World Food Programme (WFP) have gathered in this publication the best practices which allow rural communities to increase their resilience to disasters.

These valuable experiences, supported by FAO and WFP, include initiatives such as risk transfer and social protection mechanisms in Guatemala, food assistance linked to rapid recovery in Colombia and adaptation of crops to draughts in the Dominican Republic.

Taken as whole, they intend to be the start point in the road towards safer future, stronger rural communities, capable of facing climate change, and, towards having Latin America and the Caribbean free of hunger and poverty.



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1. Introduction

In order to achieve the 2030 Agenda and in particular the Zero Hunger goal, there is a widely recognized need to establish food system resilience to climate change, disaster risk, environmental degradation and economic instability.

As indicated in the *Conceptual framework for collaboration and partnerships among the Rome-based agencies for the strengthening of resilience for food security and nutrition*¹, adopted in October 2015, the Food and Agriculture Organization of the United Nations (FAO), the International Fund for Agricultural Development (IFAD) and the World Food Programme of the United Nations (WFP), share a common focus “to strengthen the resilience of the rural poor, vulnerable and food insecure people’s livelihoods and production systems.”

This instrument also highlights the complementarity between the strengths developed by the three agencies, as a result of their respective mandates and operational mechanisms and how alignment furthers comprehensive and strategic actions to create resilience in the different areas that affect food and nutrition security (FNS).

In this same line, in September 2016, the FAO subregional office for Mesoamerica and the WFP regional office organized the “Workshop on the exchange of experiences in community resilience for FNS” in Riohacha, Colombia to contribute to the strengthening of resilience efforts in Latin America and the Caribbean (LAC) through the exchange of good practices and tools that may be replicated and adapted in the region.

One of the main conclusions of the workshop was the importance of identifying and systematizing in a document good practices for livelihood resilience and food security and nutrition achieved by collaboration between the two agencies. This document responds to this demand and to this end has selected experiences presented at the Riohacha workshop and others identified with the support of the regional offices and the country offices of both agencies.

Among the selected cases, the first four illustrate the collaboration that took place between the two agencies in different contexts and countries, and the last two present experiences developed independently by each agency, but which show an interesting potential for collaboration.

¹ FAO, PMA, FIDA. 2015. Strengthening resilience for food security and nutrition. Roma. (available at: http://documents.wfp.org/stellent/groups/public/documents/manual_guide_proced/wfp276477.pdf)

The experiences studied in this document contemplate different territorial levels of action - the community, the local and the national - and address the existing links between the construction of livelihood resilience and FNS with disaster risk management (DRM), adaptation to climate change, sustainable agricultural production, social protection schemes and other relevant areas.

In all cases, the study illustrates how the work approaches of both agencies reinforce each other, as well as the real added value of coordinated, collaborative and synergistic action in the construction of livelihood resilience to ensure the food and nutrition security of the population.

2. Latin America and the Caribbean in the face of threats and disasters that impact agriculture and food security and nutrition

“Climate-related disasters impact livelihoods, with severe consequences for food and nutrition security. In recent years, they have been causing enormous economic damage, as well as an increase in the number of people affected in LAC, imposing a sense of urgency to the actions necessary for their mitigation and adaptation.”²

Despite the significant progress made in the region since the adoption of the Hyogo Framework for Action in 2005, disaster trends show that the region continues to be one of the most vulnerable to natural hazards. The long-term Germanwatch Global Climate Risk Index shows that from 1995 to 2015, four of the 10 countries with the highest climate risk index are located in LAC.³ For its part, the INFORM Risk Management Index 2017 identifies seven countries in the region among the 20 most exposed to natural hazards.⁴

Between 2003 and 2014, the cost of disasters caused by natural phenomena in the LAC region was estimated at around USD 34.3 billion (representing a quarter of the global losses), affecting 67 million people.⁵ It is estimated that a third of the population of the region lives in areas highly exposed to geological and particularly hydro-meteorological hazards.

2 FAO & OPS. 2017. Panorama of Food and Nutrition Security in Latin America and the Caribbean. Santiago de Chile.

3 Guatemala, Honduras, Haití and Nicaragua: Germanwatch. 2017. Global Climate Risk Index 2017. Who suffers most from extreme weather events? Weather-related loss events in 2015 and 1996 to 2015 [available at: <https://germanwatch.org/en/crri>]

4 Chile, Peru, Ecuador, Colombia, Nicaragua, Guatemala and México [available at: <http://www.inform-index.org/>]

5 UNISDR. 2016. Concept Note - First Meeting of Ministers and High-Level Authorities on the Implementation of the Sendai Framework for Disaster Risk Reduction 2015-2030 in the Americas.

The increase in losses observed in the region is mainly associated with extensive and/or slow-moving, localized and recurrent risks that are precisely those that most affect food production systems. Between 2003 and 2016, 23% of the damages and losses caused by medium and high intensity disasters in developing countries affected the agricultural sector, and 80% of damages and losses linked to drought events are concentrated in this sector.⁶

Due mainly to the increase in the intensity and frequency of adverse weather events and the change in rainfall and temperature patterns, it is expected that food systems will be the most affected sector in the region as climate change⁷ affects food availability and further deteriorates the situation of the population whose livelihoods depend on these activities. Most of the population is made up of small-scale rural producers who are already in the poorest and most vulnerable strata of society.

The consistent deterioration of natural resources in all areas observed in LAC⁸ is also a critical factor in increasing the vulnerability of food production systems and reducing the resilience and “protective function” of ecosystems in the face of climate change and disasters of hydrometeorological origin. Likewise, the increasingly frequent food chain crises caused by epidemics and transboundary animal and plant pests, and food safety issues, constitute another important threat to the livelihood of the population, as recently demonstrated by the coffee rust crisis in Central America.⁹

Evidence from recent years shows that women, children and people in situations of vulnerability are disproportionately affected by disasters; between 1975 and 2000, 68% of the disaster mortality was concentrated in populations living in extreme poverty. This element is particularly relevant in LAC where inequality and social exclusion are central challenges of development processes. The Human Development Report (HDR) 2016 for the region warns that, if no measures are taken to solve the structural causes of inequality and exclusion, of the 73 million people who moved out of poverty between 2003 and 2014, between 25 and 30 million run the risk of falling back into poverty, and stresses that, according to

6 FAO. 2016. The impact of disasters on agriculture and food security. Roma.

7 CEPAL. 2015. Adaptation to Climate Change in Latin America and the Caribbean. Santiago de Chile and FAO 2016, Climate Change and food and nutrition security in Latin America and the Caribbean (policy guidelines). Santiago de Chile.

8 FAO. 2016. Voluntary Guidelines for Agro-Environmental Policies in Latin America and the Caribbean. Santiago de Chile.

9 In Guatemala, Honduras, El Salvador and Nicaragua, where 1.5 million households depend on the coffee sector, coffee rust in 2014 affected 55% of the cultivated area and reduced employment by about 40% during harvest. ECLAC 2015, Op. Cit.

the perception of Latin Americans, disasters generated by natural phenomena are among the three main causes of sliding back into poverty.¹⁰

Despite the fact that the region has enough food to feed its entire population and despite the sustained progress in the fight against hunger over the last 15 years, the number of undernourished people increased by 2.4 million between 2015 and 2016, reaching a total of 42.5 million¹¹. In this area, it is necessary to emphasize the role of family farming or small-scale producers, which provide, depending on the countries, between 27% and 67% of total food and represent 81% of the productive units in LAC¹². However, this sector is subjected to the greatest proportion of the negative impacts of climate change and disasters, due to its high vulnerability and climate dependence, occupation of degraded lands, low productivity, use of unsustainable practices and a weak capacity for disaster preparedness and recovery.

In the current context of increased frequency of disasters in the region and particularly of extensive risks such as drought, we are currently witnessing an increase in the migratory phenomenon towards urban centres due to the consequent exacerbation of the erosion of livelihoods, the decapitalization of small family and community economies; and rural impoverishment. However, cities rarely have sufficient reception and absorption capacities, which is why the migratory phenomenon only exacerbates the state of vulnerability of the population in general.

As such, the fight against hunger and the development of more resilient societies in the region are intrinsically related to the establishment of sustainable food systems, especially in the face of environmental degradation, climate change and economic instability. Likewise, the potential links that exist between social protection, disaster risk management, adaptation to climate change and humanitarian assistance must be exploited and developed.

10 UNDP. 2016. Regional Report on Human Development for Latin America and the Caribbean - Multidimensional Progress: well-being beyond income.

11 FAO. 2017. Op cit.

12 FAO. 2014. Family Agriculture in Latin America and the Caribbean: Policy Recommendations. Santiago de Chile.

3. Policy and action frameworks of FAO and WFP

3.1 Collaboration frameworks

FAO and WFP have frequently combined their strengths through interagency efforts over the years in different contexts and at the local, national and global levels. It should be noted that both agencies have been strategic allies in the context of the United Nations Framework Convention on Climate Change (UNFCCC) and the Third United Nations World Conference on Disaster Risk Reduction (DRR) to address the challenges related to food and agriculture, both in the Paris Agreement and in the Sendai Framework for DRR.

In relation to the 2030 Agenda, the Member States of the United Nations recognized the critical momentum provided by FAO, IFAD and WFP for the definition of the Sustainable Development Goal (SDG) 2: Zero Hunger, thus establishing them as the leading monitoring agencies.

The publication of the *“Conceptual framework for collaboration and partnership between the Rome-based agencies”* in 2015 reinforced the collaboration between FAO, IFAD and WFP.

In response to the Secretary General's call for a United Nations system that transcends mandates and the line between humanitarian and development to work towards collective results, the three agencies also developed the conceptual framework of *“Collaboration among the United Nations Rome-based Agencies: Delivering on the 2030 Agenda”*¹³ in December 2016.

Demonstrating an explicit will to bring these agreements to the operational field and work in the countries, the Director General of FAO and the Executive Director of WFP signed a *Memorandum of Understanding* in March 2017 which aims to strengthen the coordination, collaboration and synergies between both organizations¹⁴.

At the LAC level, this same dynamic has been reproduced and has focused mainly on livelihood resilience and FNS. Thus, on June 30, 2016 authorities of Central American countries and the heads of the three agencies met in Rome about the urgent need for long-term action to address the effects of El Niño and in

13 FAO, PMA, FIDA. 2016. Collaboration among the United Nations Rome-based Agencies: Delivering on the 2030 Agenda. [available at: <http://documents.wfp.org/stellent/groups/public/documents/resources/wfp289117.pdf>]

14 FAO and WFP 2017 Memorandum of Understanding between Food and Agricultural Organization for the United Nations (FAO) and World Food Program (WFP).

particular its impact on the Central American Dry Corridor¹⁵. In September 2016, FAO and WFP organized the “*Regional workshop on the exchange of experiences in community resilience for food and nutrition security*” in Riohacha, Colombia.

3.2 Priority international policies and agreements for livelihood resilience and food and nutrition security

Resilience is understood as the “ability of a system, community or society exposed to hazards to resist, absorb, accommodate, adapt to, transform and recover from the effects of a hazard in a timely and efficient manner, including through the preservation and restoration of its essential basic structures and functions through risk management.”¹⁶

To ensure the continuity of the implementation of the Hyogo Framework for Action 2005-2015, the Sendai Framework for DRR 2015-2030 was approved in March 2015. Its approval provided a new paradigm, focusing not only on the reduction of existing disaster risks but also and above all on the prevention of future risks. The Sendai Framework thus establishes the need for both disaster risk management and the creation of resilience to be addressed in a continuous and sustained manner, directly inserted in the different processes linked to sustainable development and providing more explicit attention to people, their health and their means of subsistence.

In September 2015, the Member States of the United Nations committed to the 2030 Agenda for Sustainable Development, which establishes a transformative vision towards economic, social and environmental sustainability within the framework of a strengthened global alliance. The 2030 Agenda recognizes we can no longer look at food, livelihoods and management of natural resources separately. It also considers DRM and mitigation and adaptation to climate change as intrinsic and primordial elements in the development process.

In December 2015, within the framework of the Twenty-First Conference of the Parties to the United Nations Framework Convention on Climate Change (UNFCCC), the Paris Agreement was approved, which explicitly recognizes “the fundamental priority of safeguarding food security and ending hunger, and the particular vulnerabilities of food production systems to the adverse impacts of climate change”.

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¹⁵ Encuentro para el fortalecimiento de la Resiliencia y de la Seguridad Alimentaria en el Corredor Seco Centroamericano. [available at: <http://www.fao.org/americas/eventos/ver/es/c/422126/>]

¹⁶ Definition of the intergovernmental working group of open-ended experts on indicators and terminology related to disaster risk reduction. General Assembly of the United Nations. December 2016

In line with the other global instruments, Core Responsibility Four of the Agenda for Humanity (Change people's lives – From delivering aid to ending need) produced by the First Humanitarian Summit held in May 2016 establishes the importance of transcending the division between humanitarian and development and articulating the response to disasters with the reduction of vulnerability and risk.

Similarly, the United Nations Global Nutrition Agenda¹⁷ establishes the multisectoral dimension of nutrition and prioritizes the relationship between food, nutrition and health for the achievement of each of the 17 Sustainable Development Goals.

3.3 FAO and WFP Policies and Strategies on Livelihood Resilience and FNS

Following the guidelines established by the global instruments, both WFP and FAO have oriented their policies and programmatic frameworks towards a culture of prevention, mainstreaming disaster risk management, both in their development actions and in response and recovery actions, promoting the construction of livelihood resilience against future hazards.

In addition, they recognize the need for an integrated approach to addressing agricultural production, climate change, disaster risk due to manifold natural hazards, environmental degradation, and poverty and inequality in order to achieve resilient food systems that can ensure the long-term FNS of the population, particularly the most vulnerable.

3.3.1 Food and Agricultural Organization of the United Nations - FAO

The mandate of FAO is to support Member Countries in their efforts to ensure that people have regular access to enough high-quality food by supporting policies and political commitments that promote food security and good nutrition and by making sure that up-to-date information on the challenges and solutions to hunger and malnutrition challenges and solutions is available and accessible.¹⁸

In accordance with the new paradigm set forth by the 2030 Agenda, FAO has developed a common vision and an integrated approach to sustainability across agriculture, forestry and fisheries. This unified perspective - taking into account social, economic and environmental considerations - ensures the effectiveness

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¹⁷ United Nations Global Nutrition Agenda. [available at: http://unscn.org/files/Activities/SUN/UN_Global_Nutrition_Agenda_final.pdf]

¹⁸ FAO, available at: <http://www.fao.org/about/what-we-do/en/>

of the action on the ground and is underpinned by knowledge based on the best available science, and adaptation at the community and country level to ensure local relevance and applicability.

In this line, the organization established five strategic objectives (SO) that guide its efforts in fulfilling its mandate: (SO1) Help eliminate hunger, food insecurity and malnutrition; (SO2) Make agriculture, forestry and fisheries more productive and sustainable; (SO3) Reduce rural poverty; (SO4) Enable inclusive and efficient agricultural and food systems; and (SO5) Increase the resilience of livelihoods to disasters.

Under the slogan of “**saving livelihoods saves lives**”, FAO's work within SO5 focuses on developing, protecting and restoring sustainable livelihoods so that the integrity of societies that depend on farming, livestock, fish, forests and other natural resources is not compromised by crises.¹⁹

To this end, FAO uses a “twin-track” approach, on the one hand taking immediate steps to protect and support agriculture, food and nutrition and, on the other hand, addressing in the longer term the underlying factors driving risks, disasters and crises.²⁰

FAO's livelihood resilience and FNS work is defined around three main groups of threats: (1) natural disasters; (2) emergencies in the food chain due to transboundary or technological threats, such as animal and food pests and diseases; and (3) protracted crises, which involve a combination of causes, usually related to human factors combined with natural threats, such as violent conflicts or insufficient governance that affect food systems and livelihoods.

FAO's intervention strategy to increase resilience in livelihoods is based on four main, complementary and multisectoral components at the global, regional and national levels²¹:

1. Governance of disaster and crisis risks: Enabling policies, adequate institutional structures, institutional and technical capacities of countries to better manage risk in agriculture.
2. Monitoring and early warning of disaster and crisis risks: Establishing and improving risk information and early warning systems to trigger rapid and timely decision-making at all levels.

¹⁹ FAO, available at: <http://www.fao.org/about/what-we-do/so5/en/>

²⁰ FAO. 2016b. Increasing the resilience of agricultural livelihoods (available at: <http://www.fao.org/emergencies/resources/documents/resources-detail/en/c/414615/>)

²¹ FAO, available at: <http://www.fao.org/about/what-we-do/so5/en/>

3. Prevention and reduction of the vulnerability of individuals and communities: Applying good practices and technologies that are sensitive to risk, risk transfer and social protection to reinforce agricultural livelihoods.
4. Emergency preparedness and response: Supporting countries in the implementation of preparedness measures for an effective and timely response focused on saving lives and livelihoods, and reducing the impact of disasters and crises in the agricultural sector.

Support for countries in developing capacities at the local, national and subregional levels to reduce the risks and impacts of natural disasters - including climate risks - that threaten food and nutrition security²², is concretely reflected through:

- a. Supporting the development and implementation of appropriate legal, policy and institutional systems
- b. Promoting guidelines, standards and good practices
- c. Facilitation of political dialogue
- d. Supporting in designing and implementing strategies and programmes
- e. Reinforcing the capacities of actors and strengthening the institutional environment
- f. Mobilizing resources and investments
- g. Advancing data generation at global and country level
- h. Building partnerships and alliances
- i. Promoting partnerships and synergies with academic, UN, civic and private sector agencies

FAO also emphasizes the importance of gender equality and the equal participation of women and leadership in all disaster risk reduction initiatives, given their key role in agricultural production in developing countries.

Indigenous populations role in the conservation of the environment, agro-biodiversity and traditional knowledge for climate change adaptation is also an important component of FAO's programs.

In addition, FAO promotes the integration between actions for resilience and the sustainable use of natural resources, supporting, among others, the application of the Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the context of national food security and the Voluntary Guidelines for Agro-environmental Policies.

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²² FAO. 2016a. Food and Agriculture: Keys to Achieving the 2030 Agenda for Sustainable Development [available at: <http://www.fao.org/3/a-i5499e.pdf>].

As such, FAO has a range of programmatic actions related to climate change adaptation and mitigation, with the understanding that climate change is one of the main concerns of the 2030 Agenda, as it is considered a threat to the achievement of many of the proposed objectives, including food and nutrition security.

In line with this, technical support for accessing environmental funds such as the Green Climate Fund, the Adaptation Fund and the Global Environment Fund, is a very important area of FAO's country support activities. This is done, particularly promoting the climate-smart agriculture²³ approach, a flagship concept promoted by FAO globally and key in terms of livelihoods resilience.

In Latin America and the Caribbean, FAO works with three Regional Initiatives to eliminate hunger, malnutrition and poverty in all countries of the region. Through Regional Initiative 3: *Sustainable use of natural resources, climate change adaptation and disaster risk management*, FAO promotes actions to support the agricultural sector's transition to sustainable and resilient development from a socioeconomic and environmental perspective, strengthening FNS in light of the Sustainable Development Goals.

3.3.2 World Food Programme - WFP

The mandate of the World Food Programme (WFP) is to eradicate hunger and poverty through the use of food assistance as an instrument to promote food, nutrition and human security, with special dedication to the poorest and most vulnerable sectors of the world.

The 2030 Agenda for Sustainable Development makes it clear that achieving sustainable development, which includes the eradication of hunger and improved nutrition, hinges on effective partnerships that articulate humanitarian and development responsibilities. The fundamental importance of establishing effective partnerships in different contexts is also reiterated by virtue of the commitments made by some participants of the World Humanitarian Summit.

As the largest humanitarian aid agency fighting hunger and nutrition-related issues around the world, WFP embraces this imperative of strengthening partnerships, seeking to align and integrate its food assistance programmes and capacities with interventions and the investments of governments, other United Nations agencies, the private sector and civil society, which together can generate the systemic changes necessary to achieve the Sustainable Development Goals (SDGs)²⁴.

²³ Climate Smart Agriculture [available at: <http://www.fao.org/climate-smart-agriculture/en/>]

²⁴ WFP Strategic Plan for 2017-2021 [available at: www.wfp.org]

National partnership and collaboration are central to the global call to action set forth in the 2030 Agenda. The WFP Strategic Plan for 2017-2021 reaffirms and consolidates that commitment. WFP prioritizes SDG 2 on ending hunger and SDG 17 on revitalizing global partnerships for implementation SDGs through five strategic objectives. These are: Eradicate hunger by protecting access to food; Improve nutrition; Achieve food security; Support SDG implementation; and Partner for SDG results.

By focusing on its core business of saving lives, WFP will do so in ways that contribute to strengthening resilience and provide productive opportunities over the longer term to benefit food-insecure and marginalized people. WFP works to strengthen the resilience affected people in protracted crises by applying a development lens in its humanitarian response.

WFP's work to build resilience cannot be attributed to a single initiative, but to a plurality of programmatic activities, programmatic approaches, programme packages, functions and initiatives. WFP's programme activities which aim to strengthen resilience include Food Assistance for Assets (FFA), School Feeding, Purchase for Progress (P4P) and Nutrition, among others. Programmatic approaches include social protection networks, disaster risk reduction and adaptation to climate change. The packages of programmes for resilience are those that combine specific activities, such as the Rural Resilience Initiative (R4) that combines FFA, insurance, livelihood diversification and microcredit, and savings.

The greatest concentration of resilience-related programming in WFP focuses on food assistance activities for the creation of assets. The main expected benefits of FFA include:

- a. Build the capacity of local communities and vulnerable groups through participatory planning.
- b. Improve access to food for the most vulnerable and food-insecure people in times of need.
- c. Reduce disaster risks, develop resilience to impacts and adapt to climate change.
- d. Contribute to the long-term environmental and livelihood benefits.
- e. Promote gender equality, the empowerment of women and better nutrition.

23 Agricultura climáticamente inteligente (disponible en: <http://www.fao.org/climatechange/epic/que-hacemos/que-es-la-agricultura-climaticamente-inteligente/es/#.Wh3RK7SdWV4>)

24 Plan Estratégico del PMA para 2017-2021 (disponible en: www.wfp.org)

- f. Strengthen local and national institutional capacities to ensure the sustainability of the investments made.

WFP's leadership in the region prioritizes two central areas of strategic actions:

1. Strengthening government social protection systems to reduce food and nutrition insecurity. In particular, the regional office is placing greater emphasis on supporting governments to make their social protection systems more: nutrition-sensitive, able to address issues of food security and nutrition, as well as poverty, and responsive to emergencies.

2. Strengthening the disaster management capacities of governments to save lives and protect livelihoods, as well as to reduce food and nutrition insecurity. In the context of Latin America and the Caribbean, WFP's actions support national development efforts, without detracting from its recognized role and leadership in emergency preparedness and response. In addition, the role of WFP in strengthening the resilience of communities and households, such as adaptation to climate change, has increased and is widely recognized by its partners.

4. Experiences for resilience driven collaboratively by FAO and WFP



4.1 Guatemala - Chiquimula: Reduction of the vulnerability of small producers through risk transfer and social protection mechanisms



4.1.1 Background

The department of Chiquimula is located in the Guatemalan Dry Corridor²⁵ and is mainly composed of hillsides and deteriorated soils with severe degradation processes. Water is scarce, rainfall is increasingly erratic and poorly used. The livelihoods of farmers rely essentially on the production of basic grains and the sale of labor. The former is characterized by its extreme fragility with low productivity indexes and cultivation areas of 0.35 hectares on average and the

²⁵ The Dry Corridor covers almost one third of the territory of Central America and includes the low areas of the Pacific watershed and most of central pre-mountain region (between 0 to 800 meters above sea level) of El Salvador, Guatemala, Honduras, Nicaragua, Guanacaste, in Costa Rica, and the Dry Arch in Panamá. This dry tropical forest ecoregion has a pronounced and long period without rain and a latent risk of recurring droughts. Nevertheless, during rain seasons, storms, hurricanes and excessive rainfall are not uncommon in the Dry Corridor, and lead to erosion, floods and landslides.

latter by low wages. Seventy nine percent of the population is living in poverty and 37% in extreme poverty²⁶.

In 2014, Guatemala experienced a prolonged heat wave, with the Dry Corridor most affected, some areas reaching a record 45 days without rain. On average, the farmers lost 80% of the corn crop and 63% of the bean crop²⁷. In 2015, the drought caused by the El Niño climate phenomenon once again deteriorated FNS conditions of rural families and their ability to cope with new adverse weather events.

4.1. 2 How was the problem addressed?

Given the recurrence of this type of situation in the Dry Corridor, the Secretariat for Food and Nutrition Security (SESAN) considered necessary to strengthen the livelihood resilience of families and communities, starting with humanitarian assistance, to avoid a larger and more complex crisis in the future. Following this logic, in 2015, FAO and UNICEF supported the Ministries of Agriculture and Public Health in the implementation of the four-year project “Restoration of the Food System and strengthening the resilience of families affected by Prolonged Heat Wave 2014 in municipalities of the Departments of Chiquimula and Jalapa, Guatemala”. The project, with resources from the Government of Sweden, focuses actions on early recovery and resilience in agricultural sectors with a development approach.

In order to increase the resilience of agricultural livelihoods, the Ministry of Agriculture and municipal authorities, with technical support from FAO, used, with a microbasin approach, a set of measures at the family, community and institutional levels that seek to comprehensively address the different causes of vulnerability. Among the main areas of work are the promotion of good practices for the strengthening of agricultural production in their corn fields and backyards; the strengthening of community risk management capacities with the development of Sentinel Sites²⁸ for early warning and the development of Contingency Plans within the framework of the Community Development Councils (CDC), as well as the development of Mutual Contingency Funds - MCF²⁹ that can take different forms but in all cases seek to generate savings and diversify income sources (see box).

26 National Institute of Statistics (INE). 2014. Departmental characterisation. Chiquimula 2013.

27 According to the National Council of Food Security and Nutrition (CONASAN) data

28 Sitios Centinela [available at: <https://reliefweb.int/sites/reliefweb.int/files/resources/Guia%20para%20la%20Implementacion%20de%20Sitios%20Centinela%20en%20Centroamerica.pdf>]

29 Fondos Mutuos de Contingencia [available at: <https://www.youtube.com/watch?v=qci4aL1apfg> and <http://www.fao.org/3/a-i5623s.pdf>]

The Mutual Contingency Fund (MCF) is managed by a producers' association and has the purpose of providing assistance in emergency situations and fund activities aimed at helping alleviate the problems of the most vulnerable families damaged by unexpected events like droughts, hurricanes, floods, earthquakes and other extreme events. The MCF target households with no access to formal financing and insurance systems to safeguard their livelihoods. The **Mutual Contingency Funds** (MCF) are one of FAO's flagship tools for resilience in Guatemala. It is a community savings mechanism achieved through the capitalization of incentives and the development of productive projects. The demand for the MCF is identified through a participatory evaluation process and is developed based on a stakeholder group according to the uses and customs of the population and the contribution of seed capital and labor throughout the process. FAO provides the remaining required inputs, business plan, technical assistance and organizational and administrative training. Generally, 60% of the income is earmarked for the working capital of the productive business and the savings and credit activities for producers of the community, and 40% to the capitalization of the mutual contingency fund. The FMCs take various forms and depend on the potential of each community. Some common examples are Community Banks of Basic Grains, grocery stores, textile activities and activities for agricultural products (coffee drying, seed husking, etc.). The MCF is developed with the full participation of the CDC, critical to the sustainability and replicability of the project.

The MCF furthers the institutional guideline of the FAO regarding the capitalization of incentives. The MCF foresees that beneficiaries contribute with a part of the cost of the necessary inputs for the implementation of productive projects aiming to create a community fund. This guideline seeks to break with the assistentialism culture that has been widespread in many areas of the country and is consistent with the WFP's Food Assistance for Assets³⁰- FFA approach (see box) that conditions the food transfers or cash to the participation of the beneficiaries in the construction of assets that improve their livelihood resilience to future crises.

³⁰ Food Assistance for Assets [available at: http://documents.wfp.org/stellent/groups/public/documents/liaison_offices/wfp292602.pdf]

Food Assistance for Assets (FFA) is one of the WFP's flagship initiatives aimed at addressing food-insecure people's immediate food needs with cash, voucher or food transfers, provided their participation in training activities or in the creation of assets to strengthen their long-term resilience of livelihoods. Generally construction of assets is oriented to water harvesting, ecosystem restoration, preventing natural resources degradation and adapting to climate change activities. The FFA focus on the most food-insecure population and the promotion of women participation are key elements of the mechanism which aims at increasing participation and empowerment of underserved communities, and promoting a shared control of resources and decision-making between women and men. Using participatory context analysis and evaluations the WFP identifies FFA activities aligned with Government and partners' interventions,

The FFA is, in fact, the main modality through which the "Protracted Relief and Recovery Operation in Central America" (PRRO) implemented by the WFP, with the support of various donors³¹, has been providing assistance to families in the Dry Corridor. To this end, the WFP works in close coordination with the Secretariat for Food and Nutrition Security (SESAN) and identifies the intervention zones based on the priorities of the Government of Guatemala, particularly in the framework of the Seasonal Hunger Plan, the National Strategy for the Prevention of Chronic Malnutrition 2016-2010 and the Family Farming Program for Strengthening Peasant-Farmer Economy. Once the departments have been defined, working with local authorities is essential and it is through the Departmental and Municipal FNS Commissions, DFNC and MCFNS respectively, that the participating municipalities, communities and families that meet the selection criteria of the PRRO are identified.

³¹ In 2016, resources from USAID, Canada, ECHO and the UN CERF were used. In 2017, USAID donated the resources.

In the case of Chiquimula, WFP has provided food assistance since 2016 through the present. The participating families created assets such as community gardens, nurseries and retaining walls, which were identified through the Participatory Community Plans (PCP). The assets were developed with the support of implementing partners that were identified at the departmental and municipal levels through the Seasonal Livelihood Programming (SLP) Consultations. The PCPs and SLPs are WFP's own methodologies (see box in chapter 4.3.2) that aim to place participating families at the center of planning activities that are most beneficial to their communities. The alignment of the geographical area between WFP and FAO has led to an interaction that began in 2016 in the department of Chiquimula and expanded to the department of Jalapa in 2017.



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4.1.2.1 Strengthening livelihood resilience through community savings

In the Dry Corridor, it is estimated that for every five harvest cycles, three suffer significant losses, and rarely what is harvested is sufficient to meet the nutritional needs of families. On average, families must acquire 70% of the grain they consume.

The Community Banks for Basic Grains³² are one of the most common modalities of the CMF implemented by FAO and additionally play a significant role for the food security of families. As America Cárcamo of the WFP Guatemala states: *“Through the field visits, we have been able to note the positive perception of the Grain Banks by families. The price of the quintal is Q105.00 while the price in the municipal seat ranges between Q105 and Q125. The quality of the grain is good and better still, the families are happy because they save transport costs.”*

In this way, the Community Banks of Basic Grains allow for a stable supply of basic grains at the community level, largely avoiding price increases during lean months. Like the rest of the CMF, they allow for the development of savings and credit activities for community members and create community saving that is disbursed when the community declares a state of emergency, allowing an immediate and self-managed reactivation of livelihoods in response to extreme events. On the other hand, there is evidence of a high participation of women in Community Banks, thus contributing to the empowerment of women in the family and community.

With WFP's entry into the area, nine Community Banks of Basic Grains, located in communities prioritized by the PRRO, have been able to indirectly benefit from the cash transfer carried out by WFP. In fact, to reinforce this community mechanism, WFP has sensitized families to include the Grain Banks available in their communities in their purchasing options, as they can be an advantageous cost-saving option.

In this way, the influx of resources generated by WFP's entry into the area will add to the effort to build social and human capital that FAO is developing in these nine communities. Inversely, this provides WFP with a double dividend on its investment, since the FFA is contributing through the purchase of food, not only to strengthening the community economy but to building a community contingency fund, further increasing its impact on the livelihood resilience of the population.

32 FAO Honduras validated the Community Banks for Basic Grains methodology in 2012, and in 2014 it was transferred to Guatemala where 22 are already operating in various municipalities of the Dry Corridor.

Another benefit, though not initially planned, is that some of the Community Banks have purchased grains from the Association of Small Community Farmers of Esquipulas (APAC)³³ located in Chiquimula. Since 2014, APAC has been a beneficiary of the Purchasing for Progress³⁴ (P4P) Programme, implemented by WFP in Guatemala. As mentioned by Gustavo García, Director of Resilience and Climate Change Adaptation Projects of FAO Guatemala: *“The advantage of buying the grain from associations supported by the P4P for the organized groups that work in the community banks of basic grains is that they have better grain quality, a suitable humidity level and a contact in case of any problem.”*

4.1.2.2 Building assets for climate change adaptation

A further synergy that has taken place between FAO and WFP in the area has been the support given to the Ministry of Agriculture and local authorities for the development of five 450 m³ community reservoirs for rainwater recovery. The first was built in 2016, and four additional ones in 2017.

In the case of the four new reservoirs, planning was more integrated between the two agencies, the Micro-basin Councils and the respective municipalities.

The identification and demand of the reservoirs was made through the participatory diagnoses facilitated by FAO at the beginning of the project, which led to the development of management plans for the micro-basins and the formation of Micro-basin Councils. FAO also facilitated the feasibility study, design, technical assistance, training and acquisition of geomembrane for waterproofing, as well as other materials and supplies.

For its part, the WFP through the FFA, committed groups of about 30 families to provide the labor required for each reservoir, and municipalities contributed heavy machinery for the excavation of the reservoir. The other costs were met thanks to the capitalization of incentives provided by the beneficiaries and contributions from FAO and WFP.

Most of the reservoirs are currently at 90% completion, and both agencies will continue to provide technical assistance and training during the first semester of 2018.

33 APAC has been working with the WFP since 2014 under the P4P. Initially, the association was not known locally and even less at the level of the department of Chiquimula. Since then it has been strengthened in several areas and received financing from private banks and participated in regional fairs. APAC has sold corn and beans to the Chortijol cooperative, the UTZ-CHE organization, the WFP at the central level and in open markets of the PRRO project.

34 Programa de Compras para el Progreso [available at: http://documents.wfp.org/stellent/groups/public/documents/communications/wfp225361.pdf?_ga=2.142572402.1330585267.1508969713-2079736800.1501705991]

4.1.3 Added value of complementary work between FAO and WFP

The collaboration that has taken place between the two agencies in Chiquimula is an example of how the technical and territorial planning competencies of FAO can be combined with the strength of the FFA to generate an influx of resources focused on the most vulnerable and marginalized population, enabling and/or reinforcing their direct and active articulation in the development processes of livelihood resilience (in this case initiated by FAO).

It should be noted that because both the work approaches of FAO and WFP seek to break the assistencialism culture, their actions and intervention logic reinforce each other.

Mechanisms developed by the State, such as the COMUSAN and the CDC in Chiquimula, offer a key space to reinforce sustainable territorial development through coordination between FAO and WFP. Finally, of note is the commitment of the territorial technicians of both agencies, who have managed to combine the value and contribution of each organization for the benefit of the population, in spite of the lack of previous formal planning activities between the two agencies.



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4.2 Colombia: Linking food assistance with rapid recovery of livelihoods with a resilience approach



4.2.1 Background

“Our animals were dying because of the drought, we did not have anything to feed them, or our children,” says Juan Páez, Wayúu customary authority of the Wayamuchon community in the Department of La Guajira³⁵. This area is among the poorest in Colombia - in 2013, a little more than 50% of its population was living in a situation of poverty³⁶.

La Guajira is located in the northeastern end of the country. It is characterized by its extreme dryness with high temperatures that oscillate between 35 and 40 °C, scarce rainfall and strong winds. Its infrastructure coverage is low, with poor access roads, little access to basic services and a weak state presence.

The prolonged drought that occurred between 2012 and 2016 and stricter border policies for food and other goods between Colombia and Venezuela caused a progressive erosion of the livelihoods of its more than 900,000 inhabitants, of

35 FAO. 2016. Testimony extracted from the report Wajamuchon, a resilient community to drought [available at: <http://www.fao.org/colombia/programas-y-proyectos/historias-de-exito/waiamuchon-una-comunidad-resiliente-a-la-sequia/es/>]

36 WFP. 2016. Management model for a community bank. Riohacha, Colombia.

which about 450,000 belong to the Wayúu indigenous people, inhabitants of the area known as Alta Guajira.

This situation led to the food shortage, which directly impacted the food intake of the population and triggered malnutrition rates, associated diseases and child mortality³⁷. This led to the extinction of agriculture, the loss of native seeds and the death of at least 60% of the animals, mainly sheep and goats, which are the basis of the Wayúu indigenous economy.

4.2.2 How was the problem addressed?

To respond to the impact of the extreme drought on the livelihoods and food security of the population of Alta Guajira, between March 2016 and March 2017, FAO, WFP, UNICEF, OXFAM, ACH and OCHA formed a consortium for the execution of the project, “Strengthening local institutional capacities and the resilience of the Wayúu Communities affected by the El Niño phenomenon in the department of La Guajira”, also called the “Epijaalee” project, financed by the Humanitarian Aid Office of the European Commission (ECHO).

The project articulated actions based on the mandates and experience of each of the partners, providing a comprehensive response, which included actions on water, health, nutrition, food assistance and recovery of agricultural livelihoods.

Given the advanced situation of food insecurity and malnutrition among the participating communities, the project pursued a strategy which, on the one hand, included the immediate supply of food to those affected and, on the other, a set of actions aimed at the sustainable recovery of availability and access to food.

In this way, WFP focused its action on food assistance and the strengthening of knowledge and capacities for better nutrition of the population. FAO, for its part, focused on the rapid and resilient recovery of agricultural livelihoods through the establishment of agricultural production systems adapted to drought and the recovery of the health and reproductive capacity of livestock herds.

The coordinated intervention of the FAO and the WFP can be described in six areas developed in line with the dynamics of the implementation of the activities, which were complemented during the development of the intervention.

³⁷ According to figures from the National Administrative Department of Statistics (NADS), it is estimated that the infant mortality rate in La Guajira is 32 deaths per thousand births, compared to 17.8 at the national level.

Process of targeting actions based on water availability

Due to the extent of the affected area, the project initially targetted actions to identify those communities that met the minimum conditions to contribute to increasing the resilience of family and community livelihoods. It identified 27 potential communities belonging to three districts of the Municipality of Uribia (Porshina, Siapana and Nazareth) in Alta Guajira, serving a total of 903 families and 3,284 people, 54% of whom are women and 46% men.

A determining factor for the selection of communities was the presence of water in the settlement areas. An analysis found that only 16 communities had a sufficient flow to supply water for human consumption and a surplus to carry out productive agricultural activities.

With the support of OXFAM, the existing water extraction and supply systems in these communities (local windmills, solar energy, and micro-aqueducts) were upgraded. FAO provided technical assistance and capacity development for the implementation of mixed agricultural production systems, using systems based on the rational use of water, using risk reduction techniques and climate-smart agriculture. In the remaining communities, it provided only technical assistance and capacity development in animal health.

Compatibility of diagnostic tools

In the diagnostic phase, FAO and WFP developed a single baseline, reviewing and reconciling their respective livelihood diagnostic tools and coping strategies.

Each agency used its strengths to contribute methodologies for information gathering. FAO contributed the methodology for evaluating and quantifying livestock production and the methodology for evaluating dietary diversity, while the WFP incorporated its methodology for the assessment of food security and nutrition in terms of frequency of food consumption.

As pointed out by Harry Villarraga, FAO Territorial Coordinator in La Guajira: *"WFP arrived in La Guajira several years ago, which has allowed it to develop an in-depth understanding of the context of the region and the levels of food insecurity of the Wayúu population. Upon FAO's arrival in this Department, WFP's shared its knowledge to contribute to a rapid and accurate contextualization process. The subsequent joint entry of WFP and FAO into upper Guajira facilitated the appropriate diagnosis of the needs of the population of the region and the design of productive strategies to be concerted and implemented by FAO in regions affected by the prolonged drought."*

Food assistance as the beginning of recovery and resilience

WFP's food assistance was developed in addition to the food distribution actions initiated by the National Disaster Risk Management Unit of Colombia (UNGRD).

Food was distributed in two stages over a total period of approximately seven months. During the first stage, WFP distributed a "traditional" basket with non-perishable foods. In a second stage, given the extreme nutritional deficiencies observed in the population, it was necessary to introduce a "non-traditional" basket that also included fruits and vegetables.

The composition of the "non-traditional" basket was established through community consultation about food practices, identifying local products that would ensure a diversified diet. This exercise served as the basis for the definition of the type of food that the FAO action was to promote in the productive systems. Additionally, this basket was complemented by other foods that could not be produced in situ because of their agro-ecological characteristics but which were needed to compensate for nutritional deficiencies.

The "non-traditional" food baskets are an innovation of the WFP that, by including fruits and vegetables together with non-perishable foods, made it possible to resolve very advanced nutritional deficiencies in the population and, in synergy with the actions of nutritional education, facilitated and initiated the change of consumption habits in the population. This type of basket proved to be extremely useful and didactic when combined with medium-term actions to restore agricultural production, by linking the selection and distribution of food with the establishment of production systems in the communities.

Through community consultation, WFP identified a local product known as the guajirito bean, a drought-resistant bean that is part of the traditional diet of the Wayúu people, which was purchased from small producers in the area to be included in the food basket distributed to project participants.

The availability of food made it possible for inhabitants to attend the training and productive activities developed by FAO without having to worry about securing food and resorting to negative coping strategies.³⁸ Reinforcing this dynamic and applying the FFA scheme, WFP conditioned food assistance to participation in FAO training programmes.



©WFP/Marcela Capera

Agricultural production adapted to climate change with dietary diversity

The delivery of WFP non-traditional food baskets was articulated with FAO's model for the rapid recovery of agricultural production and the generation of resilience for vulnerable and isolated communities in emergency situations. The model has been developed by FAO in Colombia, and implemented, validated and adapted in different climatic, cultural and social contexts in different areas of the country. It is characterized by cooperation with the communities to convert beneficiaries into the main actors in the rehabilitation of their agricultural systems, and as is the case of La Guajira in a context of prolonged drought. This includes the recognition of the ancestral knowledge of the communities, their productive historical memory and consumption patterns. It also includes the participation of a cooking technician who participates in the project from the diagnosis and planning stage, speaks the local language and understand the culture and social practices around the food of the population where the intervention is being carried out, in this case of the Wayúu people.

³⁸ Negative strategies to cope with the situation, such as: migrate, sell breeding animals, remove children from school due to lack of resources, or consume seed reserves. These decreased from 11% to 4% by the end of the project.

The project's cooking technician developed Food Education actions to improve the culinary infrastructure; incorporate good handling and hygiene practices during food preparation; provide training in food storage techniques in the absence of refrigeration; and promote dietary diversity. This training was linked to the food supplied by the WFP baskets and those produced in the systems established with the support of FAO. All activities were based on the knowledge, traditions and cultural food preferences of the Wayúu population.

In parallel, the WFP developed complementary Food and Nutrition Education activities, emphasizing diversification and safety as a basis for improved biological use of food. Although FAO and WFP did not provide joint training, they did harmonize the key messages of FAO's cooking technician and WFP's nutrition training team for the population. *"In places where FAO's cooking technician was able to accompany the processes, there was a greater impact in dietary diversification, as new ways of preparing food or recovering traditional preparation of certain foods were made known, thus complementing WFP nutrition training,"* says Gabriel Martínez, Head of the Riohacha Sub-office.

With the support of FAO, the 16 communities benefiting from irrigation produced a total of 7.5 tons of food for human consumption including cereals, fruits and vegetables. These communities produced tool benches, materials, livestock feed and an environment for seed conservation.

"Purposeful production" is an innovation promoted by FAO that is implemented in other areas of the country and Latin America. It is characterized by the participation of cooking technicians from the diagnosis stage prior to the project intervention. It analyses the food consumption, safety, preparation and storage habits and rescues ancestral knowledge of the community. This information is combined with the nutritional analysis of the population, together with the potential of the productive systems provided by the technical team. Based on this information, the cooking technician proposes training strategies in nutrition for the food produced in the project's productive system.

Recovery of livestock production

The importance of the resources destined to the production of animal feed must be understood in the particular context of Wayúu culture. In addition to being the main source of protein (milk and meat) and the main savings mechanism and family contingency fund in case of crisis or need, goats in this culture also define lineage and family capital: marriage dowries are paid in goats, transferred as inheritance and used to consolidate alliances and in business in general.

FAO trained 22 community advocates in animal health and livestock production techniques adapted to drought contexts, emphasizing the recuperation of traditional practices combined with DRR and agro-ecological production techniques. In this way, social capital was generated to recover livelihoods with limited resources.

Approximately 40% of the irrigated area was devoted to the production of forage, which by the end of the Project produced 6.2 tons of forage consumed fresh, and 8.4 tons that were processed as silage and haylage in the 16 communities served. This made possible the sanitary and productive rehabilitation of the animals, providing milk and meat to the population. All this had an important impact on the health and economy of the families, enabling capitalization and savings and thus generating a family contingency fund for future crises.

It is important to note that the level of participation of women (60%) in productive activities was higher than that of men (40%) because women recognized the opportunity to secure healthy food for family consumption in exchange for their work in the productive systems.

The food assistance provided by the project was complemented prior to completion by the production of food of animal origin (milk, meat) and vegetable (legumes, corn, fruit, vegetables) obtained in the mixed production systems established in the communities, providing significant advances towards building family and community resilience.

The Bio-store: availability and access to foods with nutritional value

WFP, as part of the project's food access strategy, established a "bio-store" in the Uchipa community of the Nazareth Municipality. It was created to provide a local market for fresh, innocuous, diverse foods at fair prices. This methodology is specific to the WFP and was previously developed in three communities of La Guajira that were not part of the project.

The bio-store is inserted into the traditional community organizational structures, which established an Operational Committee for the biotienda that

is responsible for its administration and enforcing operating statutes, together with an administrator and a dispatcher.

WFP provided the infrastructure and training in administration, supply chains and food quality³⁹. In the first stage, the WFP supplied the bio-store with food as starting capital including rice, oil, corn, flour to make arepas, pasta, pumpkin, melon and watermelon. At this stage, the producers assisted by FAO also donated their surplus production to the store. In the second phase, closer to the finalization of the project, the producers sold their surplus to the bio-store or bartered for products.

The economic flow generated in the bio-store made it possible to pay the salaries of the two employees, replenish inventory and generate savings capital for the community. The average profit margin of the store is 26%. At the end of the year, the board of directors decides what to do with the savings generated by the bio-store, whether to invest in community works and needs or maintain a contingency fund for emergency situations.

The bio-store made it possible, on the one hand, for producers to commercialize surpluses from the production systems established with the support of the FAO (in cash or through barter), generating an additional income for these families. On the other hand, it provided neighboring communities that could not benefit from FAO's agricultural production module with access to affordable fruits and vegetables, in a nearby market and aligned with their practices and customs.

In the proposed scheme, WFP will continue to provide technical support and assistance to the bio-store during its first year of operation, at which time an evaluation will be conducted to determine additional time and accompaniment needs. At the time of the writing of this document, the production systems established by FAO continue to supply the bio-store. An evaluation will be made at the end of February 2018 to determine if the period of accompaniment is extended or technical assistance is reduced.

³⁹ The community board of directors and the store employees were trained by the WFP in administration issues (food and seed management; review of the arithmetic signs and calculator use; accounting management; product purchase and sales prices (food) in the community bio-stores; kardex management and accounting formats for the bio-store; purchases, sales and inventories/procurement) to promote good management of the bio-store.

4.2.3 Added value of complementarity work between FAO and WFP



In a situation of prolonged crisis, both agencies demonstrated the value of coordinating food assistance actions with mixed productive systems to effectively contribute to building resilience of family and community livelihoods.

Each agency provided support based on its strengths, applying complementary methodologies such as information-gathering tools, which achieved a more complete baseline and optimized collection time and information analysis. Likewise, the training provided by FAO's cooking technician with the purposeful production methodology and WFP's nutrition training, had a greater impact on changing the eating habits of the local population.

On the other hand, coordination of food assistance and agricultural production actions made it possible to solve the challenge of availability and access to essential foods at the beginning of the intervention, facilitating the participation of the population in the implementation activities of production systems. Food assistance was later suspended at the appropriate time to make way for production and allow for its consolidation.

The inclusion of the non-traditional basket provided foods of high nutritional value to meet the needs of the population according to the initial diagnosis. These foods were later replaced by the local production of animal and plant food products of equivalent nutritional values, with the potential to adapt to contexts of prolonged drought such as that of the Colombian Alta Guajira.

The establishment of the bio-store, in combination with the production of vegetable gardens and the reactivation of livestock assets, generated the possibility of savings as a contingency mechanism at the family and community level and promoted the consumption of a diversified diet.



4.3 Dominican Republic: Disaster and Risk Management governance with a focus on drought for the creation of resilience



4.3.1 Background

In 2015, the Dominican Republic suffered one of the worst droughts in its history, comparable only to that of 1997, also caused by the El Niño climate phenomenon⁴⁰. The water deficit lasted from 2014 through 2015⁴¹. Data collected in rapid evaluations carried out by OXFAM noted a decrease in crop production by up to 60% in some areas of the country, the deterioration of livestock health and the death of animals.

According to the Latin America and Caribbean Network of Environmental Funds (REDLAC), around 1.6 million people in the Dominican Republic were affected by the long-term drought from 2014-2015, through the first half of 2016. The drought impacted all pillars of food security by reducing the availability of food, decreasing family income, hindering access to drinking water and therefore the proper use of food. This situation determined a strong reduction of the resilience capacity of the population against future adverse weather events.

40 República Dominicana sufre su peor sequía en 20 años [available at: <https://www.efe.com/efe/america/sociedad/república-dominicana-sufre-su-peor-sequia-en-20-anos/20000013-2610719>]

41 Payano Almanzar, Reynaldo. 2017. Informe de Situación Actualizado sobre la sequía en República Dominicana.

Dominican society has cataloged the “drought” and desertification, mentioned in relation to the El Niño climate phenomenon, among the main threats affecting its territory, both in terms of water for human consumption and in terms of production for agricultural activities⁴². It is also estimated that 50% of the population is exposed to the consequences⁴³ of the drought. Despite these elements, there is still a lack of related information in the Dominican Republic, and there is no generalized definition of “drought”⁴⁴, therefore the institutional response has not developed in a comprehensive and strategic manner to effectively address the different causes and implications.

4.3.2 How was the problem addressed?

From March 2016 to October 2017, the “Drought Resilience” project was carried out with funds from ECHO to generate resilience in the livelihoods of the rural population subject to drought situations in the Dominican Republic. Under the leadership of FAO, the consortium brought together a series of institutions, each operating from its primary area of action to mitigate the phenomenon of drought related to FNS. The implementing partners were WFP, Oxfam and Plan International, working closely and actively with institutional partners, particularly the Ministry of the Environment; the Ministry of Agriculture; the sectoral water, sanitation and hygiene Institutions and Ministries; the institutions of the National System of Prevention, Mitigation and Response (NSPMR); and the local institutions in the beneficiary provinces.

The Project included two main areas of action. The first, led by FAO and WFP, worked with the institutions to strengthen institutional capacities to improve DRM with a focus on drought. The second, led by Oxfam and Plan International, which already had a presence in the areas of project implementation, focused on the development of community assets and capacities for drought prevention and management. The project worked in nine municipalities, located in the provinces historically most affected by drought: Monte Cristi, Dajabón, Elías Piña and San Juan.

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⁴² Meyreles, Lourdes & Ruíz, Víctor. 2011. Review, update and analysis of threats and risks in the Dominican Republic National Emergency Commission. Ed. Emergency Commission. Dominican Republic.

⁴³ Payano Almanzar, Reynaldo. 2017. Op. cit.

⁴⁴ Payano Almanzar, Reynaldo. 2017. Ibid.

As indicated by Joselin Rodríguez, Coordinator of the Drought Resilience project, FAO office in the Dominican Republic: *“The project had a very ambitious scope, and the important results achieved were the result of the commitment of all the partners of the consortium, which facilitated the coordination, multiplied the synergies and looked for ways to strengthen the initiative, even relying on technical or financial resources from other projects”.*

The community work primarily focused on developing community assets and social capital for DRM; integrated water resources management; water, sanitation and health capacities; and nutrition education. This area of work was especially favorable to the generation of synergies with other projects of the consortium partners. FAO used core resources to support the development of two pilot learning centers and installation of shade houses, one in the south and another in the north. For its part, WFP contributed with the installation water storage equipment and the rain gauges financed by the Forecast-based Financing (FBF) project.

The Petit Committee for drought is an inter-institutional governance entity, which exists to fulfill the mandate established by Law 147-02 on Disaster Risk Management to generate a platform to coordinate and integrate public, private and community efforts to solve the problem of drought. FAO has played a facilitating role in supporting the Ministry of Agriculture in convening and developing the committee. It currently brings together the most relevant public institutions working on drought including the Ministry of Agriculture, the Dominican Agrarian Institute (IAT), the Ministry of Environment, the National Drinking Water Institute (INAPA), the National Institute of Hydraulic Resources (INDRHI) and the National Office of Meteorology (ONAMET). It is expected that, in the long term, the Petit Committee will become a national consultative entity for drought.

In the area of institutional capacity building, the project focused its action on three main areas: the recognition and strengthening of the drought problem at the political level, as one of the main development gaps and with the potential to evolve as an emergency situation; the strengthening of capacities of the different NSPMR actors and in particular of the provincial and municipal Prevention, Mitigation and Response Committees (PMRC); and the development of an early warning system (EWS) for drought.

As mentioned by Pedro Zuccarini, Disaster Risk Management Coordinator of the WFP office in the Dominican Republic: *“The strengths of FAO and WFP were ideally combined to achieve results. FAO managed to position the issue of drought at a high level thanks to its greater experience in the field of governance and work with the sectoral institutions in agriculture, water and the environment. For its part, WFP focused on strengthening the operational components of the National Emergency Commission (NEC) and, in particular, the Emergency Operations Centre (EOC) and the provincial and municipal PMRC, with which it already had a long working relationship”*.

Although drought is included in the instruments of the NSPMR, since its consequences are a “silent” or slow-onset disaster - very distinct from sudden-onset disasters such as the consequences of the more frequent tropical storms or hurricanes in the country -, the country did not really have the necessary capacities to recognize and address drought as an emergency situation. For this reason, the drought of 2015 had already been in effect for 14 months before governmental institutions began drastic actions to address it.

A fundamental element in the political positioning of the drought was the constitution of the Petit Committee on drought, convened by the Ministry of Agriculture with the support and facilitation of FAO and composed of the authorities representing the main concerned sectors (see box).



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The Petit Committee, in collaboration with the Water Board⁴⁵ and with the support of the Drought Resilience project, organized the Water Fair and Conference on Water Resources, Water and Sanitation in March 2017, with the aim of unifying the vision of the authorities and main actors on water resources as a strategic axis of development in the Dominican Republic. This was the first time in 17 years that the institutions jointly celebrated the Water Day. In June 2017, the Water Good Practices Fair in San Juan de la Maguana was organized under the same scheme, which demonstrated that water is a real concern in many sectors of the population and civil society.

Additionally, FAO is still supporting the development of the Risk Management Plan for the Dominican Republic's Agricultural Sector that will include the sector's Drought Plan, which will include a two-yearly update.

For its part, WFP worked with the ENC and the PMRCs in the development of coordination, knowledge sharing, decision-making and leadership capacities for risk management, particularly related to the development of an agro-climatic ESW with emphasis on drought; and the development of capacities for disaster risk and FNS analysis through training the three-pronged approach (3PA) programming methodology in coordination with the FBF project - see box.

It should be noted that the participation and involvement of the decentralized representatives of the different sectors in the provincial and municipal PMRCs was helped thanks to the political positioning of drought at the central level. In addition, the linkage of the PMRCs with civil society and community actors was facilitated by the previous relationship of Oxfam and Plan International with these actors in their work areas and by the link between FAO and the agricultural unions.

A bottom-up approach was selected for the development of the EWS for drought. First, work was developed with communities to better understand the phenomenon of drought as a whole and to clearly identify needs and measures to increase resiliency. Then, local institutional levels were addressed and operational protocols were developed with the four provinces, in order for them to directly activate their response. Likewise, efforts were made to improve the transmission of the information generated by ONAMET, INDRHI and the Ministry of Agriculture to the provincial and municipal levels. Inversely, the feedback channels for community and local information to the central level were improved.

⁴⁵ The Water Resource Coordination Board is an entity created by decree of the executive branch in October 2016 within the Ministry of Economy, Planning and Development (MEPyD), which aims to develop and approve a comprehensive water management strategy that ensures the quality and quantity required for the sustainable development of the Dominican Republic.

The three-pronged approach (3PA) is a programming approach developed by the WFP for resilience building. It consists of three processes at three levels:

- Integrated Context Analysis (ICA) at the national level. This “bigger picture” programming tool identifies priority geographic areas based on convergence of historical trends of food insecurity, natural shocks and land degradation with other information, such as nutrition and livelihoods.
- Seasonal Livelihood Planning (SLP) at the sub-national level. This consultative process, with a gender lens, identifies coordinated programmes and partners to design multi-sector and multi-year operational plans.
- Community-based Participatory Planning (CBPP) at the local level. This “bottom up” tool ensures communities have a strong voice and will lead the setting of priorities. It is used to develop multi-sectoral plans tailored to local priorities.

This approach allows for a better understanding of the local context and livelihoods to support decision-making, while strengthening the capacities of the institutions and connecting the different actors from the community level to the national level.

This strategy makes possible to directly activate the response system at the local level when an alert is received without having to wait for a decision to be made at the central level, thus generating timely actions for early warning and response and avoiding the deterioration of the situation. To reach the population, several channels were developed, among them the irrigation boards and potable water community boards, the extension officers of the Ministry of Agriculture and the producer associations and unions.

This mechanism, although developed with a focus on drought, improved the institutional response against the impact of Hurricanes Irma and María in the Dominican Republic. In this way, the provinces and municipalities advanced mitigation actions such as the cleaning of riverbeds or reservoir outlet channels and rapid response actions with the pre-positioning of actors and teams in the field.

4.3.3 Added value of complementary work between FAO and WFP

The collaboration between FAO and WFP in this project demonstrates how each institution was able to use its positioning and institutional actors at different levels to achieve a greater impact, combining a change of attitude and political will in the perception and prioritization of the problem of the drought at a high level, generating operational capacities to channel this new focus of institutional attention.

In the same line, this experience showed the even greater potential of the strategic partnership between FAO and WFP with other institutions, in this case Oxfam and Plan International, which allowed the development of a comprehensive and strategic action, with greater efficiency in the distribution of tasks and roles, and the generation of synergies between the areas of community and institutional action.

Finally, it is worth noting the commitment shown by the project coordinators in making this initiative a successful experience, both in its institutional component and in that of community strengthening.



“Now we have a better understanding of what drought is, that it can become an emergency situation, and we now know how to address it, giving it as much attention as as other adverse hydro-meteorological events.”

Mayor of San Juan de la Maguana, Hanoi Sanchez



4.4 Guatemala - San Marcos: Linking health risk monitoring with livelihood resilience



4.4.1 Background

In Guatemala, 49.8% of children under the age of five suffer from chronic malnutrition, which is the highest rate of chronic child malnutrition in Latin America and the fourth in the world⁴⁶. In general terms, from mid-March to August, there is an annual reoccurring period of food reserve shortages at the household level, which associated with the seasonal increase in prices, generates a situation of heightened risk of food insecurity among vulnerable families. This situation is frequently amplified by losses and low yields caused by adverse weather events.

In 2013, a study determined that 70% of households with children under the age of two consume corn with higher aflatoxin levels than stipulated by the norm⁴⁷. Aflatoxins not only have a cumulative and usually irreversible effect, with carcinogenic, mutagenic and teratogenic effects, but also have an impact on the proper absorption of vitamins and minerals, causing stunted growth and development of the infant population.

⁴⁶ FAO, OPS/OMS. 2016. Panorama de Seguridad Alimentaria y Nutricional 2016. Santiago de Chile. Information from Encuesta Nacional de Salud Materno Infantil (ENSMI) 2014-2015

⁴⁷ Torres, O. 2013. Determination, characterization and evaluation of aflatoxins that influence the stunted growth of children in Guatemala.

It is expected that exposure to mycotoxins is higher in the most vulnerable rural population in Guatemala since corn is the main source of food; post-harvest activities and storage conditions are not the most appropriate; and low incomes, in general, only allow them access to lower quality corn.

As Torres mentions⁴⁸, rural villages stores sell first-class corn, chopped corn and rotten corn or “mulco”, and the buyers of “mulco” in each community are people living in misery as they don’t have the means to access better corn.

Unfortunately, at present, Guatemala does not yet have a sanitary control mechanism that allows for actions to reduce the consumption risks for human health.

Mycotoxins (aflatoxins and fumonisins) are toxic chemicals produced by certain species of fungi or molds with the ability to infest the grain in the field or after harvest and which pose a potential health risk to people and animals through the intake of food or feed made from these raw materials.

There are several factors that intervene in the process of fungal proliferation and contamination with mycotoxins: the temperature and humidity, the susceptibility of the crop and the variety in question, the maturity of the grains at the time of harvest and the type of storage are among the main ones. An adequate application of cultivation, harvesting and storage techniques can contribute to reduce the presence of mycotoxins in food.

4.4.2 How was the problem addressed?

With the financial support of the Sustainable Development Goals Fund of the Government of Spain, the United Nations System in Guatemala, through its specialized agencies, PAHO, FAO, UNICEF and WFP executed the Joint Programme “Food security and nutrition in four priority municipalities of the department of San Marcos” from May 2015 to April 2017. The third result of the Project - *“Food insecure families create healthy households, improve production*

⁴⁸ Torres, O. 2013. Determination, characterization and evaluation of aflatoxins that influence the stunted growth of children in Guatemala. Molecular Diagnostic Laboratory. Guatemala.

capacities, raise and invest income, and access and consume diversified food in an equitable manner” - was the responsibility of FAO and WFP, supporting the Ministry of Agriculture.

Both agencies joined efforts to approach this result from an innovative perspective, integrating the food safety component and in particular the problem of mycotoxins through a comprehensive action that sought to link and contribute to addressing the diverse causes of vulnerability to the food insecurity of the rural families of San Marcos.

Prior to the Joint Programme, FAO initiated the implementation of a project to support the Directorate of Food Safety of the Ministry of Agriculture, Livestock and Food (MAGA) for the development of a “Risk profile to determine the impact of aflatoxin-contaminated corn on human health.”

For its part, WFP, through the implementation of the P4P programme, had previous knowledge about the aflatoxin situation in the country and practical experience to detect it. The P4P seeks to use WFP purchasing power for the development of local grain suppliers by strengthening their productive and commercial capacities. With grain quality being one of the main challenges in Guatemala, WFP implemented the use of the Blue Box, a portable laboratory to evaluate the quality of corn in the field and identify the presence of aflatoxins above 20 parts per billion (ppb), the threshold established by the sanitary norm⁴⁹.

Both experiences and knowledge provided key elements for the elaboration of the FAO and WFP Local Strategy to address the problem of mycotoxins (aflatoxins and fumonisins) contamination of corn. It considered several areas of action: the development of institutional capacities and intersectoral coordination; the strengthening of the food system (based on good production, post harvest and storage practices); periodic monitoring of aflatoxin and fumonisin levels in the grain; and the development of a communication strategy for development with a risk-based management approach, which was addressed in a synergistic manner through the programme’s awareness campaigns and nutrition and health education.

⁴⁹ The blue box is an innovative mechanism that contains the instruments and reagents necessary to evaluate the quality of the grain, such as a pike for sampling, digital balance, voltage converter, moisture meter, mill, sieves, a digital clock and the aflatoxin test. The use of the blue box allows these evaluations to be carried out directly in the field, which have a high value in didactic terms, by directly and immediately demonstrating the impact of the application or not of the recommended practices.

Community extensión agents is an institutional guideline promoted by FAO in Guatemala. It is an agricultural extension strategy that is characterized by a horizontal transmission of knowledge and is based on the valorization of local knowledge and technological innovation as processes that strengthen social capital, improve knowledge management and increase the possibilities of sustainability. The promoters are collaborating producers, entrepreneurs, innovators and researchers with the ability to communicate or teach their peers. These are usually people who exercise a certain leadership in the community, who participate voluntarily, without earning a salary and who are democratically elected.

The strengthening of inter-institutional and intersectoral coordination was carried out by the MCFNS of the four municipalities participating in the Joint Programme. This made it possible to address the problem and involve all the municipal actors involved in agricultural, health and education, as well as having the participation and consent of the municipal governments and sector representatives of MAGA, the Ministry of Public Health and Social Assistance (MSPAS), the SESAN and the Ministry of Education (MINEDU).

Since the problem of mycotoxins is not widely known and understood, work began with sensitization and training workshops for the members of the MCFNS themselves. Next, the personnel of the National Rural Extension System received training at the departmental and municipal levels, as well as the community advocates (see box) who were identified and trained by the programme. In coordination with the MSPAS staff, the Counsellors mothers were trained (see box), which constituted one of the pillars of the CP to address the problem of child malnutrition and health, including the effects of maize contamination with aflatoxins and fumonisins.

The communication strategy for a risk-based development approach also made it possible to raise a broader awareness of mycotoxins problem in the population. To this end, the issue was incorporated into the Commission for Education for Development of MCFNS, supported by UNICEF, for dissemination on local radio and television channels.

The strategy of **Counsellors mothers** is a community education methodology developed by the WFP in Guatemala for the constitution of support groups for the improvement of food and child care focused on the 1,000 day window. Counsellors mothers provide spaces for pregnant women and mothers with children under the age of two to share experiences and information through mother-to-mother support groups, home visits at key moments and individual counseling. This strategy also contributes to the empowerment of women and the promotion of gender equity, human rights and self-esteem.

The monitoring of the amount of aflatoxins present in the corn was carried out in the field on a quarterly basis using the “blue box”. The systematic socialization of the results contributed, on the one hand, to the sensitization strategy for the participating families, and on the other, to provide feedback on the action of the different institutional actors of the MCFNS based on the results obtained.

The strengthening of the production capacities of the farmers contemplated the milpa (corn field) and backyard systems. Both were considered in the analysis of the maize food chain and the identification of critical points for the proliferation of aflatoxins. FAO addressed the problem in the cultivation, pre-harvest (double, defoliation) and harvest stages. WFP and FAO jointly worked on post-harvest (drying, selection) and storage (determination of moisture content, quality).

One of the interesting innovations of the project was the combined approach from the productive, food and health perspective, thus closing the production and consumption chain cycle. For this, the participation of the Counsellors mothers in the production training for agricultural advisors was encouraged, and, inversely, participation of the advisors in the nutrition and health training of the Counsellors mothers. It should be noted that 60% of the advisors participating in the project were women.

This made it possible for the beneficiaries to truly appreciate the concatenated impact of the measures as a whole, both in the control of aflatoxins and in a greater livelihood resilience, both achieved thanks to better agricultural production, less post-harvest losses, healthier animals and better food and nutrition conditions.

As indicated by the project’s final evaluation, there was evidence that the cases where aflatoxins were present above 20 ppb decreased from 11% to 2.7% between baseline sampling and the conclusion of the programme; and that all women heads of household carried out at least two practices to reduce aflatoxins

in post-harvest and storage. For their part, 70% of the producers mentioned implementing at least five good practices in the cornfield system and five in the patio-hogar system.

Following the implementation of the programme, the municipal and departmental authorities endorsed the local Approach Strategy for the prevention of aflatoxins and fumonisins developed by FAO and WFP. Therefore, in order to provide sustainability to the initiative, WFP used its own resources to train and transfer the blue box to three of the four beneficiary municipalities of the Joint Programme that, with the support of the MAGA staff, committed to continued monitoring. For its part, FAO, in conjunction with MAGA, is in the process of publishing the "Aflatoxin Risk Profile in Maize in Guatemala."⁵⁰

4.4.3 Added value of complementary work between FAO and WFP

The combination of WFP experience in handling aflatoxins with the use of the "blue box" and FAO experience in implementing projects to strengthen family farming and institutional strengthening led to the successful pilot of Guatemala's first local experience with an indigenous subsistence population that specifically addresses the control of the impact of aflatoxins on food.

Another important aspect of this experience was the positive effect for the beneficiaries of the project thanks to the added value of the combination of community education methodologies developed by both institutions: the WFP's "Counsellors mothers" on nutrition and health and FAO's community extension agents for the development of agricultural production.

This synergistic approach made it possible to complete the production and consumption chain cycle, including household health, achieving better understanding and better decision making towards the set of elements needed to reduce the vulnerability of households.

The development of this community social capital was in fact one of the project's most valued successes. The final evaluation highlights the demand that exists both in the institutions and in the population for the "Mother Counsellors" and community advocates, providing them with a minimum of resources for their continued support to the population.

"I did not know that if I ate rotten corn it made me sick; I did not know that if I gave it to my animals, it hurt them. Now I know that if I pick it, I dry it well and I store it well. I no longer have problems and my family will be better." Rosaura Victorina López Hernández, community promoter of Esquipulas Palo Gordo.

⁵⁰ Perfil de riesgo de aflatoxinas [available at: <http://www.fao.org/guatemala/noticias/detail-events/es/c/432061/>]

5. Experiences for resilience driven by each agency with the potential for collaboration.



5.1 Ecuador: Adaptation to climate change for livelihoods resilience and food security and nutrition (by WFP)



5.1.1 Background

Studies on the impact of climate change in Ecuador show, particularly in mountainous areas, hazards related to the increase in average temperature, alteration of rainfall patterns, loss of glaciers, deterioration of forests, altitude grasses and desertification, and an increase in the frequency and intensity of adverse events. The consequent changes in climatic conditions, in turn, generate multiple impacts in climate-dependent sectors, with food systems being one of the most affected fields.

The area of influence of the Cayambe volcano in the province of Pichincha in northern Ecuador and the Jubones River Basin in southern Ecuador are among the most affected areas by climate variations. The high recurrence of adverse

climate events, the high rates of food insecurity and poverty⁵¹ and the limited preparedness at the local level to respond to these hazards have led to a constant and accelerated erosion of livelihoods, increasingly threatening the FNS of the population.

5.1.2 How was the problem addressed?

WFP, together with the Government of Ecuador, through the Ministry of the Environment (ME) and in partnership with the Ministry of Agriculture and Livestock (MAL), developed the project: “Strengthening the resilience of communities to the adverse effects of climate change with a focus on food security and gender considerations in the Jubones river basin and in the province of Pichincha” (FORECCSA) funded by the Adaptation Fund. Its execution began in 2011 and is scheduled until 2018.

The Sub-Secretariat for Climate Change of the MAE, through the Directorate of Adaptation, is responsible for execution and coordination, together with the WFP, which is in charge of financial and programmatic management, providing technical support to national and local partners. The MAG advises on food security and agricultural practices, while the Decentralized Autonomous Governments (DAG) at the Province (in Pichincha), Municipal and Parochial (in Jubones) levels are the executing partners in the territory.

With the slogan *“El Clima está cambiando, por una buena alimentación nos vamos adaptando”* [“Climate is changing, we are adapting for good nutrition”], and contemplating a community- and ecosystem-based adaptation approach, the FORECCSA Project seeks to reduce vulnerability to the adverse effects of climate change and food insecurity in the most vulnerable cantons in the intervention zones.

The incorporation of the FNS approach in adaptation to climate change

The FORECCSA project sets itself apart from other sectoral initiatives, particularly because of its innovative approach that links the climate components to FNS and gender equity to achieve a comprehensive and effective approach to reducing the vulnerability of the rural population. Its role in promoting inter-sectoral articulation between the national entities governing public policy and 50 local governments is also an important trait of the project.

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⁵¹ All cantons supported by the project have malnutrition rates above the national average (25.8%), for example a range of 22-29% Cayambe, 29-35%, in Pedro Moncayo, 61-73% in Saraguro and 63-70% in Nabón (data from the living conditions survey, INEC, 2006).

This innovative approach was valid from the very beginning with the identification of the parishes and beneficiary communities, for which the project used a methodology for the assessment of the vulnerability to climate change, placing FNS at the center of the analysis. To this end, an exhaustive characterization of the population's FNS sensitivity was carried out, considering its four dimensions of availability, access, use and stability in relation to the main threats posed by climate change in the project area: water scarcity, frost and heavy rains; and this was contrasted with the adaptation capacity of the communities and the population. This analysis was informed by participatory assessments carried out at the community level.

Based on participatory vulnerability analysis, adaptation plans were developed in conjunction with communities and local governments in each project location. For this, 98 adaptation measures were identified, with special attention to local needs, ancestral knowledge and the knowledge of women in the communities. The measures sought to improve agricultural productivity during the dry season and preserve the productive capacity of agricultural fields. In accordance with FORECCSA's own approach, these measures should also protect the health and nutrition of participating families and promote gender equity. The implementation of adaptation measures were carried out through community "mingas"⁵² where community members worked with local technicians.

Ecosystem restoration, water shortage, food production and dietary diversification were the first facet of the problem addressed by FORECCSA, while the second facet addressed all of the elements related to the adequate use of food and its impact on family health. To achieve this, sensitization, community education and training campaigns were carried out, considering sustainable and resilient agricultural and nutritional practices and involving the minga participants and other members of the population on a monthly basis. This led to a greater ownership of the work promoted by the project, since it transferred greater meaning to productive and climate change adaptation tasks when linked directly with health and well-being: "feed the mind to fight hunger." In this way, the project also achieved an integrated approach to the four dimensions of FNS through field activities.

⁵² Community Minga: The word minga derives from minka in Quechua. Minga is a collective work mechanism to carry out activities which generate benefit for the community.



“The most important thing for our countries is to be able to supply food for population subsistence (...) for this, working with the communities and adapting them to climate change is fundamental (...) if we want growth to be done sustainably and responsibly.”

Former Minister of the Environment, Walter García.

Based on the 98 adaptation measures that were implemented in the communities, 10 typologies were identified that were prioritized during the project and incorporated as part of national public policies for climate change adaptation⁵³. These measures were implemented together with the strengthening of the network of meteorological stations in order to improve climate monitoring and establish information systems that support climate risk management for food security.

his policy approach was also institutionalized at the local level through the territorial development and land use plans (PDOTs) that the DAG of the FORECCSA intervention area have developed, thus demonstrating the relevance and ownership of the work by local authorities.

At present, the FORECCSA Project has improved the quality of life of 12,000 families in their areas of intervention. Some of the noteworthy results are:

⁵³ The typologies were: strengthening of community irrigation in areas of drought; the use of organic fertilizers to retain soil moisture; the raising of small animals as a source of protein; the allocation of parcel irrigation in areas of drought; the promotion of silvo-pastures for the creation of microclimates; the improvement of the water supply for human consumption; the promotion of family gardens; the promotion of drought-resistant seeds; the protection of water sources; and the incorporation of variables of climate change, food security and gender in policies, planning and local budgets

- 4,500 families have improved their quality of life by having a permanent source of irrigation water to produce food year-round.
- 4,900 farms⁵⁴ as well as "farmers' pantries and pharmacies" have incorporated and improved agricultural practices to retain soil moisture, create microclimates, mitigate water shortages and diversify diets.
- 2,300 families have access to a permanent and safe source of potable water.
- 38 local DAG have developed local policies to continue working on adaptation to climate change.

The experience of the FORECCSA Project was presented by Ecuador as an innovative proposal for the adaptation to climate change of rural populations at the COP22 in Marrakesh and the Habitat III forum held in Ecuador, both in 2016.

The gender dimension, a fundamental pillar for reducing vulnerability to climate change in FNS

It is recognized that climate change and disasters have a differentiated effect on men and women and disproportionately affect the poor and marginalized population. In 2014, the percentage of poor women was 18% higher than that of men in LAC. On the other hand, women represent 43% of the agricultural workforce and produce between 60% and 80% of food⁵⁵ in developing countries. In the specific case of FORECCSA's intervention zone, a high percentage of women are head of household, most are single mothers or have been left alone as a result of the migration of their husbands.



"They call me the water guardian, now not only men are rulers, now so are women ... thanks to the project we already have water and we can continue sowing because if we do not sow, how will we feed ourselves?".

María Dolores Quindiamba
from the San Luis de Ichisí
community.

⁵⁴ Family plots for the cultivation and raising of animals intended for self-consumption

⁵⁵ FAO. Food Security and Nutrition (available at: <http://www.fao.org/americas/perspectivas/seguridad-alimentaria/en/>)



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The relationship between gender and food security is fundamental, especially in rural areas, as women are the main food producers and responsible for ensuring the survival of the family. In this sense, the loss or reduction of resources such as water, fuel and food, directly generates more work, concern and stress for women.

For all these reasons, the FORECCSA project had the vision to include, from its inception, the gender approach as a crucial element to reach its objectives and achieve its results. The application of a gender perspective, taking into account the different needs and interests of men and women and encouraging the empowerment of women, has proven to be a key factor in promoting the processes of creating sustainable resilience to climate change.

The operationalization of the gender approach in FORECCSA was carried out, with the support of UN Women, on three fronts: reducing women's workloads and facilitating food production tasks (practical needs); contributing to the strategic needs of income generation, savings and financial independence of women through the production of food or small animals; and promote women's access to decision-making spaces such as boards of directors or positions on the irrigation boards or in the producer organizations.

In order to achieve the effective participation of women, the project developed a series of strategies that include the training of the project team, development

of practical tools for its implementation, specialized accompaniment, training of men in gender considerations, adjustment of schedules based on women availability and the creation of “day care centers” that facilitate the participation of women with young children.

5.1.3 Added value of WFP's work in the project

Applying WFP's directive on mainstreaming FNS in all its projects, the main innovation of FORECCSA was to consider the approach of FNS, specifically including components of nutrition and health as a common thread in its design and implementation.

This achieved, on the one hand, a greater conceptual approach and understanding of the problem of FNS by sectoral environmental actors. This process was nourished by the experiences and lessons learned from the WFP on the implementation of FNS-sensitive programmes with specific nutrition and health components, for which it provided diverse tools for monitoring and evaluation, and training⁵⁶.

On the other hand, this approach was essential to achieving the effective participation of the population, by closing the cycle between adaptation, production, food and the health of families; thus, generating food systems that are strengthened and adapted to climate change.

The FORECCSA project, understanding the central role of women in nutrition and adaptation to climate change, managed to create spaces that not only recognize women as participants but as agents of change; thus, moving from a gender-sensitive approach to an “active” gender approach.

⁵⁶ The educational modules addressed the following topics: food and nutrition in the life cycle, hygiene and handling of food at home, family coexistence, gender and food and nutrition security, cultural diversity, family agriculture and emergency preparedness.



5.2 The Dominican Republic: adapting the production system to drought conditions (by FAO)



5.2.1 Background

In recent years, the northwest region of the Dominican Republic has experienced significant growth of family livestock, and dairy activity has become one of the main sources of family income. In general, the conditions in the region are favorable for this activity. However, there are areas, mainly in the province of Monte Cristi, that are subject to recurrent and prolonged episodes of drought that, due to climate change, have been increasingly intense and frequent.

As a result of the El Niño climate phenomenon and the consequent rain shortage in the country in 2014 and 2015, there were areas in the province of Monte Cristi where situations of drought lasted over 12 months, resulting in the death of hundreds of livestock, the loss of production and the erosion of the livelihoods of rural families.

Currently, livestock production in this area has significant constraints in responding to the negative effects of drought, such as: low-technology traditional production systems, insufficient planning of livestock feed, limited use of forage species adapted to dry areas, ignorance of forage conservation techniques, and lack of efficient water conservation and management systems.

5.2.2 How was the problem addressed?

Seeking a solution to this situation, FAO supported the Ministry of Agriculture and its Extension Program for Dairy Farms (MEGALECHE), the National Council for Regulation and Promotion of Dairy Industry (CONALECHE), the Federation of Livestock Farmers of the Northwest (FEDEGANO) and the El Cayal Farmers Association, through the Technical Cooperation project for the “strengthening of technical assistance services to accompany the validation and implementation of a livestock production model suitable for dry areas of the Dominican Republic.”

For the in situ validation of the good practices of the drought-resilient livestock model, pilot farms were selected where the following sequence was implemented: 1) Promotion of the forage species needing little water: Opuntia, locally called nopal, which can be planted in the dry period since it does not require water and grows wild in the area. The use of the plant for animal feed begins 12 to 18 months after the plantation is established, which is done by cutting the leaflets and supplying them whole or chopped to the cattle. 2) Establishment of sugar cane, flax and moringa plots to complete the production of balanced feed in energy, proteins and other essential elements for livestock and dairy production. 3) Silage production and conservation of livestock feed.

The producers who made their farms available as pilot units participated in the training provided on the use of good practices and were responsible for disseminating the results to other producers. At the same time, the participation of women within the project and training sessions was encouraged, especially in the practical sessions.

The extension officers who offered the technical assistance service to the producers in the implementation of the drought-resilient livestock model were trained, in turn, in the use and transfer of good practices for drought conditions and also monitored the results in the pilot farms.

Thanks to the livestock model developed based on the nopal cactus as a source of water and energy, its combination with banks of forage legume protein and conservation to supplement nutritional deficiencies (fiber and protein), it was possible for the pilot farms to maintain good quality and consistent quantity milk production throughout the year during the drought of 2015, which in turn maintained a stable income for the producers.

During the same period, the number of livestock also increased since feed availability allowed the producers to acquire more animals, generally from other farms in the area that had to sell their animals due to lack of food, thus eroding their livelihoods.

These results have contributed to the interest of other area producers in the implementation good practices, for which owners of pilot farms have become a reference and offer recommendations.

In the same way, the technicians of the extension service of the MEGALECHE Programme are trained and have a concrete experience to offer specialized technical assistance to producers interested in establishing the nopal cactus-based livestock production system.



I have already solved my forage problem on the farm planting Nopal, Leucaena, Piñón Cubano and other legumes that have motivated me to continue on the farm, without the risk that the cows will die. For the area it is a good animal food because other farmers, outside the project, are motivated like me and now they have started to plant it (Nopal)".

Hipólito Martínez, Producer -
pilot estate

Following a workshop held in February 2017 for agricultural producers from different provinces affected by the drought, ranchers and sector authorities showed a significant interest in systematizing and replicating the experience of El Cayal in the provinces of San Juan de la Maguana and Elías Piña, located in the south region of the country.

In this sense, the General Livestock Department of the Ministry of Agriculture with the support of FAO is currently developing a guide for the implementation of the nopal cactus-based livestock model on the use of nopal and protein banks with forage crops for livestock feed and strengthening the corresponding capacities of the Extension Service of the provinces cited for the dissemination of the model to more producers, men and women.

5.2.3 Added value of FAO's work

The technical expertise of FAO and its ability to triangulate experiences of different regions and countries was key to the development of a technology adapted to drought based on the production and use of the nopal cactus for livestock feed. This is a valuable alternative to address the effects of drought in dry tropical regions of LAC.

Similarly, FAO's capacity to develop technology transfer systems and institutional capacity development are central to the current process of strengthening the capacity of the Extension Service of the Ministry of Agriculture, which should provide technical assistance and accompaniment, not only to the producers of El Cayal but also to other interested producers in the regions affected by the drought. In that sense, the training provided benefited directly to 144 people, of which 27 were extension workers from the MEGALECHE program of the General Livestock Department of the Ministry of Agriculture, 3 technicians from NGOs; and 114 were small producers from the North and South-western regions, trained by extension workers of the project. It is important to highlight that of the total trained, 17% were women.

Before the project, the plant was known as wild, medicinal and ornamental. Nevertheless, the project was able to show its qualities in nutrition, portability, profitability and adaptation to dry weather, which make the crop an alternative to face scarce rainfall periods.

Incorporation of nopal cactus to forage crops under drought conditions for livestock feed in Dominican Republic constitutes an important finding for MEGALECHE program, since it is a valuable tool for extensionists to offer producers a livestock feeding alternative for dry periods.

It should be noted that the experience of El Cayal was shared with producers in the southern area of the Drought Resilience project (chapter 4.3) where, with the support of the Extension Service, five pilot plots have already been developed.

6. The complementary work between FAO and WFP: effective impact in the countries

Through the analysis of the different experiences studied in this document, different contexts of collaboration between FAO and WFP have been observed.

The first is related to the **complementarity between their respective mandates**, which have materialized in institutional strengths and have generated synergies and added value in several areas of action:

1

In the experience of Alta Guajira, Colombia, the food assistance provided by WFP has been ideally linked to FAO actions focused on the rapid recovery of agricultural production and the generation of livelihood resilience.

2

In the Dominican Republic, operational experience in the WFP response phase and FAO's experience in governance and public policy development complemented each other to strengthen government capacity in DRM.

3

In the case of San Marcos, Guatemala, the community education methodologies provided by both institutions, in nutrition and health by the WFP Counsellors Mothers and in agricultural production by the FAO community extension agents, have made it possible to close the food system cycle and achieve a greater impact, particularly on women heads of household.

The second is related to the circumstantial **convergence of both institutions on the same territory:**

In the case of Chiquimula, Guatemala, WFP strengthened the Community Banks for Basic Grains (CBBG) promoted by FAO, through the conditioning of FFA for the purchase of food from these CBBG.

On the other hand, in the same territory, FAO and WFP achieved a more effective and efficient use of resources thanks to the orientation of the FFA to the construction of infrastructure previously identified and promoted with technical assistance from FAO.

A third area of collaboration that can be foreseen is the **development of a sustainable agriculture adapted to the climate that guarantees the FNS of the population.** The experiences reported in chapter 5 show how both agencies are implementing initiatives that open interesting opportunities to deepen synergies, complement work areas and enhance actions beyond what has been achieved to date.

The case of El Cayal in the Dominican Republic demonstrates the technical expertise of FAO in the development of productive solutions adapted to drought conditions and capable of generating livelihood resilience and FNS, as well as the ability to generate institutional replication capacities.

For its part, in the case of the FORECCSA project in Ecuador, WFP has demonstrated its capacity to position the dimension of FNS and its adequate approach in an institutional sectoral context of environment and climate change.

Another important aspect to highlight is the **innovation capacity** observed in the two organizations in the development and use of methodologies in initiatives for the creation of livelihood resilience, such as:

The use of the "blue box" methodology in the framework of a comprehensive effort to strengthen the food system of indigenous and subsistence population, led to, for the first time in Guatemala, a successful development and piloting of an experience to address the problem of mycotoxins at the community and institutional level with local governments.

The model for the rapid recovery of agricultural production with a resilience approach used in Alto Guajira led to the improvement of food security in hard-to-reach rural communities, generating awareness about the importance of a healthy and varied diet and recovering the historical productive memory as a measure against climate variability.

Finally, it is important to highlight the significant **methodological convergences and approaches observed through the cases studied that have mutually reinforced the action of both organizations:**

1

The counterpart that the beneficiaries of FAO in Guatemala must contribute in the projects for the inputs received (capitalization of incentives) that are then invested in the mutual contingency funds and; the conditioning of the food assistance to the construction of community assets by WFP, adopt the same approach and seek to cut of asistencialism practices.

2

FAO and WFP interventions for the development of community assets are based on territorial analyses that seek to address the causes of vulnerability-related to functionality problems of micro-basins and/or ecosystems.

3

The application of the gender approach is a central element in both the work of FAO and WFP in the framework of strengthening livelihood resilience and FNS; therefore, the work of both organizations converges to generate behavioral changes in men and women and strengthen the role and leadership of rural women.

4

The importance that both agencies attach to the development of community capacities and human and social capital at the local level mutually reinforce to strengthen the creation of self-managed resilience within the populations.

5

Both agencies promote coordination and collaboration with government institutions and civil society, each one operating from its areas of action to strengthen public and private capacities for risk-sensitive sustainable development that is capable of fostering resilient societies with FNS.

7. Bibliography

AECID. 2013. Guía para la implementación de sitios centinela en Centroamérica: Un sistema de vigilancia y alerta temprana de la inseguridad alimentaria y nutricional basado en la comunidad [Available at <https://reliefweb.int/sites/reliefweb.int/files/resources/Guia%20para%20la%20Implementacion%20de%20Sitios%20Centinela%20en%20Centroamerica.pdf>].

EFE AGENCY. 2015. República Dominicana sufre su peor sequía en 20 años. EFE online edition, May 12, 2015 [Available at <https://www.efc.com/efe/america/sociedad/republica-dominicana-sufre-su-peor-sequia-en-20-anos/20000013-2610719>].

AGENDA 21. 2017. Final report of the evaluation of the PAHO/WHO-FAO-UNICEF-WFP Joint Programme: “Food and nutrition security of the Department of San Marcos” – Component 1. Guatemala.

ECLAC. 2015. Climate change adaptation in Latin America and the Caribbean. Santiago de Chile.

ECLAC, FAO, IICA, 2015. The Outlook for Agriculture and Rural Development in the Americas: A Perspective on Latin America and the Caribbean 2015-2016 San Jose, Costa Rica. [Available at <http://repositorio.cepal.org/handle/11362/39024>]

Comisión Nacional para la Reducción de la Desnutrición Crónica, 2016. Estrategia Nacional para la prevención de la desnutrición crónica 2016-2020. [Available at <http://www.sesan.gob.gt/wordpress/wp-content/uploads/2017/07/Estrategia-para-la-Prevencion-de-la-Desnutricion-Cronica.pdf>]

DANE. 2015. Infant mortality in La Guajira [Available at <http://www.dane.gov.co/index.php/estadisticas-por-tema/salud/nacimientos-y-defunciones>]. Accessed 10 October, 2017.

FAO

2012. Guía básica para implementar un banco de granos. Honduras. [Available at <http://www.fao.org/3/a-at791s.pdf>]

2012. Voluntary Guidelines on Responsible Governance of Tenure of Land, Fisheries and Forests in the context of national food security [Available at <http://www.fao.org/docrep/016/i2801s/i2801s.pdf>].

2013. Strategic Objectives of FAO [Available at <http://www.fao.org/docrep/018/mi317s/mi317s.pdf>]. Accessed 16 October, 2017.

2014. Family Agriculture in Latin America and the Caribbean: Policy Recommendations. Santiago de Chile.

2015a. Panorama of Food and Nutritional Security in Latin America and the Caribbean. The region has achieved the hunger goal. www.fao.org/publications

2015b. El ahorro, un instrumento de resiliencia de los medios de vida [online video] [Published 17 April 2015 on the FAO video channel (Available at <https://www.youtube.com/watch?v=qci4aL1apfg>)].

2016a. The impact of disasters on agriculture and food security. Rome (Available at www.fao.org/3/a-i5128e.pdf).

2016b. Voluntary Guidelines for Agro-environmental Policies in Latin America and the Caribbean. Santiago de Chile.

2016c. FAO Regional Initiative for Latin America and the Caribbean: Regional initiative 3 Sustainable use of natural resources, adaptation to climate change and disaster risk management. Santiago de Chile.

2016d. Climate change and food security and nutrition. Latin America and the Caribbean (policy guidelines). Santiago de Chile.

2016e. Increasing the resilience of agricultural livelihoods, <http://www.fao.org/emergencies/resources/documents/resources-detail/en/c/414615/>

2016f. Food and Agriculture: Key to achieving the 2030 Agenda for Sustainable Development (Available at <http://www.fao.org/3/a-i5499e.pdf>).

2017. Guidelines and recommendations for the Implementation of the Sendai Framework for Disaster Risk Reduction in the agriculture and food security and nutrition sector – Latin America and the Caribbean. Santiago de Chile. (Available at <https://www.unisdr.org/we/inform/publications/54350>)

2017b. 5 ways FAO helps people in emergencies: Saving livelihoods saves lives. Online article 18 August 2017 (Available at <http://www.fao.org/zhc/detail-events/en/c/1029001/>)

FAO and PAHO. 2017. Panorama of Food Insecurity in Latin America and the Caribbean. Santiago de Chile.

FAO and WFP

2016. Reunión regional sobre la resiliencia de los medios de vida y seguridad alimentaria en América Latina: compartiendo experiencias. Riohacha, Colombia.

2017. Memorandum of understanding between the Food and Agriculture Organization of the United Nations (FAO) and the World Food Program (WFP). Rome.

2017b. Joint work between the World Food Program (WFP) and the United Nations Organization for Food and Agriculture (FAO) in the department of Chiquimula, Guatemala.

FAO, FIDA, PMA

2015. *Conceptual framework for collaboration and partnerships among the Rome-based agencies for the strengthening of resilience for food security and nutrition* (Available at http://documents.wfp.org/stellent/groups/public/documents/manual_guide_proced/wfp276477.pdf). Rome.

2016. Collaboration among the United Nations Rome-based Agencies (RBA): Delivering on the 2030 Agenda, (Available at <http://documents.wfp.org/stellent/groups/public/documents/resources/wfp289117.pdf>)

2017. Livelihood Resilience Program (2017-2020): FAO's commitment to the Peace Agreement and the resilience of livelihoods in Colombia. Rome.

FAO, WFP, PLAN INTERNACIONAL, OXFAM, EU. 2017. Power Point presentation: Incorporación del enfoque de resiliencia de los medios de vida y aseguramiento de una respuesta oportuna a la inseguridad alimentaria y nutricional a través de la aplicación de las capacidades de adaptación, absorción e innovación en la gestión integral del riesgo sequía en la Republica Dominicana.

Feed the Future. 2017. Discussion meeting about the situation of mycotoxins and post-harvest in Guatemala, effect on health and nutrition and actions to be taken. Guatemala.

Germanwatch, 2017. Global Climate Risk Index 2017. Who Suffers Most From Extreme Weather Events? Weather-related Loss Events in 2015 and 1996 to 2015. <https://germanwatch.org/en/cri>

INE. 2014. Caracterización departamental. Chiquimula 2013 (Guatemala).

InfoRM Index: Available at <http://www.inform-index.org/>

Ministerio de Agricultura Ganadería y Alimentación. Gobierno de Guatemala. Undated. Estrategia para reducción del consumo de maíz contaminado con aflatoxinas. Guatemala.

Ministerio de Agricultura, Alimentación y Medio Ambiente. Gobierno de España. 2015. Recomendaciones para la prevención, el control y la vigilancia de las micotoxinas en las fábricas de harinas y sémolas.

Meyreles, Lourdes y Ruíz, Víctor. 2011. Revisión, actualización y análisis de amenazas y riesgos ante desastres en República Dominicana Comisión Nacional de Emergencias. Ed. Comisión de Emergencias. República Dominicana.

FAO, WFP, PLAN Internacional, OXFAM, EU, 2017 Presentación: Incorporación del enfoque de resiliencia de los medios de vida y aseguramiento de una respuesta oportuna a la inseguridad alimentaria y nutricional a través de la aplicación de las capacidades de adaptación, absorción e innovación en la gestión integral del riesgo sequía en la Republica Dominicana.

Gobierno Autónomo Descentralizado de Cochapata, 2015. Actualización del Plan de Desarrollo y Ordenamiento Territorial Para el Buen Vivir 2015-2019. Cochapata (Ecuador).

Oxfam, 2015. Con la seca a cuello. Evaluación del impacto de la sequía en la zona de medios de vida de cultivo del plátano, provincia de Bahoruco y en la zona de medios de vida de cultivo del arroz, provincia de Montecristi, usando la metodología HEA. Dominican Republic.

Payano Almánzar, Reynaldo. 2017. Informe de situación actualizado sobre la sequía en República Dominicana

WFP

2010. P4P Purchase for progress. Rome. (Available at http://documents.wfp.org/stellent/groups/public/documents/communications/wfp225361.pdf?_ga=2.142572402.1330585267.1508969713-2079736800.1501705991)

2011. Methodology to determine the vulnerability index. Presentation of the FORECCSA project. Peru.

2013. Central America Protracted Relief and Recovery Operation (PRRO).

2015a. Policy for building resilience for food security and nutrition (Available at <http://documents.wfp.org/stellent/groups/public/documents/resources/wfp273426.pdf>)

2015b. WFP Gender policy. Rome.

2016a. WFP Strategic Plan 2017-2021 [Available at <http://documents.wfp.org/stellent/groups/public/documents/eb/wfp287126.pdf>]

2016b. Food Assistance for Assets (FFA) for Resilient Communities in Latin America and the Caribbean. Rome. [Available at http://documents.wfp.org/stellent/groups/public/documents/liaison_offices/wfp292602.pdf]

2016c. Modelo de gestión para un banco comunitario. Riohacha (Colombia).

2016d. WFP Strategic Plan 2017-2021 Rome.

2016e. Modelo de gestión para un banco comunitario agrícola - bca sostenible basada en efectivo para generar ingresos en la comunidad y tener disponibilidad y acceso a diversos alimentos, semillas resistentes a las sequías y forrajes para el ganado. Riohacha (Colombia).

2017a. Smart School Meals: Nutrition-Sensitive National Programmes in Latin America and the Caribbean. A Review of 16 Countries. Rome.

2017b. Three-pronged Approach (3PA) to increase livelihood resilience

2017c. Presentation: The Role of Women in the Face of Climate Change and Food Security, FORECCSA project. Quito.

2017d. Buena Práctica: Resiliencia de los medios de vida para la seguridad alimentaria. Quito.

2017e. Fortalecimiento de la Resiliencia de los medios de vida de las Comunidades ante los efectos adversos del cambio climático con énfasis en seguridad alimentaria y consideraciones de género (FORECCSA). Quito.

2017f. Risk profile that exposes the harm to human health by aflatoxin-contaminated maize. Guatemala.

2017g. Estrategia de educación comunitaria, formación de Madres Consejeras y grupos de apoyo para el mejoramiento de la alimentación y cuidado infantil. Guatemala.

Undated. Blue box P4P: Purchase for Progress. Guatemala.

UNDP. 2016. Regional Report on Human Development for Latin America and the Caribbean - Multidimensional Progress: well-being beyond income. New York.

Red Cross Red Crescent Climate Centre 2017. Forecast-based financing [Available at http://www.climatecentre.org/downloads/files/programs/RCCC_FbF%20of%20preparedness%20pager%20V1%20web.pdf].

Torres, Olga. 2013. Determinación, caracterización y evaluación de las aflatoxinas que influyen en el retardo talla de talla para edad de niños en Guatemala. Laboratorio Diagnóstico Molecular. Guatemala.

UNISDR, 2016. Concept Note - First Meeting of Ministers and High-Level Authorities on the Implementation of the Sendai Framework for Disaster Risk Reduction 2015-2030 in the Americas. (Available at <http://eird.org/ransendai-2016/>).

Venton, C. y Majumder, S. 2013. The Economics of Early Response and Resilience: Lessons from Bangladesh. British Ministry for International Development. London (Available at http://r4d.dfid.gov.uk/pdf/outputs/Hum_Response/61114_Bangladesh_Report.pdf).

Annex 1: People Interviewed

Country	Name	Agency	Rol en el proyecto
Colombia	María Consuelo Vergara	FAO	National Coordinator of FAO Projects
	Harry Villarraga,	FAO	Territorial Coordinator FAO La Guajira
	Gabriel Martínez	WFP	Head of Sub Office Riohacha
Ecuador	Carmen Galarza,	WFP	National Programme Officer
	Javier Rojas	WFP	Project Manager FORECCSA
	Alejandra León	WFP	Programme Assistant Communication and Knowledge Management
Guatemala	América Cárcamo	WFP	Project Coordinator OSPR
	Irma Palma	WFP	Programme Policy Officer
	Gustavo García	FAO	Director of resilience projects for livelihoods and adaptation to climate change. FAO Guatemala
	Paul Orozco	FAO	FAO Thematic Coordinator of the Joint Food and Nutrition Security Programme in San Marcos.
Dominican Republic	Joselin Rodriguez	FAO	Project Coordinator for Livelihood Resilience to Drought
	Daniel Valerio	FAO	Project Coordinator for Strengthening the capacities of the Extension System of the Ministry of Agriculture in production adapted to drought
	Carmelo Gallardo	FAO	National Representative
	Pedro Zuccarini	WFP	Risk Management Coordinator
WFP Regional Office and FAO Subregional Office	Jennie Vanharen	WFP	Resilience Programme Officer
	Alessandro Dinucci	WFP	Regional Programme Officer
	Marco Minelli	FAO	Disaster Risk Reduction and Management Expert

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