

PROJECT/PROGRAMME PROPOSAL TO THE ADAPTATION FUND

PART I. PROJECT/PROGRAMME INFORMATION

Project/Programme Category: Regular Project

Country: Nicaragua

Title of Project/Programme: Climate Resilience and Livelihoods in the Nicaraguan Dry Corridor (CRLNDC)

Type of Implementing Entity: Multilateral Implementing Entity

Implementing Entity: Food and Agriculture Organization of the United Nations (FAO)

Executing Entity/ies: Ministry of Environment and Natural Resources (MARENA)

Amount of Financing Requested: 10,000,000 (in U.S Dollars Equivalent)

A. Project / Programme Background and Context

Geography and climate context

1. Nicaragua's surface territory is of 130 373 km² and stretches from the Caribbean Sea in the east to the Pacific Ocean in the west, bordering to the north with Honduras and the south with Costa Rica. The country is divided into 15 provinces and two autonomous regions, which in turn are subdivided into 153 municipalities.
2. The territory consists of three large regions with well-defined features as regards soils, topography and climate. The Pacific region takes up 15% of the land and its soils are very fertile, as they contain recent volcanic ash distributed over extensive plains. The mountainous central region covers 35% of the surface and is hilly, with small valleys resting between the mountains and heights ranging from 400 to 1 500 m.a.s.l. The soils in general are originated from tertiary volcanic rocks and have high productive potential. Finally, the Caribbean region is the largest, and comprises approximately 50% of the country. Its topography is gentle and flat, being made up of acidic soils derived from tertiary volcanic rocks and sediments. Their fertility is low.
3. Due to the trade winds and the landscape's geographic features, rainfall varies widely, ranging from 800 mm to over 5 000 mm. In the Pacific region there are a well-defined rainy season (May to October) and a dry season that extends from November to April. Annual average rainfall ranges between 1 000 mm and 2 000 mm, with a dry spell known as the "canícula" at about the half-point of the rainy season (MARENA, 2018)¹.
4. In the central region the rainy and dry seasons are also well-defined and take place during the same

¹ MARENA (2018). Third National Communication to United Nations Framework Convention on Climate Change

months as on the Pacific side. However, the mountainous relief significantly reduces average yearly rainfall, which may vary from 800 mm in the valleys to 2 500 mm on the eastern slopes of the mountain range (MARENA, 2018)².

5. As a result of its geographic features, Nicaragua's thermal regime also varies. Average annual temperature fluctuates from less than 23°C to over 29°C. Maximum temperatures reach between 30.6°C and 42°C, while the lowest are between 10°C and 18°C (MARENA, 2018)³. In the Pacific region, temperatures sometimes reach above 37°C, but the average temperature is inferior to 35°C. In the central region, the temperatures range from 23°C to 36°C, the mean being 31°C, while on the Caribbean Coast temperatures may reach 34°C, with a mean of 31°C (Rodríguez, J. et. al, 2019)⁴.
6. Nicaragua's geographic position means it receives a large amount of incident solar radiation, with relative humidity oscillating between 60% and 90%. The Pacific region is the driest and hottest, with minimum yearly values between 64% and 70%, while on the Caribbean side the maximum values vary from 80% to 90% (MARENA, 2018)⁵.
7. Nicaragua has the National Human Development Plan 2018-2021 (PNDH), which defines the priorities for the fight against hunger and poverty. The PNDH defines as one of its axes the sustainable management of natural resources and climate change. The country's policy framework has recently been updated, including the Nationally Determined Contribution (NDC), firstly presented in September 2018. In January 2019, Nicaragua presented the Reference Levels of Emissions from Deforestation and Forest Degradation (NREF) for the period 2005-2015⁶ and in February 2019, it approved the National Policy for Mitigation and Adaptation to Climate Change (PNMACC) and Creation of the National System Response to Climate Change (SNRCC).

Socio-economic and environmental context

8. Data from the 2020 Global Report on the Food Crisis indicate that, by October 2020, some 300 000 Nicaraguans (4.6% of the country's total population) suffered from acute food insecurity related to extreme droughts (FSIN and Global Network Against Food Crises, 2020)⁷.
9. The context in 2021 is the result of a double external shock that the country has suffered: the first due to the negative effects of COVID-19, that are reflected in the decline in economic indicators; secondly, the impact of hurricanes ETA and IOTA in November 2020 whose damages add up to a grand total of USD 738.6 million, equivalent to 5.9% of Gross Domestic Product (MHCP 2021)⁸.
10. Around 40% of the Nicaraguan population lives in rural areas and depends on a subsistence economy based on agriculture and animal husbandry.
11. Agriculture is the economic sector making the third-highest contribution to GDP at 8.5% in the third quarter of 2020. Cattle-ranching came in fifth at 5.9% and taken together they represent 14.4% of

² MARENA (2018). Third National Communication to United Nations Framework Convention on Climate Change

³ MARENA (2018). Third National Communication to United Nations Framework Convention on Climate Change

⁴ Rodríguez, J., Thomas, T. S., Cenacchi, N, Rios, A. R. (2019). Climate Change, Agriculture, and Adaptation Options for Nicaragua

⁵ MARENA (2018). Third National Communication to United Nations Framework Convention on Climate Change

⁶ See publication of NREF at the following link: https://redd.unfccc.int/files/nref_nacional_vf_170119.pdf

⁷ FSIN and Global Network Against Food Crises (2020). Global Report on Food Crises 2020

⁸ Ministerio de hacienda y crédito público (MHCP). (2021). Análisis socio-ambiental para la implementación del componente de contingencia para respuesta a emergencias (CERC) / respuesta a los huracanes ETA e IOTA

GDP (Nicaragua Central Bank, 2020)⁹. These data indicate there is a high degree of dependence on the agriculture and livestock sectors as generators of wealth and employment, which means the economy is exposed to the direct impact of climate change.

12. During the period between 2000 and 2015 the country lost 100 815 hectares of forestland each year. The direct causes of deforestation are related to the expansion of the agricultural frontier. It is estimated that approximately 84% of this change in soil use can be attributed to extensive cattle-ranching (MARENA, 2020)¹⁰.

Climate projections

13. The Fifth IPCC Report (2014) notes it is likely that regional rainfall variability related to the *El Niño* phenomenon will increase. Karmalkar *et al.* (2011¹¹), cited by IPCC (2014), project changes in rainfall ranging from between –24% to –48%, accompanied by a rise in temperatures of between +4°C and +5°C for the Central American countries, for a scenario 2 (PRECIS forced with HADCM3). For their part, Campbell *et al.* (2011¹²), using the same scenario and model, project changes in rainfall for Nicaragua at between -25% to -50% and +25% to +50%, with temperatures rising between +3°C and +6°C.
14. In line with the projections made by Campbell *et. al* (2011), a study commissioned by ECLAC the same year pointed out that in a scenario of global emissions inferior to the current tendency and using the HADCM3 model, by the year 2100 (IPCC scenario B2), the average annual temperature in Nicaragua could increase 3.1%. In scenario A2, and at the current level of growth in emissions, the temperature could increase by 4.2%.
15. The expected trajectory as concerns rainfall levels is more uncertain. Under global emissions scenario B2, by the year 2100 rainfall would diminish by 17%, while under scenario A2 the drop may be as high as 35% (ECLAC, 2011)¹³.
16. Figures 1 and 2 show the yearly mean temperature and rainfall, respectively, both in the current countrywide scenario, based on average data for the 1970 – 2000 period (Fick, S. *et al.* 2017)¹⁴.

⁹ Banco Central de Nicaragua (BCN) (2020). Informe Anual

¹⁰ MARENA (2020). Updated Nationally Determined Contribution (Contribucion nacionalmente determinada, actualizacion 2020)

¹¹ Karmalkar, A.V., Bradley, R.S. & Diaz, H.F. Climate change in Central America and Mexico: regional climate model validation and climate change projections. *Clim Dyn* 37, 605 (2011). <https://doi.org/10.1007/s00382-011-1099-9>

¹² Campbell, J. D., Taylor, M. A., Stephenson, T. S., Watson, R. A., Whyte, F. S. (2011). Future climate of the Caribbean from a regional climate model. *Int. J. Climatol.*, 31, 1866—1878, <https://doi.org/10.1002/joc.2200>

¹³ CEPAL (2011). La economía del cambio climático en Centroamérica Reporte técnico 2011

¹⁴ Fick, S.E. and R.J. Hijmans (2017). WorldClim 2: new 1-km spatial resolution climate surfaces for global land areas

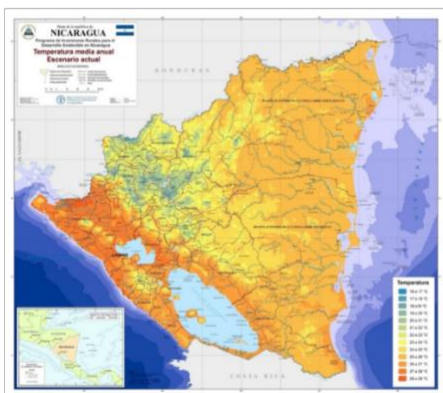


Figure 2. Mean yearly temperature in the current scenario

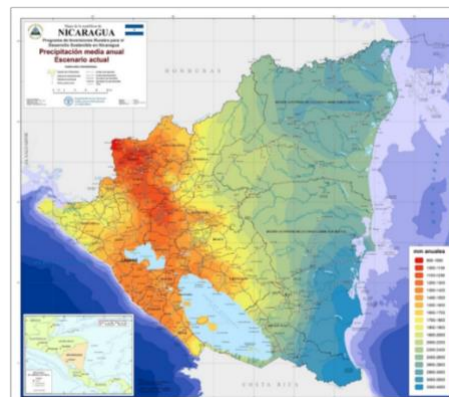


Figure 1. Mean yearly rainfall in the current scenario

17. The regionalized projections¹⁵ for mean air temperature in Nicaragua, made by the Nicaraguan Institute of Territorial Studies (INETER) for scenario RCP4.5 and the 2021 – 2040 period, forecast a mean temperature of between 26°C and 28°C for most of the Caribbean Coast. For the period 2041 – 2060, warming is foreseen throughout the country, with the mean temperature rising from 28°C to 30°C.
18. For scenario RCP8.5 in the 2081–2100 time horizon, warming can be observed everywhere. These changes in mean temperature will lead to higher and more frequent extremes than those observed currently.
19. Figure 3 shows a temperature projection to the year 2040 in a pessimistic scenario, while Figure 4 illustrates a pessimistic rainfall projection for that same year.¹⁶



Figure 3. Temperature forecast for the year 2040, pessimistic scenario

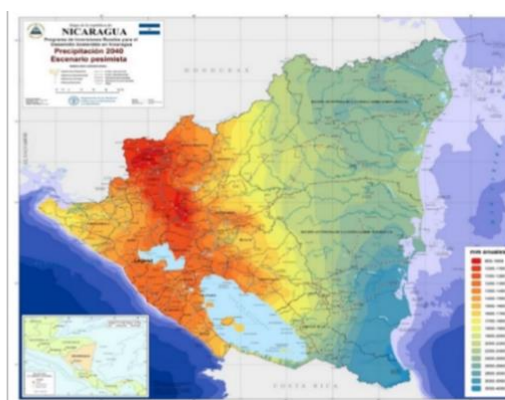


Figure 4. Rainfall forecast for the year 2040, pessimistic scenario

20. The regionalized projections for accumulated rainfall produced by INETER indicate that for scenario RCP4.5 in the period 2021 – 2040 a clear gradient showing less rainfall can be observed, ranging from between 2 500 to 3 000 mm in the South Caribbean Coast Autonomous Region (RACCS) and

¹⁵ Obtained from the regionalization of global GCM or regional RCM models

¹⁶ Downscaled data of three models (CanESM5, MRI-ESM2-0 and CNRM-CM6-1) derived from the coupling of CMIP6 models. The data were calibrated with the WordClim v 2.1 baseline. The scenario used for the year 2040 is the SSP585

increasing as it moves south, where current accumulated rainfall is of 5 000 mm. For the period 2081 – 2100 there is an overall decline in rainfall, above all on the northern seaboard of the North Caribbean Coast Autonomous Region (RACCN).

21. In scenario RCP8.5, the period 2021 – 2040 indicates that there will be substantial changes when compared to scenario RCP4.5, especially as regards the seaboard from the southernmost point of the country almost to Los Patos Lagoon, where rainfall are expected to exceed 5 000 mm, while the RCP4.5 scenario shows that the area with the highest accumulated rainfall practically ends in Bluefields.
22. It is foreseen that, during the period 2018 – 2100, there will be a significant drop of between 1 400 mm and 1 800 mm in accumulated rainfall along the entire Caribbean Coast. The areas with rainfall higher than 5 000 mm will be reduced to the Indio-Maíz Biological Reserve, and a limited area south of Bluefields Bay. These declines in rainfall may exert an important influence on the communities that live on the Caribbean seaboard. The Dry Corridor has an average yearly rainfall of 800 mm, which in some parts can be as low as somewhere between 500 and 600 mm. When there are *El Niño* years, for example, rainfall may drop by 30% to 40%, including long heat waves during which there is almost no rain at all. In such years, the Dry Corridor area can grow by as much as 8 000 km² and affect approximately 60 municipalities (MEFFCA, 2018)¹⁷. Figure 5 reflects the intensity of the dry spell (duration in days) for the entire country.

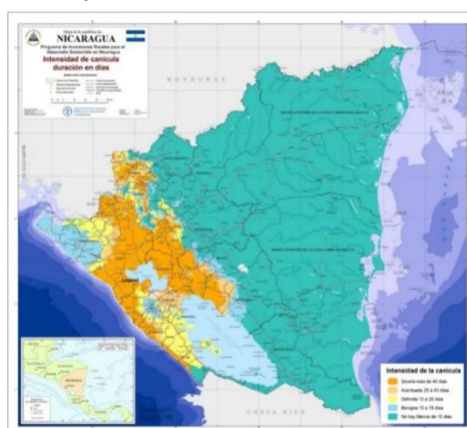


Figure 5. Intensity of the dry spell nationwide (duration in days)

Country vulnerability to climate change

23. Nicaragua is considered the sixth most vulnerable country to climate change in Latin America and the Caribbean and has been classified in the “extreme risk” category (CAF, 2014)¹⁸. The main phenomena that modulate climate variability and extreme events are *El Niño* and *La Niña*, which translate into severe impacts caused by droughts during the former and flooding and landslides when the latter occurs.
24. According to the Third National Communication (MARENA, 2018)¹⁹, the future scenarios shown in the Fifth IPCC Reports, adjusted to the country’s conditions, indicate that of 153 municipalities in the country, 48 are exposed to drought, 33 to flooding and 21 to hurricanes.

¹⁷ Ministerio de economía familiar, comunitaria, cooperativa y asociativa (MEFFCA). (2018). Agricultura Resiliente al Clima en el Corredor Seco de Nicaragua

¹⁸ CAF (2014). Vulnerability Index to climate change in the Latin American and Caribbean Region

¹⁹ MARENA (2018). Third National Communication to United Nations Framework Convention on Climate Change

25. Meteorological events such as hurricanes, floods and droughts have increased in frequency and intensity, due to climate change. It is calculated that in Nicaragua 1.6 million persons are exposed to hurricanes, while severe droughts may affect some 300 000 persons, a number which may grow during *El Niño* years. To the rainfall patterns, events such as floods and mudslides must be added, both of which have a high probability of affecting rural populations. The levels of exposure of rural populations to these phenomena and their limited response capacity mean that Nicaragua is a highly vulnerable country (INETER, 2018)²⁰.

Losses and damages

26. Between 1980 and 2013 a total of forty climate-related events were recorded. Taken together, they caused economic losses in excess of USD 3 265 billion, equivalent to an annual loss of 1.2% of GDP, with over 2.7 million persons affected (CAF, 2014)²¹.

27. Two hurricanes struck Nicaragua in 2020. The first of these was Hurricane Eta, a category 4 storm that hit the North Caribbean Coast Autonomous Region (RACCN) on 3 November. Ten days later, Hurricane Iota, even stronger at category 5, slammed into the same region, affecting more than three million people nationwide. It was estimated that taken together these events caused losses and damages worth over USD 738 million, equivalent to 6.2% of GDP (MARENA, 2020)²². The losses associated with Hurricane Felix in 2007 were calculated at USD 883 million (CEPAL, 2011)²³.

Impacts of climate change on the agriculture sector

28. A study on the vulnerability to climate change and its economic impact on the agricultural sector in Latin America and the Caribbean (Prager *et. al.*, 2020)²⁴, evaluated future climate impacts, using nine general circulation models²⁵ selected for their robust performance in the region. It is foreseen that temperatures will increase by between 1°C and 4°C in the region. In Nicaragua, projected changes in rainfall will vary considerably, depending on the season and part the country. A strong decrease in rainfall is projected for the summer months of June to August, with a less pronounced drop in September to November (see Figure 6).

29. High temperatures early in the rainy season, when farmers sow their seeds for the first agricultural cycle, tend to limit yields, a situation that may worsen as temperatures climb due to climate change. Further, the high temperatures found at less than 300 m.a.s.l. limit the sowing and harvesting of red beans (a staple food in Nicaragua). For its part, maize is notoriously sensitive to heat, and the temperatures in low-lying areas, which are already sufficiently high to cause a drop in yields, will no doubt exacerbate the situation as they continue to rise because of climate change (Rodríguez, J. *et. al.*, 2019)²⁶.

²⁰ Instituto Nicaragüense de Estudios Territoriales (INETER)(2018). Datos Geográficos de Nicaragua. Dirección de Geodesia y Cartografía.

²¹ CAF (2014). Vulnerability Index to climate change in the Latin American and Caribbean Region

²² MARENA (2020). Updated Nationally Determined Contribution

²³ CEPAL (2011). La economía del cambio climático en Centroamérica Reporte técnico 2011.

²⁴ Prager, S., Rios, A.R., Schiek, B., Almeida, J.S., Gonzalez, C.E. (2020). Vulnerability to climate change and economic impacts in the agriculture sector in Latin America and the Caribbean

²⁵ The nine general circulation models are as follows: BCC-CSM1, BNU_ESM, CCCMA_CANESM2, GFLD_ESM2G, INM-CM4, IPSL-CM5A-LR, MI-ROC-MIROC5, MPI-ESM-MR and NCC-NORES1-M.

²⁶ Rodríguez, J., Thomas, T. S., Cenacchi, N, Rios, A. R. (2019). Climate Change, Agriculture, and Adaptation Options for Nicaragua

30. It is projected that during the period from December to February there will be an increase in rainfall in the coastal zones on the Pacific side, in particular in the provinces of Chinandega and León, while decreasing in the interior and southeast of the Caribbean Coast. In the period from March to May, the pattern is inverted, with a drop in rainfall projected along the Pacific Coast and in increase in the interior and southeast of the Caribbean side. It is foreseen that maximum and minimum temperatures will increase between 1° and 3°C throughout the year, with the largest increases being along the coastal areas (Prager *et. al.*, 2020)²⁷.

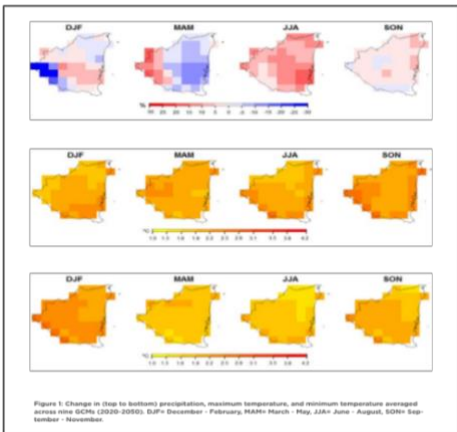
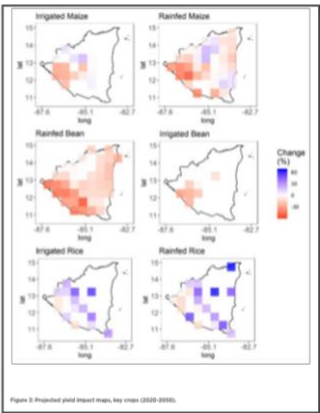
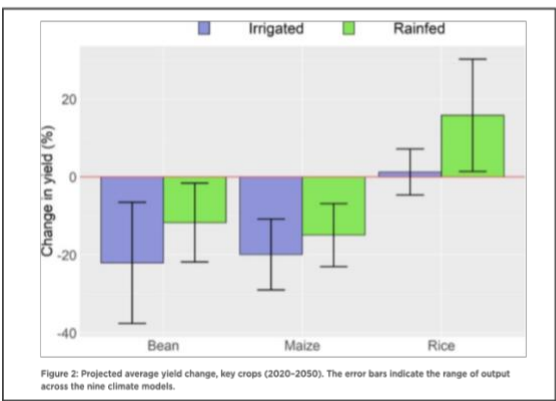


Figure 6. Future Climate Impacts (Prager *et al.*, 2020)

31. Based on the projected changes, forecasts were modelled for maize, rice, red bean and soybean yields, using the Decision Support System for Agrotechnology Transfers (DSSAT v4.5) at a spatial resolution of 0.5 degrees. The parameters for execution of the models for each crop were set by using genetic coefficients of varieties carefully selected by experts for their relevance in the region. The results of crop modelling in Nicaragua shown in Figure 7 suggest it is likely that both the rainfed and irrigated maize and beans systems will see a decline in average yields when compared to scenarios without further climate change (Prager *et. al.*, 2020)²⁸.



²⁷ Prager, S., Rios, A.R., Schiek, B., Almeida, J.S., Gonzalez, C.E. (2020). Vulnerability to climate change and economic impacts in the agriculture sector in Latin America and the Caribbean

²⁸ Prager, S., Rios, A.R., Schiek, B., Almeida, J.S., Gonzalez, C.E. (2020). Vulnerability to climate change and economic impacts in the agriculture sector in Latin America and the Caribbean

Figure 8. Projected average yield change, key crops (2020-2050). The error bars indicate the range of output across the nine climate models

Figure 7. Projected yield impact maps, key crops (2020-2050)

32. The geographic view shown in Figure 8 indicates that the maize and beans systems in the north-western coastal region, specifically in the provinces of Chinandega and León, may find themselves particularly affected, with mean yields falling by 20% or more beneath a baseline without climate change. The higher decrease projected for irrigated as compared to rainfed crop yields is due to the concentration of irrigated agriculture in these vulnerable zones. The rainfed maize and beans systems are found mainly in the interior, where it is considered that the impacts of climate change will be relatively less severe. Meanwhile, the potential yield for rainfed and irrigated rise shows relative resistance everywhere in the country, and it is in fact foreseen there may an increase in yields in several areas, especially in the inland (Prager *et. al.*, 2020)²⁹.
33. Considering there will be a population increase, the demand for water could grow by almost 300% by the year 2050 and 1 600% by 2100, according to a trend scenario with no saving measures and no climate change. However, if there is climate change, the demand for water could increase by 20% more than in this baseline scenario (B2) and 24% more in scenario A2. Total availability of renewable water could diminish by 35% with B2, as compared to current availability, and by 63% with A2 in 2100. In those scenarios, Nicaragua would be one of the most affected in the region. The combination of changes in demand and availability on the one hand and climate change on the other generates a possible intensity in water use by 2100 of 36% for the region in a scenario without climate change, of 140% with B2 and of over 370% with A2 if no adaptation and saving measures are taken (CEPAL, 2011)³⁰.

Capacity to adapt to climate change in the agriculture sector

34. The economic dependency on the agriculture sector is a disadvantage for the country, and several projections indicate that crop yields and their viability will be very much affected by climate change. For this reason, it is important to begin adapting to changing conditions. The sensitivity to variation in patterns of temperature, humidity and rainfall may influence crop components such as soil fertility and its capacity to retain water. Location may also become an issue, if there are changes in the adequacy of certain places for growing particular crops (CAF, 2014)³¹.
35. The country produces a significant percentage of the food consumed by its population (mainly beans, maize, milk, beef and poultry). Around 65% of the food grown depends upon rainfall (rainfed agricultural systems). Maize yields, for instance, are less than 2 t/ha, and many smallholders produce only 1 t/ha. Climate irregularities, such as droughts and floods, can reduce harvests by 50%, possibly leading to nationwide food scarcity (Rodríguez, J. *et. al*, 2019)³².
36. The increase in yields among rainfed crops could have a substantial impact on food security, especially in the cases of smallholder farmers (Rodríguez, J. *et. al*, 2019)³³. The changing conditions

²⁹ Prager, S., Rios, A.R., Schiek, B., Almeida, J.S., Gonzalez, C.E. (2020). Vulnerability to climate change and economic impacts in the agriculture sector in Latin America and the Caribbean

³⁰ CEPAL (2011). La economía del cambio climático en Centroamérica Reporte técnico 2011.

³¹ CAF (2014). Vulnerability Index to climate change in the Latin American and Caribbean Region

³² Rodríguez, J., Thomas, T. S., Cenacchi, N, Rios, A. R. (2019). Climate Change, Agriculture, and Adaptation Options for Nicaragua

³³ Rodríguez, J., Thomas, T.S., Cenacchi, N, Rios, A.R. (2019). Climate Change, Agriculture, and Adaptation Options for Nicaragua

for growing crops could open spaces for the spread of pests and diseases. In this scenario, capacity and agricultural outreach services intended to improve knowledge and skills among local producers, sustainable soil and water management practices, forest conservation and biodiversity are critical to maintaining capacities in the sector.

The Nicaraguan Dry Corridor

37. The Nicaraguan Dry Corridor is part of the Central American Dry Corridor which extends from the Pacific Coast of Guatemala to Costa Rica and the so-called Dry Arch in Panama. The criteria used for its demarcation is based on zones whose dry season is longer than four months (Rojas, O., 2020)³⁴. In Nicaragua, the Dry Corridor comprises 21% of the national territory and most of the country's central region. It comprises 64 municipalities (42% of the 153 nationwide) and 37% of the rural population live in these. Of these, around 60% live in conditions of extreme poverty (MEFFCA, 2018)³⁵. There are some 67 000 farms in the Dry Corridor, of which 46% are smaller than 2 ha and most of these smallholders practice subsistence agriculture.
38. Most of the project's area of intervention corresponds to a livelihood zone based on subsistence farming activities and alternative economies (extraction and sale of firewood, artisanal production of mud derivatives and sale of labor in agribusiness and agricultural companies to complement families' income). It is an area with intensive systems of basic grains (corn, beans and sorghum), vegetables and coffee. Chickens and pigs are also raised, mostly for consumption and, in a lesser degree, to obtain cash. Although the Pan-American Highway crosses the area, the distances from the most isolated areas to the markets are great, which limits the frequency with which farmers can attend them and makes them depend on intermediaries for the sale of their surpluses. The shortage of rainfall and / or the irregular rainfall, together with the limited coverage of irrigation systems, particularly in subsistence farms, limit productivity and reduce the availability of food for family consumption (MFEWS and Acción contra el Hambre, 2010)³⁶.
39. According to SINAPRED and INETER, the 2017-2018 agricultural cycle of the Nicaraguan dry corridor was affected by the deficit of rainfall, triggering impacts on the development of corn, rice, beans and sorghum and the emergence of pests, reporting a lower production during that period. These same institutions report that 300 000 people are exposed to a greater risk of drought in the 22 municipalities of the dry corridor, whose consequences can have a greater impact on these subsistence agricultural activities and on the food security of these people (WFP, 2018)³⁷.
40. The municipalities in the Dry Corridor have highly degraded natural ecosystems, caused mainly by the extraction of fuelwood (used by 75% of households), slash-and-burn agricultural practices or accidental fires, change of land use to carry out agricultural activities that cause degradation and loss of natural plant ecosystems, and climate variations that lead to water scarcity or excessive rainfall. The increase in temperatures and droughts significantly reduce the availability of water resources for agricultural and livestock production, which in turn causes substantial economic losses to production, and to family farming in particular.

³⁴ Rojas, O. (2020). Agricultural extreme drought assessment at global level using the FAO Agricultural Stress Index System (ASIS). Weather Clim. Extreme

³⁵ Ministerio de economía familiar, comunitaria, cooperativa y asociativa (MEFFCA). (2018). Agricultura Resiliente al Clima en el Corredor Seco de Nicaragua

³⁶ MFEWS and Acción contra el Hambre (2010). Perfiles de Medios de Vida en Nicaragua

³⁷ WFP (2018). Evaluación Inicial de Seguridad Alimentaria en Emergencia Nicaragua. Impacto del déficit de lluvias en 22 municipios del Corredor Seco 2018

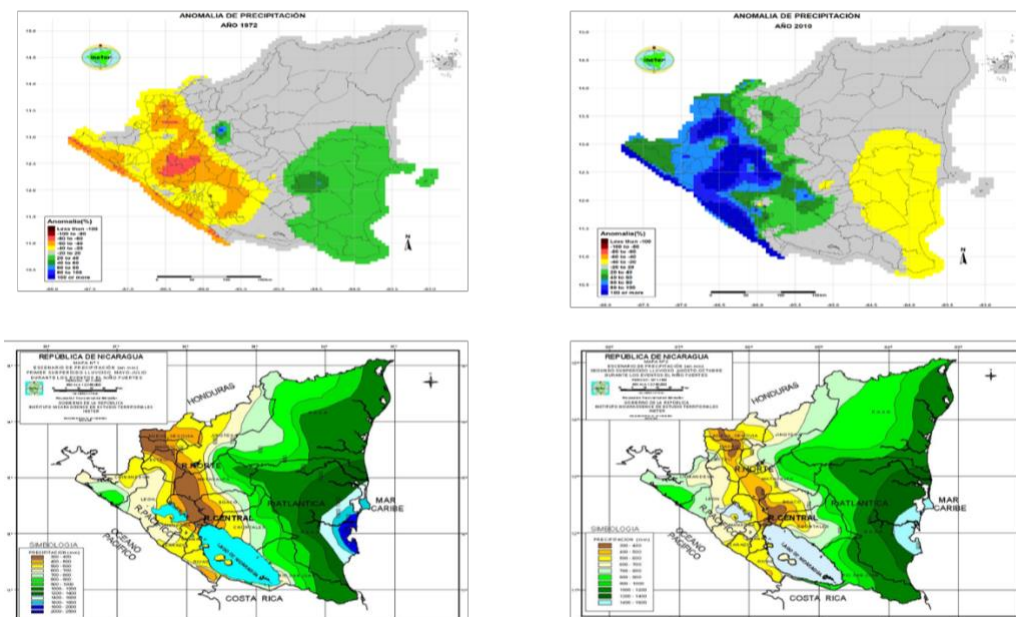


Figure 9. Precipitation anomalies in the Dry Corridor of Nicaragua

41. According to the NDC of Nicaragua, the country still has extensive coverage in natural forests that represent 30% of the total area of the continental surface (3.9 million ha; INETER 2015³⁸), which makes it the fourth country in Central America with the largest forest area. The forests are distributed in 3 main physiographic regions of the country. According to the 2015 land use map, they are found in a higher proportion in the Caribbean Coast region with 88% and 12% in the Pacific and Central - North regions, where the Dry Corridor is located (see Figure 10).
42. The loss of natural forests continues to be a challenge for Nicaragua. The most recent report on land use change at the national level presented by MARENA (2018)³⁹, shows that during the period between 2000 and 2015 the country lost 100 815 ha of primary forest annually. However, the deforestation rate was reduced by 52% with respect to the figure reported between the 1983 - 2000 period (208 303 ha).
43. Nicaragua is part of the Mesoamerican Biological Corridor, where the Pino-Encino forest ecoregion stands out in the North Central Pacific region where the Dry Corridor is located, making it an important transit space for biodiversity in migratory processes and connectivity between patches of forests and degraded landscapes.
44. In the document of the Third National Communication on Climate Change, published in 2018, it is indicated that the measures contemplated to avoid the degradation and loss of forest cover with the ENDE-REDD + National Strategy contribute to adaptation to climate change, because they benefit notably the availability of water in depleted sources, especially in areas with a deficit of rain. It also favours the reduction of risks of erosion and landslides, protecting water sources from sedimentation and the mobility of pollutants, as well as protecting a resource as valuable as fertile soil against erosion. On the other hand, they contribute to the increase in biodiversity that is the source of food for some families with low economic incomes and provide ecosystem services for many people who

³⁸ INETER (2015). Mapa de suelos de la republica de Nicaragua. Managua Nicaragua

³⁹ MARENA (2018). Third National Communication to United Nations Framework Convention on Climate Change

depend economically on the forest resource, such as fibres, firewood, animals for export, etc.

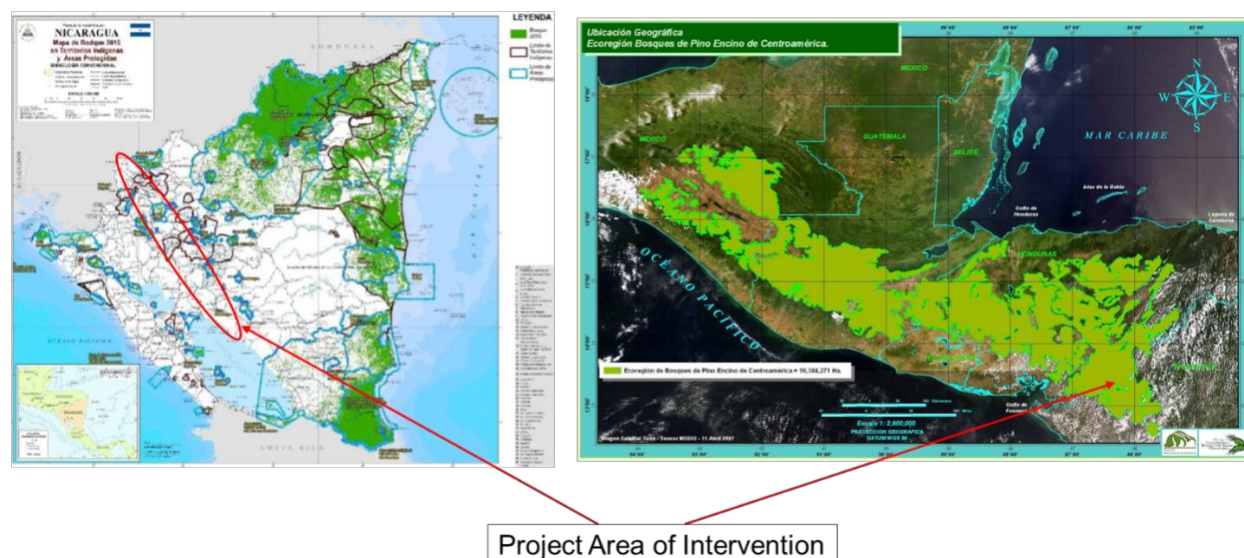


Figure 10. Forest Coverage 2015 and location of the Dry Corridor in the Pino Encino Forest Ecosystem

45. Most farms have access to water by way of wells, rivers and streams, but neither permanently nor in the amounts required, which means it has become an ongoing challenge. Available water is used mainly for human consumption and irrigation. The most grown crops are maize and beans. During the 2018-2019 agricultural cycle, drought affected approximately 53% of these. This was followed by excessive rains that caused 62% of production to be lost.
46. The level of schooling between men and women is similar. Incomplete primary school is the level that prevails in 34% of households, mainly among the older age groups (30 to 45 and 46 to 55 years of age). This lag in education limits the possibilities of accessing better-paying jobs, particularly among the 30-45 age group. Only 9% of households have a member who has finished secondary school, which suggests there is a high percentage of the young population that is currently not studying.
47. Agricultural activities cover 58% of basic household needs, meaning **smallholder farmers** are vulnerable to the effects of climate change on agriculture. Limited access to financial resources, agricultural technologies⁴⁰ and the capacities needed to use these and thus adapt to and overcome the effects of climate change and contribute to ensuring the sustainability of their livelihoods is a growing need for **farmers** living in the Dry Corridor.
48. The Dry Corridor in Nicaragua has been identified as the epicentre of the yearly dry spell (the aforementioned reduction in rainfall during the rainy season) that affects agriculture and cattle-raising in Central America. There is a 25% probability, meaning once every four years, that crop losses due to drought will exceed 20% in agricultural areas (Rojas, O., 2020)⁴¹. The drought in 2001 caused

⁴⁰ The UNFCCC Adaptation Committee notes the lack of adequate access to financial resources, the insufficient legal and regulatory framework, inadequate capacity to prepare projects, barriers related to traditions and habits, and scarce knowledge about climate change and technological solutions as the main obstacles to the development and transfer of technology in Latin America and Caribbean (UNFCCC, 2020).

⁴¹ Rojas, O. (2020). Agricultural extreme drought assessment at global level using the FAO Agricultural Stress Index System (ASIS). Weather Clim. Extrem.

losses estimated at USD 49.1 million (ECLAC, 2011)⁴².

Identification of problems, causes and barriers in the dry corridor of Nicaragua

49. Droughts and extreme rainfall have a negative impact on the rural livelihoods of **smallholder farmers** living in the Dry Corridor. As the magnitude, frequency and impact of meteorological events increase and are aggravated by climate change. Their vulnerability increases due to the overexploitation of soil, water and forest resources, and more and more families have less resilience, understood as the ability to assimilate, recover and adapt, becoming more vulnerable to future climatic events.
50. The diagnostics carried out by the Nicavida project⁴³ in Dry Corridor municipalities point to the following as the main barriers that limit the adaptation of smallholder **farmers** to climate change: droughts that affect agricultural production; scarce access to water for human consumption, irrigation and livestock waterers; limited capacity to implement sustainable land management practices; an increase in soil degradation and erosion due to loss of forest cover and inadequate agricultural production practices; and low levels of agricultural productivity; and levels of schooling and few training opportunities. FAO data (2019) indicate that moderate or severe food insecurity affects 47% of households in the Dry Corridor, a situation it may be assumed has grown worse due to the impact of the COVID-19 pandemic.

Cadena causal de los problemas principales en el Corredor Seco de Nicaragua

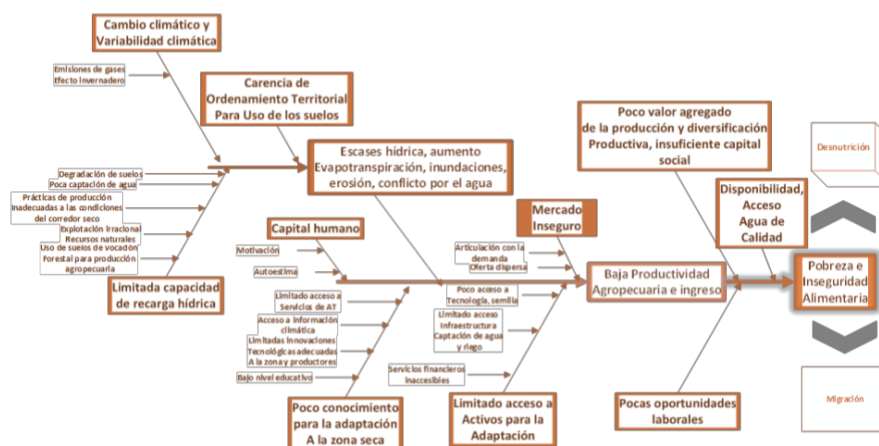


Figure 11. Causal chain of the main problems found in Nicaraguan Dry Corridor

51. The project seeks to address the barriers facing adaptation to climate change in the agricultural sector, specifically from small producers who need to adapt to continue producing corn and beans in 14 municipalities in the Dry Corridor, an area of 12 414 hectares. These municipalities were selected upon having undertaken a first multi-criteria analysis which took into account the variables of soil coverage, poverty, population density, drought and variations in rainfall. Subsequently, those areas were prioritized in which there is a larger presence of small and medium farmers, which are more sensitive to the effects wrought by climate change, due to their limited purchasing power as concerns adaptive technologies. Map 6 shows in detail the 14 municipalities that comprise the project area of intervention.

⁴² CEPAL (2011). La economía del cambio climático en Centroamérica Reporte técnico 2011

⁴³ Government of Nicaragua and IFAD (2016). Proyecto de Desarrollo Sostenible de las Familias Rurales en el Corredor Seco de Nicaragua - NICAVIDA

52. The 14 prioritized municipalities are as follows: Ciudad Darío, Condega, El Jicaral, La Trinidad, Palacagüina, San Isidro, San Juan de Limay, San Lorenzo, Santa Rosa del Peñón, Sébaco, Somoto, Telpaneca, Teustepe and San Francisco Libre. Ten of these municipalities are under serious threat of drought (Somoto, San Lorenzo, Teustepe, El Jicaral, Santa Rosa del Peñón, Telpaneca, San Francisco Libre, Ciudad Darío, San Isidro and Sébaco). The municipality of San Francisco Libre is also at high risk of flooding (MARENA, 2018)⁴⁴.
53. The project intends to focus on facilitating the transfer of adaptation capacities and the development of climate-smart agriculture that contributes to reducing climate vulnerability, while increasing the adaptive capacity of smallholder **farmers** and their agro-ecosystems in 14 municipalities in the Dry Corridor.

Identification and description of the project area of intervention

54. The model for prioritizing areas for project intervention was based on the Multiple Criteria Methodology designed by the Intergovernmental Panel for Climate Change (IPCC). This methodology calls for carrying out an overall review of the situation in any given area of intervention, from an adaptive perspective based on multiple approaches (see Table 1). Processes were established for the quantification and evaluation of the sensitivity of the aforementioned municipalities to the effects of climate change, as well as the identification of places with the highest potential for carrying out actions keyed to increasing the resilience of smallholders living in the project area of influence.
55. According to the methodological design described in the foregoing, multi-criteria models were run in all municipalities located in the Dry Corridor. Using two categories – high (1) and very high (2), the model prioritised 26 municipalities in nine provinces (see Table 2 and Figure 6).

Table 1. Criteria and numerical weighting for multi-criteria analysis

CRITERIA	WEIGHTING
Soil coverage	20%
Poverty	15%
Population density	15%
Drought	20%
Rainfall variation	30%
Total	100%

Table 2. Municipalities prioritized according to multi-criteria analysis

No	Municipalities	Total ha to be covered	Estimated Total Population to 2020 (Inhabitants)	Urban (Inhabitants)	Rural (Inhabitants)
	MADRIZ	1 407.57	79 535	33 224	46 311
1	Palacagüina	348.74	15 389	5 601	9 788
2	Somoto	410.59	39 821	21 021	18 800
3	Telpaneca	648.24	24 325	6 602	17 723
	ESTELÍ	3 690.77	68 679	29 591	39 088
4	Condega	1 093.23	31 086	11 836	19 250

⁴⁴ MARENA (2018). Third National Communication to United Nations Framework Convention on Climate Change

5	La Trinidad	816.01	22 521	12 852	9 669
6	San Juan Limay	1 781.53	15 072	4 903	10 169
	MATAGALPA	2 630.42	110 970	57 790	53 180
7	Ciudad Darío	1 067.10	53 268	22 918	30 350
8	San Isidro	895.71	19 995	9 300	10 695
9	Sébaco	667.61	37 707	25 572	12 135
	LEÓN	1 194.10	22 781	4 948	17 833
10	El Jicaral	762.65	11 833	1 577	10 256
11	Santa Rosa del Peñón	431.45	10 948	3 371	7 577
	BOACO	1 491.47	65 228	15 749	49 479
12	Teustepe	844.43	33 592	6 995	26 597
13	San Lorenzo	647.04	31 636	8 754	22 882
	MANAGUA	2 000.00	11 267	3 451	7 816
14	San Francisco Libre	2 000.00	11 267	3 451	7 816
	TOTAL	12 414.33	358 460	144 753	213 707

Source: MARENA 2021 for surface to prioritize. INIDE 2020 population estimates⁴⁵

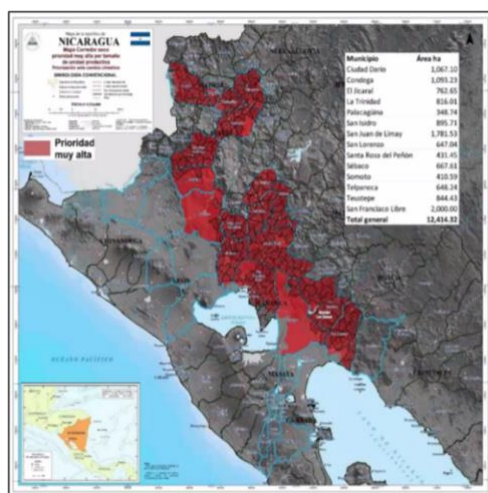


Figure 12. Project Area of Intervention

56. The Project plans to carry out activities in two municipalities with indigenous communities in the North and Central Region of the country: i) in the Chorotega del Norte indigenous people, which includes the municipality of Telpaneca in the department of Madriz and ii) in the Chorotega del Centro Indigenous people in the municipality of Sébaco in the department of Matagalpa. The indigenous town of Li Telpaneca is located in the department of Madriz and its foundation dates from the year 1626, it has an estimated population of 12 000 people, which are distributed in 39 rural communities and five urban areas, agriculture is directed towards the sowing of grains basic: corn, beans, sorghum, musaceae, coffee being grown on a regular scale in mountainous areas such as the El Malacate hills with 1 490 meters high, Santo Domingo with 1 348 and El Picacho with 1 343. The Council of Elders, made up of an elder from each community, is the highest decision-making body and guardian of historical memory. The Board of Directors is the administrative and executive body subject to popular election. The Youth Network, Women's Network, Mediators also operate.
57. Indigenous Community and Communicators. The indigenous town of Sébaco is characterized by

⁴⁵ INIDE (2020). Anuario Estadístico 2019

intense industrial activity, such as the processing of rice and coffee, to which is added an active trade. In addition to the municipal government, there is an indigenous community government, made up of community members through the Indigenous Assembly, the Council of Elders, the Administrative Board of Directors and the Electoral Directory.

B. Project / Programme Objectives

58. The general project objective is to contribute to reducing the climate vulnerability of smallholder farmers and their agro-ecosystems in the Nicaraguan Dry Corridor by increasing their adaptive capacity, rehabilitating their agricultural livelihoods and using ecological transition practices, climate-smart agriculture and restoring the forest landscape.

59. Participatory planning processes and the transfer of capacities will facilitate the implementation of ecosystem-based adaptive measures and actions that improve the water and food security of benefiting farmers, generate ecosystem services at landscape scale and contribute to the ecological transition.

60. To reach the objective described in the foregoing, four outcomes are proposed, as follows:

Outcome 1. Smallholder farmers in 14 municipalities in the Dry Corridor develop capacities for planning and implementing ecosystem-based adaptive measures with the participation and consultation of women and indigenous peoples that contributes to improving their water and food security.

Outcome 2. Forest landscape restoration activities that help to improve the flow of ecosystem services are implemented by smallholder farmers in 14 municipalities in the Dry Corridor.

Outcome 3. Climate-smart agricultural practices, including silvopastoral and agroforestry systems, are adopted by smallholder farmers in 14 municipalities in the Dry Corridor.

Outcome 4. An adaptive administration and knowledge management approach is applied during project implementation.

C. Project / Programme Components and Financing

PROJECT / PROGRAMME COMPONENTS	EXPECTED OUTPUTS	EXPECTED OUTCOMES	AMOUNT (US\$)
1. Transfer of capacities to smallholder farmers in 14 municipalities in the Dry Corridor, leading to implementation of adaptive, ecosystem-based measures and actions.	1.1 Capacity building program for SNPCC Institutions and smallholder farmers, developed and implemented with the participation of women and indigenous peoples.	1. Smallholder farmers in 14 municipalities in the Dry Corridor develop capacities for planning and implementing ecosystem-based adaptive measures with the participation and consultation of women and indigenous peoples that contributes to improving their water and food security.	1 141 600
2. Restoration of forest landscape so it generates ecosystem services.	2.1 Forest landscape is restored and generates ecosystem services.	2. Forest landscape restoration activities that help to improve the flow of ecosystem services critical to water availability during periods of droughts are	4 000 000

PROJECT / PROGRAMME COMPONENTS	EXPECTED OUTPUTS	EXPECTED OUTCOMES	AMOUNT (US\$)
		implemented by smallholder farmers in 14 municipalities in the Dry Corridor.	
3. Rehabilitation of agricultural livelihoods at farm level, using climate-smart agriculture practices.	3.1 Agricultural crops, silvopastoral and agroforestry systems are established and/or improved with the use of selected heat-resistant seeds and the implementation of agroecological practices based on sustainable soil and water management. 3.2 Promotion of resilient livelihoods through diversification and access to markets for at least two crops using sustainable land management practices and with the participation of women and indigenous peoples.	3. Climate-smart agricultural practices, including silvopastoral and agroforestry systems and agroecological practices are adopted by smallholder farmers in 14 municipalities in the Dry Corridor.	2 500 000
4. Capture and dissemination of knowledge and lessons from the project, as well as participatory monitoring and follow-up to the activities implemented.	4.1 A knowledge and communications management strategy, with the participation of women and indigenous peoples, is developed and implemented. 4.2 A project follow-up, monitoring and evaluation system, with the participation of women and indigenous peoples, is developed and implemented.	4. An adaptive administration and knowledge management approach is applied during project implementation.	700 000
6. Project/Programme Execution cost (9.5%)			875 000
7. Cost Total Project/Programme Cost (= Project Components + Execution Cost)			9 216 600
8. Project/Programme Cycle Management Fee charged by the Implementing Entity (if applicable) (8.5%)			783 400
Amount of Financing Requested			10 000 000

D. Projected Calendar

Milestones	Expected Dates
Start of Project/Programme Implementation	January 2022
Mid-term Review (if planned)	June 2024
Project/Programme Closing	December 26
Terminal Evaluation	March 2027

PART II. PROJECT JUSTIFICATION

A. Project components

61. The project has **as** objective to contribute to reducing climate vulnerability among smallholder **farmers** and their agroecosystems in the Dry Corridor by increasing their adaptive capacity, rehabilitating their agricultural livelihoods and using ecological transition practices, climate-smart agriculture and the restoration of forest landscapes.
62. The participatory planning and capacities transfer processes will facilitate the implementation of ecosystem-based adaptive measures and actions that improve the water and food security of benefiting **farmers**, as well as the generation of ecosystem services at landscape scale.
63. This objective is closely related to three Adaptation Fund outcomes, as follows: i) Fund Outcome 3. Strengthened awareness and ownership of adaptation and climate risk reduction processes at local level; ii) Fund Outcome 5. Increased ecosystem resilience in response to climate change and variability-induced stress; iii) Fund outcome 6. Diversified and strengthened livelihoods and sources of income for vulnerable people in targeted areas.
64. The low agricultural production and the losses in corn and bean crops suffered by **farmers** in the dry corridor are directly related to the presence of prolonged droughts and extreme rains as a result of climate change. Additional difficulties include soil degradation; the loss of vegetation cover; limited access to water for human consumption, irrigation and livestock waterers during the dry season; and low levels of schooling and limited training opportunities that reduce these **farmers'** adaptive capacities. To address this situation, the opportunity was perceived to request resources from the Adaptation Fund to be used as a means of improving the adaptive capacity of a targeted number of smallholder **farmers** through adaptation strategies that focus on how to continue producing corn / beans, reducing their vulnerability to climate change by developing capacities by means of which to rehabilitate their agricultural livelihoods, using climate-smart agricultural practices and restoring the forest landscape in a setting marked by a changing climate.
65. The project consists of four interrelated components, as described immediately below:
66. **Component 1.** Transfer of capacities to smallholder **farmers** in 14 municipalities in the Dry Corridor, leading to implementation of adaptive, ecosystem-based measures and actions.
67. It is foreseen that the project will directly benefit at least 5 000 smallholder **farmers of which 1,500 (30%) women** and indirectly another 20,000 persons in 50 communities located in the 14 municipalities. This will translate into greater capacities to confront climate change and improve food security among benefiting **farmers**.
68. The project will place special emphasis on smallholder women. When activities begin, an analysis of gender relations is planned that will ensure that the capacities transfer uses a gender approach and has a strong direct impact on this population group. During the preparation of the Concept Note, an initial gender assessment has been prepared (see Annex 1) based on a study carried out by FAO with 1 206 rural households in the dry corridor (March, 2021), reflecting that 79% of the women consulted said their crops had been affected by climate change, be it due to the effects of drought or excessive rainfall, access to water is a daily challenge, only 35% of the informants said they have water sources in their place of residence and 7% have natural forest. The project aims to expand the economic development of smallholder women by empowering them and strengthening their role in

communal decision-making, in addition to improving capacities among the project's technical team on matters related to gender, ethnic groups and social equity. The use of digital tools will be a key strategy for capacity-development processes that strengthen the resilience of these farmers' livelihoods.

69. **Outcome 1.** Smallholder farmers in 14 municipalities in the Dry Corridor develop capacities for planning and implementing ecosystem-based adaptive measures with the participation of women and indigenous peoples that contributes to improving their water and food security.
70. This outcome is directly related to Outcome 3 of the Fund: "Strengthened awareness and ownership of adaptation and climate risk reduction processes at local level". To achieve this outcome, it is proposed to develop the following outputs and activities:
71. **Output 1.1** Capacity building program for SNPCC Institutions and smallholder farmers, developed and implemented with the participation of women and indigenous peoples.
72. As part of the capacity development component of the AF proposal, this output aims to transfer theoretical and practical knowledge to benefiting farmers, as well as to share the experience with institutions in the Dry Corridor that have links to cooperatives or civil society organisations. These include the National System of Production, Consumption and Commerce (SNPCC); Ministry of Agriculture (MAG); Ministry of Cooperative, Associative Community and Family Economy (MEFCCA); Nicaraguan Institute of Agricultural Technology (INTA); Agricultural Protection and Health Institute (IPSA); National Forestry Institute (INAFOR); and Ministry of Natural Resources (MARENA), who will benefit from a strengthening of their capacities to implement agricultural extension services in the project area.
73. For project design, meetings, workshops and dialogues for 14 municipalities will be held with smallholder farmers, both *mestizo* (non-indigenous) and indigenous, also with key actors who will provide inputs related to existing capacities, indigenous and local farmers' knowledge, and training needs that should be taken care of by this project. The Project will consider that peasant agriculture, especially family farming, have strong roots in the ecosystem and the natural resources associated with it. Consequently, a certain resilience to climate change has developed, through the development and practice of various forms of production, commonly called ancestral practices and which are analogous to agroecological practices, such as, for example, the food systems developed by native people.
74. The participatory analysis resulting from this output and the vulnerability at landscape scale will aim to support components 2 and 3 by further developing the understanding relating to the existing climate risks and livelihoods affected by climate threats. The participatory analysis at local scale allows contextualizing the impacts of climate threats that have been identified determined at broader scales, and how these affect the different types of existing livelihoods in the municipalities.
75. The program will be implemented through the creation of learning sites, directly in the territory. The learning sites promoted by FAO are the Capacity Development Units (UDC) and the Agroecological Promotion Units (UPA) through Field Schools that are developed on farms to be selected in each municipality where there are already experiences of adaptation practices with ancestral, indigenous and / or project knowledge previously developed in the project area. In the learning sites, groups of producers from a community are formed who carry out participatory research to solve productive problems in their crops and the farms where soil and water management practices are already implemented are identified; the protection of forests, wetlands and other sensitive ecosystems and in the case of the cultivation of corn and beans to identify the farms where to validate the implementation

of certified improved seeds and / or seed banks, local strains to improve the productivity of red and black beans and white, crop rotation, vegetation cover (Mulch) and no burning and the "Water Harvest" as a practice of adaptation to climate change. The Field Schools are an experiential and participatory learning methodology, used by FAO since the eighties, and has been adapted to different contexts and needs around the world. The methodological guide called "Field School Guide for Facilitators in the Agricultural Extension Process" will be used, based on non-formal education for adults, where rural **farmers** and teams of facilitators exchange knowledge, based on experience and experimentation through simple and practical methods, using the cultivation and the home as a teaching-learning resource for empowerment and development. **After the project implementation stage, the aim is for the learning sites to continue working as innovation farms incorporated into the national system of farms for innovation, validation and transfer of agricultural technologies through an agreement that will be signed with the Nicaraguan Institute of Agricultural Technology (INTA).**

76. As part of the design of the capacity development program, a study will be carried out to expand the initial gender assessment to allow its mainstreaming throughout the project, in order to support gender equality by aiding men and women in all activities that promote the project, promoting equal opportunities and the generation of affirmative actions aimed especially at heads of household and women who lead agricultural production activities on their farms, in order to contribute to the elimination of obstacles that hinder their development.

77. For the purpose of undertaking the study on gender relations, consultations will take place with actors in the project area of intervention and other key actors, as needed. FAO has carried out similar studies in the Dry Corridor and other parts of the country. The results, as well as the methodological processes developed, are fundamental to the implementation of this output. **Among the local actors with whom it will be coordinated are the 14 Municipalities, the National Technology centers (INATEC) located in Estelí, San Isidro, Matagalpa, Somoto, Boaco, León and Managua and the sub-national headquarters of Universities such as the Universidad Nacional de Nicaragua (UNAN) and Universidad Católica Agropecuaria del Tópico Seco (UCATSE) in Estelí and León.**

78. Component 2: Restoration of forest landscape so it generates ecosystem services.

79. The component incorporates and contributes to the objectives set forth in the National Sustainable Forestry Sector Development Policy, the National Avoided Deforestation Strategy (ENDE-REDD+) and the National Reforestation Crusade, among other political action instruments. Nicaragua has extensive coverage in natural forests that represent 30% of the total area of the continental surface (3.9 million ha; INETER 2015)⁴⁶, however, its highest proportion is found in the Caribbean Coast region with 88% and 12% in the Pacific and Central North regions. Forest restoration in Nicaragua is a priority and there are potential areas in the project area to implement forest cover management and restoration actions. Landscape restoration actions will make it possible to protect, sustainably manage and restore natural or modified ecosystems, through agroforestry, improved farmland management, agricultural diversification, integrated water management and forest management.

80. Outcome 2. Forest landscape restoration activities that help to improve the flow of ecosystem services critical to water availability during periods of droughts are implemented by smallholder **farmers** in 14 municipalities in the Dry Corridor.

81. This outcome is directly related to the Fund's Outcome 5: "Increased ecosystem resilience in response to climate change and variability-induced stress".

⁴⁶ INETER (2015). Mapa de suelos de la republica de Nicaragua. Managua Nicaragua

82. **Output 2.1** Forest landscape is restored and generates ecosystem services.
83. The restoration of the forest landscape will improve the flow of ecosystem services in the municipalities where the project intervenes. This will contribute to improving soil productivity, recovering water resources, restoring forest cover and generating ecosystem services, such as pollination, pest and disease control, all of which will have a positive impact on agriculture, the main livelihood of benefiting **farmers**, as well as their climate resilience.
84. To achieve the proposed result and product, it will be necessary to carry out a participatory planning exercise of actions at the landscape scale to locate the restoration of forests on the banks of rivers and streams for the conservation of water sources and in areas for the creation of biological corridors. between patches of forest, and development of agreements between actors for their implementation. The forest landscape restoration actions will improve the flow of ecosystem services by developing them in the identified areas to protect the aquifer recharge zones in the project area, areas to generate non-timber products for food cooking, natural medicine and to ensure the transit of biodiversity in the migratory processes of wildlife.
85. The forest restoration implemented by the project will contribute to the fulfilment of Nicaragua's goal in the 20x20 Initiative with the objective of restoring nearly 2.8 million hectares and to the NDC's goal in the Forest Management, Land Use and Change of Land Uses. Through the national system of production, consumption and trade, Nicaragua has established productive strategies with a focus on adaptation and mitigation to climate change, promoting best practices for the establishment and management of crops and incorporating low-emission production initiatives that also contribute to the environmental restoration.
86. To put these agreements into practice, detailed investment plans will be carried out to define the protection areas of water recharge zones, areas for the creation of biological corridors between forest patches and areas to generate non-timber products, with a gender and ethnic focus, developed to guide forest landscape restoration actions in each municipality. Local governance systems and arrangements will also be strengthened in the municipalities where the project will work, to anchor the implementation of forest landscape restoration actions to these local governance arrangements.
87. **Component 3:** Rehabilitation of agricultural livelihoods at farm level, using climate-smart agriculture practices.
88. This component pursues the strengthening of adaptive capacities on the part of communities and **farmers**, by adopting climate-smart sustainable agriculture practices. It prioritizes the scaling up of adaptation practices sufficiently tested in Nicaragua and other countries with similar Dry Corridor environments. It will make use of lessons and systematisations developed by the Agriadapta Project, in which 37 climate change adaptation technologies have been identified, among them soil and water conservation works, increases in tree coverage and water harvesting, and the implementation of community initiatives intended to improve the quality of life of women, men and young adults in the *Adapta Jóvenes* Network, as protagonists in ten municipalities in the Dry Corridor.
89. **Outcome 3.** Climate-smart agricultural practices, including silvopastoral and agroforestry systems and agroecological practices are adopted by smallholder **farmers** in 14 municipalities in the Dry Corridor.
90. This outcome is directly related to Outcome 6 of the Adaptation: “Diversified and strengthened livelihoods and sources of income for vulnerable people in targeted areas”. This can be considered the project’s central outcome, which will contribute directly to improving the resilience of benefiting

farmers. Its achievement is closely related to the development of the other outputs and activities mentioned below.

91. **Output 3.1** Agricultural crops, silvopastoral and agroforestry systems are established and/or improved with the use of selected heat-resistant seeds and the implementation of agroecological practices based on sustainable soil and water management.
92. To rehabilitate and enhance livelihoods based on agriculture and animal-raising using climate-smart agricultural practices at farm level, the point of departure will be the use of climate change adaptation technologies in prioritised sectors which were developed as part of the Third National Communication.⁴⁷
93. **Output 3.2** Promotion of resilient livelihoods through diversification and access to markets for at least two crops using sustainable land management practices and with the participation of women and indigenous peoples.
94. This strategy will provide guidelines for the selling of the crops harvested by benefiting smallholder **farmers** at local markets. Developing market access capacities and the sale of agricultural products will be addressed as part of the training to take place at the Field Schools mentioned in component 1. For this development of capacities, it will be coordinated with local actors such as the National Technological Centers (INATEC) located in Estelí, San Isidro, Matagalpa, Somoto, Boaco, León and Managua and the headquarters of Universities such as the Regional Faculty UNAN-Estelí, UNAN León and the Universidad Católica Agropecuaria del Tópico Seco (UCATSE). The proposed project does not include actions for access to credit since its target group are small producers of the family economy; however support will be provided in the form of transfer of inputs and materials in the absence of credit, that are required to implement the practices of adaptation in component 2 and climate smart agriculture in component 3. This support will be addressed through the Ministry of Economy, Family, Cooperative and Associative (MEFCCA) by strengthening the capacity of new or existing producer organizations (cooperatives, associations and / or corporations) and the project will facilitate the access to markets through incentives in form of asset transfers and increased capacity of rural institutions.
95. **Component 4:** Capture and dissemination of knowledge and lessons from the project, as well as participatory monitoring and follow-up to the activities implemented.
96. This component aims at developing knowledge management by systematising the project's experiences from the outset, followed by the dissemination of this information through the youth and community board networks, using digital technology. It also includes follow-up, monitoring and evaluation.
97. **Outcome 4.** An adaptive administration and knowledge management approach is applied during project implementation.
98. This outcome is related directly to Outcome 3 of the Fund: "Strengthened awareness and ownership of adaptation and climate risk reduction processes at local level". It is thought this outcome will provide important guidelines, set forth in the following outputs, while facilitating project development and the achievement of the objectives and outcomes proposed.
99. **Output 4.1.** A knowledge and communications management strategy, with the participation of women

⁴⁷ MARENA (2018). Third National Communication to United Nations Framework Convention on Climate Change

and indigenous peoples, is developed and implemented.

100. The participatory formulation and implementation of a knowledge and communications strategy will allow for systematising and later on disseminating the main project results and lessons learnt. Knowledge management will include organizing workshops for extension technicians and farmers for disseminating climate information and response adaptation measures using locally-relevant delivery mechanisms as virtual platforms, electronic means, telecommunication for radio and TV, visits of the extension workers and use the development of the farms functioning as schools of field and learning centers at the community level and at the municipal level to use the Telecentres in operation by INTA in coordination with the Municipalities for knowledge generation and sharing.
101. In order to formulate this strategy, it will be necessary to hold meetings and workshops with key actors that provide inputs which feed strategy development.
102. **Output 4.2.** A project follow-up, monitoring and evaluation system, with the participation of women and indigenous peoples, is developed and implemented.
103. Having in place a follow-up, monitoring and evaluation system will allow the technical team to take informed decisions, using the lessons-based adaptive management approach and making adjustments to activities still to be undertaken.

B. Economic, social and environmental benefits

104. The objective of the project is to contribute to reducing the climatic vulnerability of peasant farmers and their agro-ecosystems in the Dry Corridor of Nicaragua. It is estimated that the project will directly benefit at least 5 000 smallholder farmers of which 1,500 (30%) women and indirectly around 20,000 people in 50 communities in 14 municipalities of the dry corridor in poverty. The economic benefits will be generated mainly by making the livelihoods of these peasant farmers more resilient to climate change, which will help to minimize the losses associated with prolonged droughts (heatwave), while creating economic opportunities for sale of your products in local markets, through short marketing chains.
105. In social terms, the project will be inclusive and ensure that different types of families and actors can become beneficiaries of the activities to be carried out. The beneficiaries' eligibility criteria (farm size, number of crops, number of animals, level of schooling, etc.) will be defined in the project's early stage. Participating smallholder farmers will benefit from better planning, recovery and forest landscape management. The rehabilitation of their agricultural and animal husbandry livelihoods, including the establishment of new crops with a climate-smart approach to agriculture will improve food security.
106. The capacity transfer process (component 1) will allow farmers to have access to more information that will allow them to increase their resilience, adaptive capacity and at the same time improve decision-making when faced with extreme weather events. The direct beneficiaries of the project, 5 000 smallholders of which 1,500 women (30%), will be trained in agricultural practices for sustainable and climate-resilient land management; forest landscape restoration; local governance and market and marketing issues. To further expand the number of beneficiaries, the capacity and knowledge building materials are designed in a way that provides accessibility and replicability on a large scale (on-farm practices, support for diversification, access to climate hazard monitoring). This will also be added to the number of direct and indirect beneficiaries of Components 2 and 3.
107. The project will generate direct and indirect environmental benefits through component 2,

promoting a favourable local environment for the management and conservation of natural resources at the farm level and in the surrounding landscape. The restoration of the forest landscape in an area of at least 20,000 hectares will allow obtaining benefits that can impact at least 20,000 inhabitants of 50 communities in 14 municipalities of the dry corridor, through the improvement of long-term ecosystem services, among them, improvement the availability of water by protecting the aquifer recharge zones in the project area, greater availability of non-timber products for cooking food, natural medicine and ensuring the transit of biodiversity in the migratory processes of wildlife. Through component 3, the implementation of climate-smart agriculture practices will allow less management of soils and water courses, which will have a positive impact on ensuring food production, especially corn and beans, which contributes to improving the food security of families.

108. The detailed study to be carried out on gender relations will make it possible to quantify the direct benefits to rural women through the activities of all the components of the project. It is estimated that the project can enable the active participation of at least 1,500 women in the project's target area and reach significantly more women beneficiaries through outreach and capacity-building activities. Components 1 and 3, have great potential to increase the benefit to women through the Creative Economy Model, actively and productively involving women and their representation directly in managerial roles and decision making. Also, in component 1 the project will include the promotion and consolidation of a culture of coexistence based on values and non-violence, fostering spaces for dialogue, awareness and training.

Table 3.Expected benefits

Type of benefit	Baseline (conditions)	With project
Economic	<ul style="list-style-type: none"> The prolonged droughts, aggravated by climate change, mean harvests are reduced, which translates into lost income for smallholder farmers. 	<ul style="list-style-type: none"> The rehabilitation of agricultural livelihoods using climate-smart practices will reduce harvest losses and create opportunities to sell family agriculture products in local markets, which translates into better incomes for beneficiary farmers. There is significant potential from the current project to increase women's productivity and income through Component 2 and 3. The project can enable the active participation of at least 30% (1,500) women in the project's target area and reach significantly more women beneficiaries through outreach and capacity-building activities. Landscape restoration will make better forest management possible, including access to fuelwood and economically valuable non-timber products. The prominence of Indigenous Peoples will be increased by promoting the development of their businesses and enterprises, contributing to their food security and the resilience of their livelihoods to face climate change.
Institutional	<ul style="list-style-type: none"> Many institutions at local level are not prepared to take decisions related to 	<ul style="list-style-type: none"> The capacities transfer process will assist local institutions (as well as beneficiary farmers including women, and indigenous people) to be

	climate change and/or actions to increase the resilience of farmers and their livelihoods.	better prepared for comprehensive decision-making when faced with extreme climate events.
Social	<ul style="list-style-type: none"> • Droughts, aggravated by climate change, are causing social problems, mainly because of the limited access to water, both for irrigation and human consumption purposes. • Reduced harvests due to droughts have led to food and nutrition security problems for smallholder farmers. 	<ul style="list-style-type: none"> • Once livelihoods become climate-resilient, food and nutritional security of beneficiary families will improve. • The transfer of capacities to farmers including women, youth and indigenous peoples will give them access to more information, knowledge, and skills on transformative climate actions that they can implement in the economic activities they carry out, which in turn will increase their resilience and capacity to adapt to events of extreme weather conditions. Also the greater knowledge applied will allow them to obtain higher income and improve their food security due to the implementation of resilient production practices and higher productivity. • It is estimated that around 20,000 family members, averaging 5 000 smallholder farmers of which 30% (1,500) will be women, will be the direct beneficiaries of the project components. The expected number of people to be trained is 5,000 smallholder farmers (30% women) in 50 communities located in the 14 municipalities. At least 175 indigenous households in the municipalities of Telpaneca y Sébaco will participate in the project. Components 1 and 3, have great potential to increase the role of women in the Government's Creative Economy Model, actively and productively involving women and their representation directly in managerial roles and decision making. This will contribute to closing gender pay gaps by increasing female farmers' access to resources, training and agricultural services. Also, in component 1 the project will include the promotion and consolidation of a culture of coexistence based on values and non-violence, fostering spaces for dialogue, awareness and training. • In the Chorotega del Norte indigenous people, which includes the municipality of Telpaneca in the department of Madriz and in the indigenous town Chorotega del Centro in the municipality of Sébaco in the department of Matagalpa, benefits will be obtained through the experiences and ancestral knowledge that

		indigenous peoples have and their coexistence with the environment and natural resources that facilitate adaptation based on ecosystems.
Environmental	<ul style="list-style-type: none"> The overexploitation of natural resources, together with climate change, are having negative environmental impacts, especially as regards land / soil degradation and the loss of forests and biodiversity. 	<ul style="list-style-type: none"> It is estimated that 20,000 hectares under component 2 will achieve restoration results of the forest landscape and protected ecosystems (aquifer recharge zones, areas to generate non-timber products for food cooking, natural medicine and areas to ensure the transit of biodiversity in the wildlife migration processes) with the active participation and consultation with indigenous and non-indigenous women and men Women who do not have alternative water supply options are often unpaid and without water for essential needs. The project takes due account of the growing vulnerability of women and integrates an important activity of groundwater recharge and protection of water sources through forest restoration, essential for the health and daily activities of women. Climate-smart agricultural practices in an average of 2 ha per smallholder family (for a total of 10,000 ha) will improve fertility and other soil conditions and associated ecosystem services. The implementation of climate-smart agricultural practices will contribute to reducing GGE.

C. Cost-effectiveness of the proposed project

109. As presented in the section I.A, Nicaragua is especially vulnerable to climate impacts that are already disrupting agricultural production, ecosystem degradation, and causing human health issues. Climate impacts contribute to increased poverty and food insecurity, as well as economic losses at local and national scales across the country. In the last 30 years, Central America lost USD 9,800 due to drought and half this figure was in the agricultural sector.
110. The project aims at contributing to the reduction of the climate vulnerability of smallholder farmers and their agroecosystems in the Nicaraguan Dry Corridor by increasing their adaptive capacity through the rehabilitation of agricultural husbandry livelihoods, using climate-smart farming practices and restoring the forest landscape. To ensure an effective reduction in vulnerability and an increase in the adaptive capacity of smallholder farmers and their agroecosystems, the project will drive the implementation of nature-based solutions (NbS) that help to address the existent challenges.
111. NbS is used as an umbrella concept to cover a range of ecosystem-related approaches including ecosystem-based adaptation, natural climate solutions, and green infrastructure that can be implemented for climate change adaptation and mitigation while also restoring ecosystems, conserving biodiversity, and enabling sustainable livelihoods. Due to their multiple benefits, NbS have the potential to cost-effectively achieve ecological, social, and economic goals. NbS help

communities build resilience in a way that provides “the most benefit for the least cost” compared to grey infrastructure.

112. The project will take advantage of previous and ongoing initiatives in the country by drawing on experiences and lessons learned. This also includes partnering with different government and non-government initiatives (see section II.F) to ensure the project will reduce the need of testing pilot areas and developing new tools, methodologies and approaches that can be costly and timely to adjust into successful models.
113. It is estimated that around 20,000 people, averaging 5,000 smallholder farmers, will be the direct beneficiaries of the project components. The expected number of people to be trained is 5,000 smallholder farmers (1,500 women) in 50 communities located in the 14 municipalities and 175 indigenous farmers in 2 of the municipalities (Telpaneca and Sèbaco). It is estimated that 20,000 hectares under component 2 will achieve restoration results of the forest landscape and protected ecosystems (aquifer recharge zones, areas to generate non-timber products for food cooking, natural medicine and areas to ensure the transit of biodiversity in the wildlife migration processes) with the active participation and consultation with indigenous and non-indigenous women and men. Calculating the average USD 850 investment cost per direct beneficiary of components 1 to 3, the project can be considered cost-effective.
114. Costs per activity will be calculated in the detailed proposal, including the cost by benefiting family, by livelihoods restored and by forestland recovered (measured by area). Losses and damages associated with low productivity or reduced harvest due to extreme climate events will also be calculated, to generate quantitative information on the cost-effectiveness of the actions proposed, as well as to hold a comparison with alternative activities. Among these are possible disbursements by government social assistance programmes in case there are harvest reductions caused by extreme climate events.
115. Altogether, the project will be cost-effective by:
- Avoiding future costs associated with damage and loss due to climate change impacts (especially droughts) and to ensure the interventions are sustainable;
 - Efficient project operations because of ‘in-house’ technical support options and capacity building expertise and because of direct partnering with communities (thereby building their capacity as well as reducing costs);
 - Community involvement with development/construction of concrete interventions and because of community capacity building
 - Selected technical options based on cost-feasibility and resilience/sustainability criteria (assessment to be done during full proposal).

Table 4. Cost-effectiveness perspective

Specific outcomes / outputs expected	Rationale why priority actions have been selected from a cost-effectiveness perspective
Component 1. Transfer of capacities to smallholder farmers in 14 municipalities in the Dry Corridor, leading to the implementation of adaptive, ecosystem-based measures and actions.	This component will ensure community and sub-national authorities’ ownership and maintenance of assets and approaches disseminated by the project, as an important ingredient for sustainability and cost-effective investment. The project will ensure that the activities undertaken respond to needs and demands of communities, by identifying and addressing barriers that prevent people from adopting those practices driven by the project.

Specific outcomes / outputs expected	Rationale why priority actions have been selected from a cost-effectiveness perspective
<p>1.1 Capacity building program for SNPCC Institutions and smallholder farmers, developed and implemented with the participation of women and indigenous peoples.</p>	<p>The participatory planning and implementation of measures allows also for important savings in terms of: i) identifying those practices and tools that are most likely to be adopted in a sustainable way; and ii) the logistical cost of targeting and providing services to participants by partnering with local counterparts such as municipalities, NGO's or cooperatives.</p>
<p>Component 2: Restoration of forest landscape so it generates ecosystem services.</p> <p>2.1 The forest landscape is restored and begins to generate ecosystem services.</p>	<p>Many of the NbS are implemented at a landscape or ecosystem scale. They have critical importance to agriculture, as they can generate important benefits in the production of food and other agricultural products, and the usually include agricultural producers as implementing partners. Even when NbS are being implemented at an individual farm or local project, it is important to plan for landscape scale deployment, both to maximize benefit and to understand impact if actions are scaled up.</p> <p>Examples of landscape-scale NbS are: avoided forest and grassland conversion (with an estimate of 23 Pg CO₂e/yr of climate mitigation on average); natural forest management; or fire risk management.</p> <p>FAO Nicaragua has been working since 2020 in the elaboration of a "Catalogue of measures for adaptation to climate change in the dry corridor (Agriadapta)", which provides costs and methods for the adoption of measures for tree cover increase.</p>
<p>Component 3: Rehabilitation of agricultural livelihoods at farm level, using climate-smart agriculture practices.</p> <p>3.1 Crop, silvopastoral and agroforestry systems are established and/or improved by using selected seeds and practicing sustainable soil and water management practices.</p> <p>3.2 Promotion of resilient livelihoods through diversification and access to markets for at least two crops using sustainable land management practices and with the participation of women and indigenous peoples.</p>	<p>NbS may occur also directly in the realm of agricultural production and grazing management and are implemented primarily by farmers or producers. These activities may create direct economic benefit to the producer, in terms of increased yields or reduced costs, in addition to broader societal benefit. If the benefits to the landowner are sufficient, technical assistance and transition funding may be sufficient to achieve lasting changes. Many of these practices align with an emerging field of practice called 'regenerative agriculture'.</p> <p>The catalogue Agriadapta (mentioned above) provides costs and methods for the adoption of measures for the sustainable management of soil, water and the agricultural production as a whole.</p>
<p>Component 4: Capture and dissemination of knowledge and lessons from the project, as well as participatory monitoring and follow-up to the activities implemented.</p> <p>4.1. A knowledge and communications management strategy, with the participation of women and indigenous peoples, is developed and implemented.</p>	<p>This component capitalises on previous and ongoing initiatives by drawing on their experiences and lessons learned. This, together with partnering with different government and non-government actors, will allow the project to reduce the need of testing pilot areas and developing new tools, methodologies and approaches, with the associated saving in costs and time that is usually needed to adjust successful models.</p>

Specific outcomes / outputs expected	Rationale why priority actions have been selected from a cost-effectiveness perspective
4.2. A project follow-up, monitoring and evaluation system, with the participation of women and indigenous peoples, is developed and implemented.	

D. Consistency with national or sub-national sustainable Development Strategies (Project alignment with government priorities)

116. The project is aligned with the National Human Development Plan 2018-2021 (Government of Nicaragua, 2017)⁴⁸. Also, the project is aligned with the Plan to Fight Poverty 2022-2026⁴⁹ and with the creation of the National Climate Change Management System and establishment of the principles and guidelines of the National Climate Change Policy through Presidential Decree 15-2021⁵⁰. Article 5 in this Presidential Decree refers to functions of the national system of climate change management and includes the validation and submission for presidential approval of the National Plan of mitigation and the National Plan of adaptation. Article 10 refers to the principles of the National Policy of climate change and adaptation measures are explicitly mentioned. Also, the project is aligned with the updated Nationally Determined Contributions (NDC)⁵¹ and with the Third National Communication (MARENA, 2018)⁵².

117. The project is aligned with national family agriculture promotion strategy for food and nutritional security (2019–2021) (MEFCCA, 2019)⁵³ and the National Plan for Production, Consumption and Trade 2021/2022 that are being implemented by the National Production, Consumption and Commerce System (SNPCC)⁵⁴.

118. This project is to contribute with the National Strategy for the Reduction of Emissions due to Deforestation and Forest Degradation (ENDE - REDD+ 2008 – 2040-MARENA, 2018)⁵⁵. It also aims to contribute to the enforcement of the country's Forestry Law, the National Forestry Policy and the National Forestry Programme.

Table 5. Project alignment with government priorities

Government priorities	Project contribution
National Human Development Plan 2018-2021	It contributes with actions related to the prioritises the conservation and recovery of soils, water and forests; the promotion of the modernisation and transformation of the agriculture and animal husbandry sectors in a setting marked by climate change; the improvement of education, awareness-raising and human and institutional capacities as concerns climate change mitigation, the reduction of its effects and early warnings; and the coordination of participatory environmental management with smallholder farmers, communities and local governments in

⁴⁸Government of Nicaragua (2017). Ejes del programa nacional de desarrollo humano 2018-2021

⁴⁹ <http://www.pndh.gob.ni/descargas.aspx>

⁵⁰ Decreto Presidencial (2021)

<http://legislacion.asamblea.gob.ni/Indice.nsf/9499521c0ebc358b06256ff80049dd33/d85a8e19533693df0625703500527004?OpenDocument&ExpandSection=-1>. This Presidential Decree repeals Presidential Decree 7-2019,

⁵¹MARENA (2020). Updated Nationally Determined Contribution

⁵² MARENA (2018). Third National Communication to United Nations Framework Convention on Climate Change

⁵³MEFCCA (2019). Estrategia nacional de promoción de la agricultura familiar para la seguridad alimentaria y nutricional (2019 - 2021)

⁵⁴ MEFCCA. Estrategias Nacionales. [Online] [Documentos \(economiafamiliar.gob.ni\)](http://documentos(economiafamiliar.gob.ni))

⁵⁵ MARENA (2018). Third National Communication to United Nations Framework Convention on Climate Change

Government priorities	Project contribution
	attendance, focusing on adaptation and mitigation
Plan to Fight Poverty 2022-2026	It contributes with actions related to facing the impacts of climate variability and climate change through sustainably managing forests, fighting desertification, halting and reversing land degradation, and halting the loss of biodiversity. Likewise, reinforcing the design and implementation of environmental policies, programs and projects for the protection of natural resources.
Creation of the National Climate Change Management System and establishment of the principles and guidelines of the National Climate Change Policy through Presidential Decree 15-2021	The policy contains a number of guidelines for adaptation to climate change, some of which are aligned to the proposal set forth in the Concept Note: i) agricultural and animal husbandry development that is resilient to the impacts of current and future climate variability, with low carbon emissions; ii) the use and conservation of ecosystem services to achieve low-emissions economic development adapted to climate change; and iii) conservation, restoration and rational forest use, as well as the promotion of forest plantations in areas with forestation potential.
Nationally Determined Contributions (NDC)	The project is aligned with the updated Nationally Determined Contributions (NDC) through the promotion of land management and reforestation; improved capacity development towards the development of a climate-resilient agricultural sector; and the protection of forest ecosystem services provided by forests for the most vulnerable native communities and small forestry producers.
National Family Agriculture Promotion Strategy for food and nutritional security (2019 – 2021)	This project contributes to proposes to strengthen family agriculture by diversifying food production, promoting the use of technologies as appropriate in each geographic area, promoting crop processing and conservation, the consumption of healthy and nutritious foods, and income generation based on the sale of surplus production
The National Plan for Production, Consumption and Trade 2021/2022	<p>This project contributes to the National Plan for Production, Consumption and Trade 2021/2022, to promote the commercialization of agricultural products in the national and international market, as well as the Productivity Policy that aims to improve the productivity and yields of the main items of socioeconomic dynamization; and guarantee a nutritious and healthy diet in conditions of equity, with social and environmental responsibility.</p> <p>The research and productive innovation policy that is oriented to continue generating agricultural biotechnologies and agricultural practices that increase productive yields, making them available to small and medium producers, in such a way that they can transcend towards sustainable and resilient productive systems to Climate Change. The policy of Conservation and Protection of Mother Earth, which prioritizes the strengthening of the country's resilience and adaptive capacity, as well as the transition to an economy based on nature and low in carbon emissions</p>
ENDE - REDD+ 2008 – 2040	This project contributes to strategy has as objectives i) to reduce GGE caused by deforestation and forest degradation; ii) to conserve and improve forest carbon reserves; iii) and to contribute to the protection of Mother Earth vis-à-vis climate change. The strategy was designed in a participatory manner and is nationwide in scope. Also ENDE-REDD+ is based on the promotion of sustainable forestry production, food security, the resilience of vulnerable areas, the protection of water recharge zones and the development of a financing mechanism. In addition, as an implementing platform, it takes into account the strengthening of strategic alliances, interinstitutional coordination and forest governance (MARENA, 2018).
Forestry Law, the National Forestry Policy and the National Forestry Programme.	This project contributes to the National Reforestation Crusade, the National Plan for the Prevention and Control of Forest and Agricultural Fires and the Community Forestry Strategy.
Law to Promote Agroecological or Organic	This project contributes to promoting the development of agroecological or organic production systems through productive uses and practices aimed at reversing land

Government priorities	Project contribution
Production (2011)	and vegetation degradation, soil erosion, loss of the topsoil and fertile lands in arid, semi-arid and dry sub-humid areas, caused mainly by inappropriate human activities and by climate variations, according to the capacities and vocations of ecosystems and agro-ecosystems.
Equal Rights and Opportunities Law No. 648 – 2008	This project contributes to promoting gender equality established by this national law, supporting actions that facilitate the closing of gender gaps and promoting the empowerment of rural women through technical and technological assistance and comprehensive training opportunities without any type of discrimination. Also supporting the promotion of environmental management financing, in projects for the protection, conservation and national use of natural resources that alleviate the workload of women and the poverty of families.

E. Compliance with relevant national technical standards (project alignment with legislative base)

119. The project is aligned with national laws and regulations, as detailed in the table below. It is also in keeping with the Environmental and Social Policy (ESP) of the Adaptation Fund, the FAO Gender Policy and its Social and Environmental Safeguards Policy.
120. The extensive proposal will analyse in detail how the activities proposed line up with the regulation covering its sphere of action, describing how it complies with the pertinent environmental regulation, including issues such as land tenancy /use, and associated resources. It will also detail how the project intends to approach the principles set forth in the Adaptation Fund's ESP. Further, an Environmental and Social Management Plan will be drawn up. Controls will be implemented to ensure that the project does not deepen inequalities or have a negative impact on marginalized populations and the environment.

Table 6. Regulations, standards and relevant procedures

Specific outcomes / outputs expected	Regulations, standards and procedures relevant to compliance with FA principle 1	Compliance, procedures, authorized offices
<p>Component 1. Transfer of capacities to smallholder farmers in 14 municipalities in the Dry Corridor, leading to the implementation of adaptive, ecosystem-based measures and actions.</p> <p>1.1 Capacity building program for SNPCC Institutions and smallholder farmers, developed and implemented with the participation of women and indigenous peoples.</p>	Equal Rights and Opportunities Law No. 648 – 2008	Nicaraguan Women's Institute
<p>Component 2: Restoration of forest landscape so it generates ecosystem services.</p> <p>2.1 The forest landscape is restored and begins to generate ecosystem services.</p>	<p>Law 462 (2003) Nicaragua Forestry Law and its enabling regulations</p> <p>Emissions Reduction Strategy due to Deforestation and Forest Degradation</p>	Ministry of the Environment and Natural Resources (MARENA)

	(ENDE - REDD+ 2008 – 2040)	
<p>Component 3: Rehabilitation of agricultural livelihoods at farm level, using climate-smart agriculture practices.</p> <p>3.1 Crop, silvopastoral and agroforestry systems are established and/or improved by using selected seeds and practicing sustainable soil and water management practices.</p> <p>3.2 Promotion of resilient livelihoods through diversification and access to markets for at least two crops using sustainable land management practices and with the participation of women and indigenous peoples.</p>	<p>Presidential Decree: Soil Protection and Erosion Control Law (1983)</p> <p>National General Water Law (Ley 620, 2008) and its enabling regulations</p> <p>National Bovine Cattle Development Strategy</p> <p>National Strategy to Increase Bean Productivity 2019 – 2023</p> <p>National Strategy to Promote Family Agriculture for Food and Nutritional Security 2019 – 2021</p>	<p>Ministry of Family, Community, Cooperative and Associative Economy (MEFCCA)</p> <p>Ministry of Agriculture and Livestock</p> <p>Nicaraguan Institute of Agricultural Technology (INTA)</p>
	<p>Law to Promote Agroecological or Organic Production (2011)</p> <p>National Strategy to Promote the Marketing of Agricultural and Livestock Products in National and International Markets 2020 - 2023</p>	<p>Ministry of Agriculture and Livestock</p> <p>Nicaraguan Institute of Agricultural Technology (INTA)</p>
<p>Component 4: Capture and dissemination of knowledge and lessons from the project, as well as participatory monitoring and follow-up to the activities implemented.</p> <p>4.1. A knowledge and communications management strategy, with the participation of women and indigenous peoples, is developed and implemented.</p> <p>4.2. A project follow-up, monitoring and evaluation system, with the participation of women and indigenous peoples, is developed and implemented.</p>	<p>Equal Rights and Opportunities Law No. 648 – 2008</p>	<p>Nicaraguan Women's Institute</p>

F. Describe if there is duplication of project / programme with other funding sources, if any.

Table 7. Complementarity and synergy with related projects

Programmes and Projects	Outcome/goal pertinent to the project area	Complementarity and synergies
Sustainable Development of Rural Families Living in the Nicaraguan Dry Corridor (NICAVIDA) 2017-23 IFAD/CABEI	<p>Contribute to achieving the national objectives of improving living conditions of rural families and indigenous peoples in the Dry Corridor.</p> <p>The component 1 transferring capacities to improve rural livelihoods. The smallholder farmers and their organizations are trained in income-generating activities, soil and water management, as well as strategies and practices that improve their diet.</p> <p>The components 2 and 3 investing in the diversification of sources of income that also favor environmental protection and adaptation to climate change.</p>	<p>No duplication of the project has been identified as the project NICAVIDA has mainly focused in activities related to rainwater harvesting and rural road improvement. The proposed project will take advantage of this installed infrastructure and will also take into account the lessons learned by Nicavida in five of the prioritized municipalities (San Juan de Limay, San Isidro, Teustepe, San Lorenzo and Santa Rosa del Peñón) to inform the implementation of components 1 and 3.</p>
Resilient landscapes management 2020-25 GEF/FAO	<p>Strengthen the National Protected Areas System and support sustainable land use and the restoration of selected areas in the Dry Corridor and the North Caribbean Coast, with the aim of promoting the conservation of biodiversity, resilient landscapes and local livelihoods.</p> <p>Component 1 and 2 through a pay-for-results pilot project (ENDE-REDD+ and Sustainable Land Management (SLM) in the Pine Corridor.</p>	<p>No duplication of the project has been identified as this GEF project works mainly in protected areas which are not part of the AF proposal.</p> <p>However, the proposed project will be able to take into account the lessons learned related at the component 2 in two of the municipalities prioritized: Somoto and La Trinidad.</p> <p>When designing the complete proposal, the best practices, outputs and lessons learned will be carefully examined in the environmental restoration systems, to take them into account in the design of component 2.</p>
Strengthen resilience in protected areas. 2020-2025 GEF/FAO	<p>Multiple global environmental benefits generated through the Sustainable Forest Management and Sustainable Land Management outside the protected areas (PA).</p> <p>Component 1 and 2 by means of consolidated biological corridors to improve connectivity between existing protected areas and tropical forest habitats under threat in productive landscapes.</p>	<p>No duplication of the project has been identified as geographically there is a very limited overlapping in a biological corridor that goes through two of the 14 municipalities prioritized, Teustepe and San Lorenzo.</p> <p>When designing the complete proposal, the best practices, outputs and lessons learned will be carefully examined in the environmental restoration systems, to take them into account in the design of component 2.</p>
Adaptation of Agriculture to Climate Change by Harvesting Water in Nicaragua.	<p>The project promotes the construction of reservoirs to store water from rainfall runoff as a means of transforming agriculture and livestock production systems.</p>	<p>No duplication of the project has been identified has the SDC/CATIE project basically works in mid-scale water harvesting infrastructure. The proposed project will be able to take into account that infrastructure and the lessons learned related to the component 3</p>

2019-22 SDC/ CATIE		<p>in four of the municipalities prioritized: Somoto, Telpaneca, Palacagüina, and Condega.</p> <p>During the full proposal process a dialogue channel through consultation can be established with the steering committee of the SDC/CATIE project to find ways of collaboration.</p>
Innovation and Dissemination of Agricultural Adaptation to Climate Change Technologies (AGRIADAPTA) 2016-22 SDC/FAO	Selected communities in the micro-basins improve the resilience of their livelihoods and the sustainable management of forests, water and soil by implementing technological innovations and promoting productive activities that are compatible with the sustainable use of natural resources.	<p>No duplication of the project has been identified as the AGRIADAPTA project has mainly worked in the systematization and field-testing of technological innovations in land and water management.</p> <p>The proposed project will be able to take into account the lessons learned related at the component 3 in four of the municipalities prioritized: El Jicaral, Santa Rosa del Peñón, Teustepe and San Francisco Libre.</p> <p>During the process of designing the complete project proposal, work sessions will be coordinated with the technical team of the Agriadapta project coordinated by FAO and SDC in order to know in detail the lessons learned and recommendations.</p>
Environmental risk management program for disasters and climate change (PAGRICC) 2010-2016 IADB, FND and SDC	The project supported the adoption of environmental restoration systems. It financed activities to contribute to the conservation of natural resources in the farms of 4 600 protagonists, of which 3 600 producers with IDB resources and, in 2014, it was expanded with 1 000 additional producers financed by SDC, covering the costs of goods and services that form part of 7 technological packages called Environmental Restoration Systems (SRA) in the upper parts of the Río Viejo and Lake Apanás sub-basins	<p>No duplication of the project has been identified. The PAGRICC project area of intervention only covered part of 3 municipalities (San Francisco Libre, Sébaco and El Jicaral) out of the 14 where the FA will work.</p> <p>The proposed project will be able to take into account institutional structure and the lessons learned related to reversing the negative effects of droughts by adopting environmental restoration systems when adopting the seven SRAs promoted by the PAGRICC.</p> <p>During the full proposal process a dialogue channel through consultation can be established with the Inter-American Development Bank (IADB) to draw lessons learned.</p>
Nicaragua's Dry Corridor Nutrition Sensitive Agriculture Project (World Bank - FUNICA) 2021-2023 World Bank / FUNICA	<p>The project will (i) strengthen agricultural productivity, climate resilience, and nutritional security of 1 590 value-added farmers and small agri-food businesses, and (ii) support the organization of newly created local small businesses to provide extension services to farmers in six municipalities of the Dry Corridor</p> <p>Components 1 and 3 supporting the generation of lessons learned in the adoption</p>	<p>No duplication of the project has been identified as geographically there is a very limited overlapping in only two municipalities, Condega and San Juan de Limay.</p> <p>During the full proposal process a dialogue channel and consultation will be established with the implementation team of the FUNICA project to draw lessons learned which might we applied to component 3 of the present</p>

	of climate-smart productivity-enhancing technologies, with accompanying water technologies as a package through demand-driven subprojects and agribusiness technical services.	proposal.
“Strengthening Institutional and Technical Capacities in the Agricultural and Forestry Sectors in Nicaragua in Response to Requirements of the Enhanced Transparency Framework under the Paris Agreement”. 2020-2022 GEF/FAO	<p>This project consists of three (3) components, all of which are intended to tackle these gaps in capacity.</p> <p>Component 1. Outcome 1) Strengthening institutional capacities (INTA, INAFOR, MARENA, INETER, MEFCCA) as regards requirements for modalities, procedures and guidelines (MPGs) in the agricultural and forestry sectors. This will be done by strengthening interinstitutional coordination mechanisms regarding the Enhanced Transparency Framework (ETF) in the framework of the SNRCC; training on ETF contents as concerns adaptation; NDC and technology transfer received and required in accordance with the MPGs.</p> <p>Component 3. Outcome 3) Education, awareness-raising and strengthening of human and institutional capacities in improved and prioritized sectors will bolster the dissemination of good climate change adaptation and dissemination practices, strengthen the SINIA platform and support environmental education activities.</p>	<p>No duplication of the project has been identified as the GEF-7 project seeks to meet the enhanced transparency framework (ETF) requirements under the Paris Agreement and does not consider field activities, only at the central level and in terms of, mainly, planning and articulation among different actors and stakeholders.</p> <p>The proposed project will be able to take into account the lessons learned related to training on ETF contents as concerns adaptation and the dissemination of good practices of climate change adaptation, strengthen the SINIA platform and support environmental education activities.</p> <p>During the full proposal process a dialogue channel through consultation can be established with the of the Secretary of the Presidency of Climate Change to draw lessons</p>
Bio-CLIMA: Integrated climate action to reduce deforestation and strengthen resilience in BOSAWÁS and Rio San Juan Biospheres 2021-2027 GCF / BCIE	<p>Objective: Introduce integrated climate action to reduce deforestation and strengthen resilience in BOSAWAS and Rio San Juan Biospheres</p> <p>Activities: Restore degraded land through silvopasture and agroforestry Conserve, manage and restore natural forestland Enhance access to high-value markets of farmer cooperatives and community enterprises Strengthen institutional capacities of environmental authorities and indigenous territories governments Strengthen local capacities and stakeholder engagement</p>	<p>No duplication of the project has been identified as the Bio-CLIMA project will be implemented in the Caribbean coast of Nicaragua which is not part of the Dry Corridor.</p> <p>The proposed project will be able to take into account the lessons learned by the Bio-CLIMA project once it starts, related to the conservation, management and restoration of natural forests and improve access to high value markets for farmer cooperatives and community businesses on the Coast Caribbean.</p>

G. If applicable, describe the learning and knowledge management component to capture and disseminate lessons learnt

121. The project will develop a knowledge and communications strategy (output 4.1) in support of compliance with the outcomes as planned by component, with the following objectives:

- ✓ Capturing and sharing the knowledge generated based on the rehabilitation of agricultural /

animal breeding livelihoods and their impact on the restoration of the ecosystem and its functions.

- ✓ Empowering actors in the application of ecosystem-based adaptive measures and actions, as well as climate-smart agriculture, based on solid, agreed-upon and shared knowledge.
- ✓ Visibilising knowledge on skills and changes achieved by attending the Capacity Development Units through Field Schools (ECA) and other learning processes with a **gender and indigenous focus**.
- ✓ Systematising and sharing information, experiences and lessons for purposes of internal and external learning (to be done periodically).

122. Beforehand, and given that knowledge-capture activities and the empowerment of actors will be in the hands of the technical team and that specific types of knowledge and skills are needed, the strategy will include an analysis of the knowledge gaps that must be closed. To that end, it will design a capacity building plan for team members on issues such as knowledge management, the gender approach, social equity, communications and the involvement of actors. **Knowledge management will include organizing workshops for extension technicians and farmers for disseminating climate information and response adaptation measures using locally-relevant delivery mechanisms as virtual platforms, electronic means, telecommunication with radio or TV, visits of the extension workers and use the development of the farms functioning as schools of field and learning centers at the community level and at the municipal level to use the Telecentres in operation by INTA in coordination with the Municipalities for knowledge generation and sharing.**

123. Likewise, working jointly with the team, platforms required to manage the knowledge captured will be identified: an internal storage space, access to the information (documents, reference information, photographs, digitised materials) and collaborative work, as well as one or more dissemination channels, such as creating a web site and social network, for the purpose of sharing and disseminating the knowledge output and the information generated (publications, news, computer graphics, blogs).

124. Internally, the project should document the experiences and select the relevant learning sites where to demonstrate the application of measures to adapt to climate change, forest landscape restoration and climate-smart agriculture practices in the dry corridor, which can be valuable for the Adaptation Fund, for the country and for other projects.

125. To that end, systematization workshops will take place, for two purposes: a) capture information and analyse experiences for the purpose of detecting which changes have taken place, who the actors involved have been, what strategies were implemented and what results were obtained; and b) know the lessons generated, success factors and practical recommendations by which to replicate or scale up the experience.

126. The project will draw up forms for the purposes of gathering information, new knowledge and lessons learnt that must be used by the team in order to ensure the proper systematization of experiences and impact awareness by gender and ethnic group.

127. At external level, and in addition to the results of the study on gender relations, it will be necessary to define what knowledge, attitudes and practices (KAP) need to be modified in order to meet the project's objectives. The KAP analysis will also establish the strategies to be applied for each public objective (awareness-raising, persuasion, sensitization, motivation), in order to facilitate the participation and empowerment regarding adaptive actions, the capacities development project, the ECAs, incentives, adaptive technologies, the strengthening of a sales strategy, access to markets and affirmative action to promote gender equality.

128. The project will work with another group of key actors on governance agreements and investment plans leading to forest landscape restoration in municipalities with smallholder populations. Here the strategy will include activities around access to relevant information and the generation of new knowledge on the positive impact of ecosystems, the well-being of persons, the improvement of soil productivity, the regeneration and restoration of forest cover and sustainable production, as a means of motivating involvement, participation and informed decision-making.
129. The strategy will determine the knowledge and communications outputs that are to be generated in order to gather the existing knowledge on adaptation measures and the bridging of gaps found in the information. These outputs, to be gathered on different forms, must be generated in accordance with the communications guidelines to be established.
130. In the case of the capacity development program and the ECAs (component 1), it will be taken advantage of the development of learning sites on farms to be selected in each municipality where there are already experiences of adaptation practices with ancestral, indigenous and / or knowledge. or from projects previously developed in the project area and the workshops and program design meetings to gather information on the type of knowledge material that needs to be produced for on-farm learning (guides, manuals, videos, games) and the channels through which knowledge will be reinforced (brochures, radio spots, peripherals, material for local events). As concerns forest restoration actions and climate-smart agriculture, in addition to the training materials aimed at the target populations, the strategy must identify which knowledge outputs (publications, maps, reports, infographics) and which actions (lobbying, media dissemination, public debates) will be necessary for purposes of exerting public influence on mayor's offices and the national government.
131. An important activity by which to generate and share knowledge will be the forging of alliances with external actors in order to expand the reach of the adaptation and resilience measures being proposed. One example of this will be actions that can be planned upon analysing the synergies with two MEFFCA-led projects that are being implemented in the zone in order to ensure food security. It will be necessary to investigate whether on the matter of marketing other types of alliances are needed with private companies.
132. Regarding knowledge transfer and exchange, in addition to the communication channels and spaces defined by the strategy, the project must take advantage of those pertaining to FAO, MARENA and the Adaptation Fund, as these can help extend the scope of dissemination and open opportunities for exchanges at national and international scales. The Adaptation Fund's website, for instance, contains a section on knowledge and learning that promotes knowledge outputs, events and even scholarships that could serve to increase the impact of the activities.
133. The project must set up a dynamic monitoring and follow-up system (output 4.2), with a gender and **indigenous focus**, that facilitates the evaluation, adaptive management, understanding of the impact and dissemination of results.
134. The follow-up, monitoring and evaluation system must contain:
- ✓ The indicators proposed and the percentage of annual compliance, in accordance with the APO;
 - ✓ The means of verification (quantitative and qualitative evidence) that evidence the monitoring of each indicator;
 - ✓ Warnings regarding progress or delays on the path to meeting outcomes;
 - ✓ Compliance with project milestones;
 - ✓ The lessons learnt and associated adaptive management measures.

135. The creation of a Follow-up Committee with FAO and MARENA staff, as well as other key partners and actors will be important in terms of taking pertinent adaptive management actions in an effective and timely manner.
136. The system will require the use of software (which may be free access), to be fed periodically and that will provide the information needed to prepare the reports requested by the Adaptation Fund:
- ✓ Annual Project Performance Report (PPR);
 - ✓ Final Evaluation (FE);
 - ✓ Knowledge outputs for the FE – studies, analyses and reports on lessons learnt; articles, videos and stories for publication on the website.
137. For purposes of accountability and positioning, the follow-up system will favour transparency and knowledge / information transfer. This is to take place through the Milestones Dissemination Plan and the annual publication and public presentation of outcomes at national or international events.

Table 8. Expected outcomes and outputs regarding knowledge management

Expected outcomes	Stakeholders and learning objectives	Knowledge product
4.1 Knowledge and communications management strategy in support of compliance with the planned outcomes for each component.	<p>The project team</p> <ul style="list-style-type: none"> • Strengthens capacities on strategic project issues. <p>The project team and decision-makers:</p> <ul style="list-style-type: none"> • Capture and share the knowledge generated from the rehabilitation of agricultural livelihoods and their impact on the restoration of the ecosystem and its functions, valid for decision-making purposes. <p>Beneficiary smallholder farmers:</p> <ul style="list-style-type: none"> • Enhance capacities and empower these actors to apply adaptive ecosystem-based measures and actions, climate-smart agriculture, based on solid, agreed-upon and shared knowledge. <p>Decision-makers, beneficiary smallholder farmers, donors:</p> <ul style="list-style-type: none"> • Visibilise knowledge on skills acquired and changes achieved through the ECA and other learning processes with a gender and indigenous focus. 	<ul style="list-style-type: none"> • Training materials • KAP analysis • Policy brief with evidence of the impact caused by ecosystem-based adaptation measures and public policy recommendations. • Publication on ecosystem-based adaptation measures in the Dry Corridor and its impact on the ecosystem and livelihoods. • Guide to good ecosystem-based adaptation practices. • Educational material in support of training project. • Community radio campaign on ecosystem-based adaptation and good practices. • Audio-visual series on restoration. • Network of women resilient to climate change • Documentary series on traditional knowledge useful to adaptation to climate change. • Policy brief to reduce development opportunity gaps

<p>4.2 A dynamic monitoring and follow-up system with the participation of women and indigenous peoples that facilitates evaluation, adaptive management, understanding of the impact and dissemination of outcomes.</p>	<p>Project team:</p> <ul style="list-style-type: none"> Facilitates decision-making on adaptive management. Periodically systematises and share knowledge, experiences and lessons learnt, for purposes of internal and external knowledge acquisition. Visibilises the impact reached in the development of women's and ethnic groups. <p>Donors:</p> <ul style="list-style-type: none"> Informed on impact reached and outcomes met 	<p>by gender and ethnic group.</p> <ul style="list-style-type: none"> Document on lessons learnt during project implementation. Webinar series Case study on the implementation of successful ecosystem-based adaptation. Document on lessons learnt regarding climate-smart agriculture. Case study of a successful marketing alliance achieved by a women's group or ethnic association. PPR reports Annual publication on milestones reached Final Evaluation
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H. Describe the consultative process, including the list of stakeholders consulted, undertaken during project preparation, with particular reference to vulnerable groups, including gender considerations, in compliance with the Environmental and Social Policy and Gender Policy of the Adaptation Fund.


138. During the months of December 2020 to July 2021, as part of the process of formulating the concept note, nine participatory meetings and three local consultation workshops were held, one in Estelí on May 19, a second in **Managua on May 21 and a third in Estelí on July 7, 2021** aimed at the two municipalities with the presence of the Chorotega Indigenous People, under the leadership of MARENA and technical support from FAO, with the participation of officials from the following organizations: MAG, MEFFCA, INTA, INAFOR and IPSA. **The process addressed gender equity and included indigenous people as a high priority; The Board of Directors of the two indigenous peoples identified in the project area, i) in the Chorotega del Norte Indigenous people, which includes the Telpaneca municipality in the Madriz department and ii) in the Chorotega del Centro Indigenous people in the Sébaco municipality in the department of Matagalpa, participated in the consultation. Women represented at least a 50% of attendants in the three meetings. Given the length limit, the concept note only summarizes the main conclusions of the workshops of consultation.**

139. The consultation also included representatives of the communities; technicians from the 14 municipalities; and staff from the pertinent ministries, in order to ensure alignment with national priorities and strategies. The knowledge acquired in the consultation workshops directly from the women residing in the project area allowed the development of an early dialogue that validates and complements the conclusions obtained from an FAO 2021. This study analysed the roles of rural women in the socio-productive context of the Dry Corridor in Nicaragua, and, among other conclusions, affirmed that eliminating inequalities in access to goods and services is essential to decisively improve the socio-economic conditions of women in rural areas. Project will contribute to close the gender gap related to equitable access to socio economic benefits and other services. This will be a topic to be developed in the complete project proposal, consulting with women different options of methodologies, technologies and practices that can offer valuable options to alleviate the workload of women, according to the local context and the specific agri-food value chain. In the case of indigenous peoples, the consultations with the participation and consultation with the two Boards of Directors of the indigenous communities will facilitate and frame the execution of Free, Prior and

Informed Consent process during the complete preparation of the project.

Table 9. Results of local consultation workshops

Workshops	Problems identified at the consultation workshops	Identification of adaptive measures
Consultation team: Miguel Davila Rugama (MARENA), Edwin Lira (Territorial Delegate MARENA Estelí), Pedro Vasquez (Territorial Delegate Madriz), Victor Martinez (Territorial Delegate MARENA-Matagalpa), Norman Gutierrez (Territorial Delegate MARENA-Managua), Yanire Alvarez (Territorial Delegate León) and Denis Fuentes (FAO-Nicaragua)		
Workshop: Estelí - 19 de mayo de 2021 Institutions belonging to the Production, Consumption and Trade System (SPCC) / local actors in the municipalities of Ciudad Darío, Condega, La Trinidad, Palacagüina, San Isidro, San Juan de Limay, Sébaco, Somoto and Telpaneca.	<ul style="list-style-type: none"> • Lack of water • Deforestation • Lack of soil and water conservation works. • Climate variability index in low crop yield. • Lack of use of grain seeds adapted to the area. • High consumption of firewood for the use of the kitchens. 	<ul style="list-style-type: none"> • Harvesting water. • Irrigation systems. • Forest management and natural regeneration. • Soil and water conservation works. • Use of seeds adapted for the area. • Construction of improved kitchens. • Protection of water sources. • Agroforestry and silvopastoral systems.
 Representatives of the Somoto and Telpaneca communities	 Representatives of the San Juan de Limay, Condega, El Jicaral, Teustepe and San Francisco Libre	
Workshop: Managua - 21 May 2021 Institutions belonging to the Production, Consumption and Commerce System (SPCC) / local actors in the municipalities of El Jicaral, San Lorenzo, Santa Rosa del Peñón, Teustepe and San Francisco Libre.	<ul style="list-style-type: none"> • Lack of water. • Deforestation. • Bad agricultural practices: burning and dependence on agrochemicals. • Inappropriate use of the soil. • Lack of market for production. • Pests affect crops • Low availability of pastures for livestock feeding. 	<ul style="list-style-type: none"> • Forest management. • Construction of soil and water conservation works. • Watershed management and water harvesting. • Construction of improved kitchens • Improvement of pastures with pasture seeds suitable for the area. • Agroforestry and silvopastoral systems.
Workshop in Estelí- July 7, 2021 In 2 municipalities with indigenous communities in the North and Central Region of the country: i) in the Chorotega del Norte Indigenous people, which includes the Telpaneca municipality in the Madriz department and ii) in the	<ul style="list-style-type: none"> • Water demands of indigenous communities. • Low financial capacity of the main families in indigenous communities. 	<ul style="list-style-type: none"> • Construction of soil and water conservation works. • Activities to improve the value addition of agricultural products by taking advantage of opportunities for high-value agriculture.

Workshops	Problems identified at the consultation workshops	Identification of adaptive measures
Chorotega del Centro Indigenous people in the Sèbaco municipality in the department of Matagalpa		
<p>Carlos Navarrete, José Zavala, Miriam Perez, Chorotegas del Norte - Telpaneca;</p> <p>Alberto Salgado, Silvia Rayo, Angelica Armas / Chorotegas del Centro-Sébaco.</p>	 <p>Picture 1) Representatives of the Chorotegas del Centro – Sebaco; Picture 2) Representatives of the Chorotegas del Norte - Telpaneca</p>	

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

140. The project is fully aligned with the outcomes framework of the Adaptation Fund, the needs of the country and the principles and guidelines set forth for the National System of Climate Change as established in the Presidential Decree 15-2021.. Further, the project is aligned with the needs of smallholder farmers, its main target group, as it contributes directly to reducing their climate vulnerability and that of the agroecosystems they live in, while developing capacities for adaptation to climate change.
141. Project outcomes will generate a robust intervention framework made up of social, environmental and economic elements that can be implemented in other parts of the country. Likewise, because it is a project designed with a comprehensive approach. It requires no additional financing to achieve the expected impact.
142. The economic contraction suffered by Nicaragua over the past three years and the crisis caused by the COVID-19 pandemic have reduced the government's capacity to work on climate-related issues and increased its dependency on external financial support. Water scarcity and associated harvest losses during the dry spell, and the challenges these represent for smallholder farmers living in the Dry Corridor are a government priority, but its human and financial resources to deal with the problem are limited.
143. The transformational aspect of this project comes from its integrated approach, where strategies proposed at landscape and farm level are complementary. The project addresses specific needs of most vulnerable farmers using the combination of traditional and innovative climate resilient techniques for agricultural production. Farm management contributes to the ecological and hydrological functioning of the watershed as a whole. This represents an innovative model for climate-resilient rural development in Nicaragua that combines integrated climate-smart solutions focused on livelihoods and agroecosystem-based adaptation.

Table 10. Cost of adaptation reasoning

Project outcomes / outputs	Baseline scenario (without AF project)	Additionality (with AF project)
<p>Component 1. Transfer of capacities to smallholder farmers in 14 municipalities in the Dry Corridor, leading to the implementation of adaptive, ecosystem-based measures and actions</p> <p>1.1 Capacity building program for SNPCC Institutions and smallholder farmers, developed and implemented with the participation of women and indigenous peoples.</p>	<p>Water scarcity and associated harvest losses during the dry spell, and the challenges these represent for smallholder farmers living in the Dry Corridor are a government priority, but its human and financial resources to deal with the problem are limited.</p> <p>In a no-project scenario, smallholder farmers have only very limited, not to say non-existent possibilities (difficulties concerning capacities, knowledge, skills, technical and financial resources) to adapt to climate change-related water scarcity and the challenges these imply in relation to agricultural production and the sustainable management of forest landscapes.</p>	<p>The project will address the need to build the capacity of national, sub-national and local institutions, as well as family farms and vulnerable groups (women and indigenous people) on climate change adaptation. The project will tackle: i) the institutional gaps identified in providers of extension services (mainly government institutions with coverage in the areas of intervention); and ii) the transfer of knowledge and the support to the adoption by family farms of a package of nature-based solutions that will increase resilience in the Dry Corridor</p>
<p>Component 2: Restoration of forest landscape so it generates ecosystem services.</p> <p>2.1 The forest landscape is restored and begins to generate ecosystem services.</p>	<p>The municipalities in the Dry Corridor have highly degraded natural ecosystems, caused mainly by the extraction of fuelwood (used by 75% of households), slash-and-burn agricultural practices or accidental fires, and climate variations that lead to water scarcity or excessive rainfall. The increase in temperatures and droughts significantly reduce the availability of water resources for agricultural and livestock production, which in turn causes substantial economic losses to production, and to family farming in particular</p> <p>Ecosystem degradation continues due to unsustainable productive management, exposing local livelihoods to recurrent and exponential climate impacts.</p> <p>Traditional livelihoods remain insufficient to make up for economic losses due to climate impact and ecosystem degradation.</p>	<p>The restoration of the forest landscape will improve the flow of ecosystem services that sustain the agricultural systems in the municipalities where the project intervenes. This will contribute to improving soil productivity, recovering water resources, restoring forest cover and generating ecosystem services, such as pollination, pest and disease control, all of which will have a positive impact on agriculture, the main livelihood of benefiting farmers, as well as their climate resilience</p> <p>protection of EBA services valuable to livelihoods</p> <p>The activities under this output will focus on watershed restoration as an adaptation strategy to increase forest cover, improve the hydrological cycle and increase the amount of available water. This is critical for agricultural production and underpins food security.</p>
<p>Component 3: Rehabilitation of agricultural livelihoods at</p>	<p>Agricultural activities cover 58% of basic household needs, meaning families are</p>	<p>The project will promote a package of nature-based</p>

<p>farm level, using climate-smart agriculture practices.</p> <p>3.1 Crop, silvopastoral and agroforestry systems are established and/or improved by using selected seeds and practicing sustainable soil and water management practices.</p> <p>3.2 Promotion of resilient livelihoods through diversification and access to markets for at least two crops using sustainable land management practices and with the participation of women and indigenous peoples.</p>	<p>vulnerable to the effects of climate change on agriculture.</p> <p>In a no-project scenario smallholder farmers living in the Dry Corridor would continue to have limited access to climate-smart technologies and techniques for agriculture, meaning they would continue to lose their harvests due to a reduction in the availability of water or, to the contrary, floods and mudslides</p> <p>The diagnostics carried out by the Nicavida project in Dry Corridor municipalities point to the following as the main barriers that limit the adaptation of smallholder farmers to climate change: droughts that affect agricultural production; scarce access to water for human consumption, irrigation and livestock waterers; limited capacity to implement sustainable land management practices; an increase in soil degradation and erosion; and low levels of agricultural productivity; and levels of schooling and few training opportunities.</p> <p>FAO data (2019) indicate that moderate or severe food insecurity affects 47% of households in the Dry Corridor, a situation it may be assumed has grown worse due to the impact of the COVID-19 pandemic.</p>	<p>solutions that will address problems associated with droughts in the Dry Corridor municipalities in a comprehensive manner, providing smallholder farmers with greater capacities to confront climate change and leading so to a sustained improvement in food security and quality of life.</p> <p>Diversification provides an opportunity for spreading the climate risk across different activities, therefore minimizing overall impacts and providing a safety net in the case of extreme drought. With more diverse production and activities, smallholder farmers will be given more options for coping strategies during prolonged droughts, thus increasing their resilience</p> <p>The project will strengthen community-based organisations, such as cooperatives, micro-enterprises, and farmers associations to help linking small-scale rural entrepreneurs with private-sector players along the value chains in the long run.</p>
<p>Component 4: Capture and dissemination of knowledge and lessons from the project, as well as participatory monitoring and follow-up to the activities implemented.</p> <p>4.1. A knowledge and communications management strategy, with the participation of women and indigenous peoples, is developed and implemented.</p> <p>4.2. A project follow-up, monitoring and evaluation system, with the participation of women and indigenous peoples, is developed and implemented.</p>	<p>Best practices developed by communities and other development initiatives in the country remain not capitalized and not disseminated to inform other local actors facing similar challenges.</p>	<p>The project will address the need to build the capacity of national, sub-national, local institutions and vulnerable groups (particularly women and indigenous people) on climate change adaptation.</p> <p>The project will enhance knowledge sharing and capacity at multiple levels on climate resilient strategies for agriculture by establishing information channels to enhance the effective flow of information, between institutions at regional and local levels and farmers.</p> <p>Relevant efforts to disseminate</p>

		information about how to address climate change at local and institutional level will be made in Output 4.1. Targeted audience at local level will consider, at least, local decision makers, local farmers, women, and indigenous people..
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J. Describe how the sustainability of the project/programme outcomes has been taken into account when designing the project / programme.

144. The project addresses the sustainability of its outcomes from three perspectives: environmental, social and economic.

145. Environmental sustainability will be reflected in the lasting impact of landscape restoration activities that will contribute to the generation of ecosystem services translated into an improvement in hydrological flows, soil fertility and in the production of goods such as fruits, wood and firewood. Restoring agricultural livelihoods using climate-smart agriculture and soil and water management practices will contribute to improving environmental quality at the farm and plot level and reducing GHG emissions. The project will work to ensure that the current practices that drive the degradation of the ecosystem do not continue by: i) raising awareness through consultations with all stakeholders, and the process of capacity building pursued by the project as well as public awareness raising campaigns; and ii) demonstrating the benefits of sustainable environmental management and how this can provide sustainable livelihoods and reduce vulnerability to climate change. The project seeks to overcome barriers that impede higher degrees of adoption and are usually linked to lack of assets, skills and information.

146. Social sustainability will be reflected in the social benefits and in terms of governance that the implementation of the project will bring to the participating farmers and actors. The active participation of smallholder farmers comprising inter alia women, young people and other vulnerable groups in the project activities will contribute to concretizing actions such as reducing disagreements and conflicts around the use of common resources and improving livelihoods and social security, food security, with a positive social impact. Smallholder farmers and other participating actors will be trained to build and maintain the proposed interventions themselves and improve their livelihoods in a sustainable and resilient way.

147. In order to maintain the results of the project in the social sphere, it is ensured by involving the relevant actors from the beginning of its planning and throughout its implementation. These actors include government institutions involved in the project, in particular MARENA, MAG, MEFCCA, INTA, IPSA and INAFOR that are part of the National System of Production, Consumption and Commerce (SNPCC) and the 14 Mayors to be involved. This will guarantee the commitment of the Government of Nicaragua to continue working on adaptation to climate change beyond the life of the project and will contribute to the development of the National Plan for Adaptation to Climate Change with emphasis on issues related to the agricultural sector. The lessons and approaches implemented can be shared and implemented in other regions of the country. The benefits / institutional advances will be sustainable over time thanks to the policy, governmental and institutional support provided by the National Climate Change Management System, its articulation with the Production, Consumption and Trade System, and the different institutions that integrate both systems, such as MAG, MEFCCA, MARENA, INTA, IPSA, INAFOR and the municipalities.

148. Economic sustainability the investment made to increase the resilience of peasant farmers in the dry corridor and their agroecosystems will avoid (totally or partially) future costs related to climate change and its impacts, in addition to improving the livelihoods of participating farmers and the provision of ecosystem goods and services. The generation of income from the improvement of agricultural livelihoods and access to markets will translate into better quality for participating farmers. As they are nature-based solutions, which do not require expensive and sophisticated technologies, the cost of these activities is relatively low when compared to the benefits generated, generating a positive cost / benefit ratio and, therefore, more capable of make such investments in the future. After the end of the project the learning sites will continue working as innovation farms incorporated into the national system of farms for innovation, validation and transfer of agricultural technologies through an agreement that will be signed with the Nicaraguan Institute of Agricultural Technology (INTA).

149. To maintain the project's economic results, the project in its detailed design stage will identify the mechanisms to facilitate the effective and sustained participation of private sector actors (that is, the beneficiary farmers of component 3 and the actors of the private sector in the agricultural value chain, such as fertilizer and seed suppliers, wholesalers who buy their products from farmers) and public sector actors involved in the climate change agenda and in the implementation of the SNPCC's productive strategies. In addition, creating links with the private sector will open market niches to ensure the purchase of farmers' production and access to national and local markets will increase farmers' income, thus ensuring the continued implementation of resilient practices and allow demonstrate that the benefits of adopting climate-resilient agriculture and resilient landscape management practices can stimulate economic activity in rural areas of Nicaragua's Dry Corridor even under conditions of climate change. All these actions represent a win-win for the beneficiary smallholder farmers, which contributes to ensuring the sustainability of the proposed results in the medium and long term.

K. Provide an overview of the environmental and social impacts and risks identified as being relevant to the project / programme

150. The Project proposed herein is entirely aligned with the Adaptation Fund's Environmental and Social Policy (ESP). It has been designed to generate positive economic, social and environmental outcomes. To achieve these, it will use contributions made available by local and national authorities and participating institutions. Further, the project intends to incorporate best practices from other projects, while simultaneously prioritising contributions made by women and marginalized, vulnerable groups that are included among the target population. The proposed adaptation and actions will be selected together with beneficiary farmers and participating institutions, thus ensuring they are culturally and locally appropriate.

151. The entire project at concept note level was assessed for environmental and social risks under the 15 principles set out in the AF ESP. During project full formulation stage, project will develop an specific instrument to assess risks and management measures following the social and environmental standards of the Adaptation fund and its 15 principles, and based on extensive FAO's experience assessing environmental and social standards in projects under its management. The potential risks were preliminary identified together with the needs for further assessment as presented in Table 11. An initial pre-assessment at concept note stage has classified the project in Category B (project with minimal risks), however this remains to be further clarified during the full ESA at the stage of full proposal development.

Table 11. Environmental and social checklist

Checklist of environmental and social principles	No further assessment required for compliance	Potential impacts and risks – further assessment and management required for compliance
<i>Compliance with the Law</i>	<p>Risk levels determined with preliminary assessments.</p> <p>A more thorough ESP risk assessment will be conducted in the full proposal</p>	As detailed in section II.E the project will be in compliance with relevant Laws, Decrees and Acts. The processes of compliance will be further detailed in the full proposal.
<i>Access and Equity</i>		The project will not reduce or prevent communities in the targeted areas from accessing basic services. The project will take a number of transparent steps that will help ensure that the benefits of the project are being distributed fairly with no discrimination nor favouritism. Gender, age and indigenous quotas will be considered when selecting the participating farmers. Baseline information, trained staff and working with stakeholders will be key aspects for ensure equal access to project's benefits as well as advertising broadly through the mass media (radio, social media, town hall and village meetings, workshops etc.) for the implementation of an outreach / mobilisation strategy to ensure equal access and equity.
<i>Marginalized and Vulnerable Groups</i>		Marginalised and vulnerable groups, including migrant and indigenous populations, women, the elderly and the young will be consulted during the preparation of the full proposal, in order to ensure the project takes their needs into account and empowers vulnerable groups so they take decisions on specific adaptation actions. The project will respect property and land use rights, as well as customary law.
<i>Human Rights</i>		According to the Office of the High Commissioner on Human Rights (OHCHR) Nicaragua has not responded to requests for invitations for Special Procedures on a number of topics since 2009. These include on human rights; minority issues; discrimination against women and girls; sale of children; and indigenous people. The project consultations and the design of the full proposal will focus on the promotion of human rights during consultations, including equal women rights and the supporting of other vulnerable groups such as indigenous people. The project will aim to redress the disparities in standards of living and access to employment for inter alia women, children, youth and indigenous peoples.
<i>Gender Equality and Women's Empowerment</i>		Through targeted consultations project design and implementation will ensure that gender considerations are integrated in each activity. The project targeting strategy will have gender quotas and will promote women leadership and decision-making power for climate change adaptation and food security and nutrition. During project formulation women representatives will be consulted at national and local level and a full Initial Gender Assessment will be conducted that will enable the appropriate risk screening of the ESP 5 on Gender Equality and Women's Empowerment.
<i>Core Labour Rights</i>		Nicaragua has been a member of the ILO since 1957 and has ratified the 8 fundamental conventions: forced labour; freedom of association; right to organize and collective bargaining; equal remuneration; forced labour; discrimination (employment and occupation); minimum age; and child labour. The project will be in compliance with national, international and FAO standards in relation to core labour rights.
<i>Indigenous Peoples</i>		The project will engage in extensive consultations and participatory planning events with indigenous people namely the northern and central Chorotega ethnic groups that live in Telpaneca and Sébaco respectively. As a result of consultations during formulation (through a Free, Prior and Informed Consent –FPIC) and implementation the project will incorporate the priorities and needs of the indigenous population in all relevant activities. These consultative events will include a representative sample of the indigenous community, including women, elders and youth as territorial leaders.
<i>Involuntary Resettlement</i>		The project will not engage in involuntary resettlement. All consultations will be based on the Free, Prior and Informed Consent (FPIC) Principle. Should a situation of resettlement or economic displacement arise during the implementation of the project that was not anticipated during design, the implementers and FAO will ensure that a

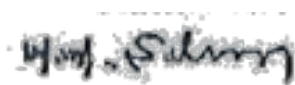
	<p>consultation and negotiation process is undertaken with the potentially affected people, according to the FPIC and do-no-harm principles. In case no agreement is reached, the project implementers will modify the specific interventions associated with the affected people, or halt them if changes are not possible. In the case where project implementers fail to undertake a consultation and negotiation process with the affected people, according to the FPIC and do-no-harm principles, the conditions and terms of the agreement could be considered to be breached and suspended, following FAO normal procedures for suspension.</p>
<i>Protection of Natural Habitats</i>	<p>The project is not expected to have any negative impact on critical natural habitats including those that are (a) legally protected; (b) officially proposed for protection; (c) recognised by authoritative sources for their high conservation value, including as critical habitat; or (d) recognized as protected by traditional or indigenous local communities. Based on preliminary findings the project does not contain natural habitats that are legally protected; officially proposed for protection; recognized by authoritative sources for their high conservation value, including as critical habitat; or recognized as protected by local communities. A final assessment of project areas vis-à-vis protected habitats will be made during full proposal design and appropriate Environmental and Social Management Plan (ESMP) developed in accordance to AF ESP guidelines.</p>
<i>Conservation of Biological Diversity</i>	<p>The project will hold consultations with local actors, the indigenous communities and experts at the participating institutions, to identify the areas to be restored, using native tree species. Further, joint community management mechanisms may be devised to ensure the survival of the plants used in the restoration effort. Site selection will be aligned with the development and local soil use plan, in consultation with each municipal government, MARENA and other pertinent authorities.</p>
<i>Climate Change</i>	<p>The project will not have any negative impact on climate change as it does not promote any AF drivers of climate change (energy, transport, heavy industry, building materials, large-scale agriculture, large-scale forest products, and waste management), it will therefore not contribute to climate change as all project components and activities contribute to increasing local capacities to better adapt to climate change.</p>
<i>Pollution Prevention and Resource Efficiency</i>	<p>The proposed project activities will not pose any significant pollution risks at concept note no further assessments will be required. A further assessment will be conducted at full design stage.</p>
<i>Public Health</i>	<p>No risks are foreseen in terms of concerns to public health. Improved ecosystem services through forest landscape restoration, improved agricultural livelihoods through climate-resilient practices, and alternative income generating activities will enhance public health through improved incomes, and improved environment.</p>
<i>Physical and Cultural Heritage</i>	<p>Nicaragua accepted the convention concerning the Protection of the World Cultural and Natural Heritage in 1979. The project full design will conduct detailed consultations including with indigenous communities to inter alia also ensure that the national cultural heritage will not be adversely affected in the formulation and implementation of the project activities.</p>
<i>Lands and Soil Conservation</i>	<p>Through the ecosystem-based adaptation actions in component 2, this project will aim to restore forest landscapes and restore degraded soils through natural regeneration, planting of native nitrogen-fixing plants and reforestation. Through component 3 the project will promote climate-smart agricultural practices will improve fertility and soil conditions in general.</p>

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

L. Record of endorsement on behalf of the government:

Fanny Sumaya Castillo Lara Minister of the Environment and Natural Resources Ministry of the Environment and Natural Resources	Date: 14 July 2021
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M. Implementing Entity certification

I certify that this proposal has been prepared in accordance with guidelines provided by the Adaptation Fund Board, and prevailing National Development and Adaptation Plans and subject to the approval by the Adaptation Fund Board, <u>commit to implementing the project/programme in compliance with the Environmental and Social Policy of the Adaptation Fund</u> and on the understanding that the Implementing Entity will be fully (legally and financially) responsible for the implementation of this project/programme.	
<div style="text-align: center;"> Maher Salman Implementing Entity Coordinator</div>	
Date: August 6, 2021	Tel. and email: 0039 0657054718 Maher.Salman@fao.org
Project Contact Person: Maher.Salman@fao.org	
Tel. And Email: 0039 0657054718, Maher.Salman@fao.org	

Appendix 1: NDA Endorsement Letter



Minister's office
July 14th, 2021
Ref.: DM-FSCL/132.07.2021

To: Mr. Mikko Ollikainen
Manager of the Adaptation Fund Board Secretariat
Email: mollikainen@adaptation-fund.org

Subject: Endorsement for Climate Resilience and Livelihoods Project in the Dry Corridor of Nicaragua

In my capacity as Designated National Authority for the Adaptation Fund in Nicaragua, we confirm that the project concept note is in accordance with the government's priorities in implementing adaptation activities to reduce adverse impacts, and risks, of the by climate change in Nicaragua Dry Corridor. The project will contribute to implementation of Nicaragua of the Nationally Determined Contribution (NDC).

Accordingly, we are pleased to endorse the project concept note proposal with support from the Adaptation Fund. If approved, the project concept note for an amount of US\$ 10,000,000, will be developed the full proposal and it will be implemented by the Food and Agriculture Organization of the United Nations (FAO) and executed by Ministry of Natural Resources and Environment (MARENA) in Nicaragua.

Sincerely,

Vamos Adelante!

Msc. Fanny Sumaya Castillo Lara
Minister
Ministry of the Environment and Natural Resources


42/19, FUERZA DE UN PUEBLO QUE VENCE...!
2021, CAMINOS DE PAZ Y VICTORIAS...!
TODOS LOS TRIUNFOS SON DEL PUEBLO...!
VIVA DANIEL...! VIVA LA REVOLUCIÓN...!



CRISTIANA, SOCIALISTA, SOLIDARIA!
MINISTERIO DEL AMBIENTE Y LOS RECURSOS NATURALES
Km.12½ Carretera Norte, frente a Corporación de Zonas Franci
Teléfono 22331112 - 22631994 - 22331916
www.marena.gob.ni

Appendix 2: Initial Gender Assessment

The population of Nicaragua is estimated at 6 million people and a population of women equivalent to 3.1 million of these 41% live in the rural sector (INIDE 2021 estimates). Since 2007, the Government of Nicaragua has promoted a solid Model of Equity and Complementarity, through actions with social justice and respect for the human rights of Women and Men, which contribute to the good living of Nicaraguan families. The Government recognizes in Women their essential and strategic role in the human development of the country. For this reason, it encourages their leadership, empowerment, autonomy and entrepreneurial creativity, to achieve a dignified life, from a comprehensive and articulated approach of all State and Government institutions.

In this context, according to the Global Gender Gap Index 2020, published by the World Economic Forum (WEF), Nicaragua is part of a select group of countries worldwide that have closed the gender gap by more than 80%, going from position 90 in 2007, to position 10 in 2016, to position 5 in 2019 and 2020. According to this report, Nicaragua continues to maintain gender parity in ministerial positions and has one of the highest percentages in the world of Women in Parliament, which places the country in 2nd place overall in the Political Empowerment sub-index.

Progress has been made in health issues for women, for example, according to records contained in the "Maternal Health Profile MDG-5 Nicaragua", of the Pan American Health Organization (PAHO), the Maternal Mortality Ratio (MMR) passed of 121 deaths per 100 000 registered live births (NVR) in 2006 a 36 deaths per 100 000 NVR in 2020 (-70.2% compared to 2006). In education, since 2007 enrolments of children, adolescents and young people have been registered, reaching almost 50.0% parity between genders in the modalities of initial, primary and secondary education. Another important advance is the issue of property management, since between 2007-2020 427 434 property documents have been delivered, broken down into: 254 818 titles in the urban area and 172 616 titles in the rural area; benefiting 235 089 women and 192 345 men.

Women in agriculture

The agricultural sector plays a prominent role in the rural employment of women, since in rural areas women actively participate in agricultural activities, considering that most of the labor force is family, and where members of the home women and men. Women contribute with greater participation in peak tasks such as seed bank preparation and harvesting at different times of the year. Time constraints based on gender are identified in the FAO study since it indicates that women contribute daily to productive work - agricultural work, caring for animals and home garden - an average of 7.5 hours and to reproductive work - cooking, cleaning, washing, home shopping, caring for people, etc. - an average of 9 hours.

Gender pay gaps have not yet been eliminated and men's wages in agriculture are significantly higher than women's wages (FAO, 2021). Current traditional practices applied in agriculture exacerbate the problem, as women are more displaced from heavy physical work (plowing with animal power). Women are more assigned to easy physical jobs (planting, transplanting or weeding); however, these are mostly defined by the head of household (more often men). Lack of access to technology is a major obstacle for women to be more productive. However, according to the study carried out by FAO, it tells us that more than 70% of women have access to a cell phone.

According to a study by the World Bank, of the socio-economic context of women in Nicaragua's Dry Corridor shows that roughly 26 percent of agricultural holdings are led by women in Nicaragua and only 30 percent of women in agriculture are remunerated, relative to 70 percent of men. Data also shows that 87% of rural women in the Nicaragua Dry corridor are not organized in any productive or commercial association.

In addition, women's ownership of agricultural assets and use of credit are very low. In general, only 8% of all households have access to financing for productive activities, and this is much lower among female led households. Further, only 39% of rural women in Nicaragua have completed primary education. Young women, especially those between 26 and 35 years, in rural areas tend to have negative outcomes due to low levels of education, higher illiteracy and very early pregnancy. The median age of pregnancy for a woman in Nicaragua is 19.5.

Women exposition to climate change.

The country is exposed to climate change, while women are directly threatened by climate hazards (floods, droughts). Women are exposed to climatic hazards in the sense that they are more confined to the home, have less mobility and are less likely to migrate from areas prone to floods and droughts. This is particularly true in rural areas, where women have less access to information channels.

Empowerment of women in decision-making. Given that the project is operated at the local level and foresees the promotion of ecosystem-based adaptation at the community level, the project will incorporate concrete actions to improve gender equality. **Components 1 and 3** have great potential to increase **the role of women** in the Creative Economy Model, actively and productively involving women and their representation directly in managerial roles and decision making. Also, in component 1 the project will include the promotion and consolidation of a culture of coexistence based on values and non-violence, fostering spaces for dialogue, awareness and training.

The project directly targets the empowerment of women through capacity development in Component 1. Another major problem that stems directly from climate change is the interruption of access to drinking water. Since the fall of the phreatic layers represents a serious risk for women, responsible for domestic tasks. In recent years, the effects of droughts led farmers to use groundwater, thus taking advantage of the only resource for household demands. The trend reached the critical stage in which people have practically no water to drink in periods when the phenomenon of the child intensifies. Women who do not have alternative water supply options are often unpaid and without water for essential needs. The project takes due account of the growing vulnerability of women and integrates an important activity of groundwater recharge and protection of water sources through forest restoration, essential for the health and daily activities of women.

There is significant potential from the current project to increase women's productivity and income through Component 2 and 3. Since women work at home, activities can directly address the untapped potential of adaptation to change activities climate. The project can enable the active participation of 30% of women in the project's target area and reach significantly more women beneficiaries through outreach and capacity-building activities.

Appendix 3: Initial Assessment of Indigenous Peoples

In the preparation of the Concept Note, the existence of indigenous peoples has been specifically identified in two municipalities where the project will have direct influence: i) in the Chorotega del Norte indigenous people, which includes the municipality of Telpaneca in the department of Madriz and ii) in the Chorotega del Centro Indigenous people in the municipality of Sébaco in the department of Matagalpa.

The indigenous people of Li Telpanecalt is located in the department of Madriz and its foundation dates from the year 1626, it has an estimated population of 12 000 people, which are distributed in 39 rural communities and five urban areas, agriculture is directed towards the sowing of basic grains: corn, beans, sorghum, musaceae, coffee being grown on a regular scale in mountainous areas such as the El Malacate hills with 1 490 meters high, Santo Domingo with 1 348 and El Picacho with 1 343. The Council of Elders, made up of an elder from each community, is the highest decision-making body and guardian of historical memory. The Board of Directors is the administrative and executive body subject to popular election. In addition, the Youth Network, Women's Network, Community Mediators and Indigenous Communicators.

The indigenous people of Sébacolt are characterized by intense industrial activity, such as the processing of rice and coffee, to which an active trade is added. In addition to the municipal government, there is the indigenous community government, made up of community members through the Indigenous Assembly, the Council of Elders, the Administrative Board of Directors and the Electoral Directory.

The main risk identified for the indigenous peoples under the project is the possibility of their exclusion given their high conditions of social and economic vulnerability or because of their cultural differences that can create barriers to access the benefits of the project. For this, an Indigenous Peoples Framework will be developed during the detailed design of the project.

The State of the Republic of Nicaragua has taken care to guarantee in a gradual process the creation and application of safeguards to guarantee due protection and guarantees for native peoples, indigenous peoples and Afro-descendants.

Legal and Institutional Framework.

The Nicaraguan people recognize themselves, through its Political Constitution, as a multi-ethnic people and an integral part of the Central American nation. Similarly, it is indicated that Spanish is the official language of the State, but it has also recognized that the languages of the Communities of the Atlantic Coast of Nicaragua will also have official use in the cases established by law. In September 1987, the National Assembly of the Republic of Nicaragua promulgated Law No. 28 "Statute of Autonomy of the Regions of the Atlantic Coast of Nicaragua". In May 2010, the National Assembly of the Republic of Nicaragua approved Decree 5934 "Decree of Approval of the Convention on Indigenous and Tribal Peoples, 1989". The State of Nicaragua, on September 17, 2014.

The Council of Indigenous Peoples of the Pacific, Central and North of Nicaragua, is an organization that emerged from the womb and from the reflection of 22 indigenous peoples who, on a negotiating route with the Government to achieve full recognition of their Autonomy, are decided for the strengthening of its institutional framework and thus created in 2008 the Council of Indigenous Peoples of the Pacific, Central and North of Nicaragua.