



NATIONAL STUDY

ON THE NEXUS BETWEEN MIGRATION, ENVIRONMENT
AND CLIMATE CHANGE IN NIGER

National Study on the nexus between migration, environment and climate change in Niger.

Project : « towards a better consideration of the nexus between Migration, Environment and Climate Change in public policies in Niger »



The use of the masculine gender has been adopted in certain sentences in order to lighten the document and make it easier to read. This choice has no discriminatory intent.

This National Study on the nexus between migration, environment and climate change, sensitive to gender in Niger is conducted within the framework of the project **towards a better consideration of the nexus between Migration, Environment and Climate Change in public policies in Niger** implemented by the International Organization for Migration (IOM).

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The village chief describes fields that have become unproductive and their abandonment for migration, Gao, August 2021 / Credit IOM

Preface

This study is timely and gives voice to communities in Niger that have historically used human mobility as a strategy for adapting to environmental and climate change.

However, under the combined effects of these changes, security issues and rapidly increasing demographics, the link between human mobility and environmental change in Niger today tends to go beyond traditional models of adaptation: It reshapes habitats, livelihood strategies and the availability of life-sustaining resources. Women, who are essential actors in the fight against climate change, are also the first victims.



During his speech at COP 26 in Glasgow in November 2021, President Bazoum described the upheavals resulting from these changes as follows: “In my country the effects of climate change are reflected not only in the increase in extreme temperatures, but also, in the same season, by periods of drought followed by periods of flooding, both causing considerable loss and damage and undermining the resilience of populations.”

Published in October 2021 by the World Bank, the Groundswell Africa Report: Internal Climate Migration in West African Countries¹, describes large-scale migration on the African continent, driven by the effects of climate change. The continent will be hardest hit, with up to 86 million Africans migrating within their own countries by 2050. According to the most optimistic scenario, in Niger, climate change could generate more than 5 million internal migrants by 2050.

The report concludes that, inclusive and resilient ecological development could reduce the scale of climate migration. As many avenues of answers as this study, conducted in a collaborative way with the Ministry of the Environment and the fight against Desertification, the National Council of the Environment for a Sustainable Development and the Ministry of the Interior, and through the production of evidence, aim to help shape, promote and implement.



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¹ Rigaud, Kanta Kumari; de Sherbinin, Alex; Jones, Bryan; Adamo, Susana; Maleki, David; Abu-Ata, Nathalie E.; Casals Fernandez, Anna Taeko; Arora, Anmol; Chai-Onn, Tricia, and Mills, Briar. 2021. Groundswell Africa: Internal Climate Migration in West African Countries. Washington, DC: The World Bank.

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the present report of the ***National Study on the Migration, Environment and Climate Change nexus in Niger, sensitive to gender*** aspects was prepared within the framework of the project ***Towards a Better Understanding of the Migration-Environment-Climate Change nexus in Public Policy in Niger***. This project was funded by the International Organization for Migration (IOM) Development Fund¹ for its implementation. The project will strengthen the knowledge and capacity of governmental and non-governmental actors to better manage issues related to the Migration, Environment and Climate Change (MECC) nexus in Niger.

For the realization of this baseline study, we benefited from the support and collaboration of several institutional and community partners involved in the implementation of the project. We would like to express our warm thanks to all the resource persons who, directly or indirectly, made a decisive contribution to the realization of this study. We would like to express our gratitude to:

- The IOM Niger Chief of Mission;
- The IOM Niger MECC Project Officer;
- The MECC specialist in West and Central Africa at the IOM Regional Office for West and Central Africa;
- The members of the study monitoring committee (Ministry of the Interior, Ministry of the Environment and the Fight against Desertification, National Council for the Environment for Sustainable Development);
- To all the survey staff for the quality of their work in far from easy conditions.

¹ The IOM Development Fund was established in 2001 to assist developing Member States and Member States with economies in transition to develop and implement joint US-IOM projects focusing on specific aspects of migration management, particularly capacity building. For more information, see: <https://developmentfund.iom.int/fr>.

FOREWORD

In Niger, which is now a country of departure, transit and destination for migrants, environmental upheavals and climate change have contributed greatly to the deterioration of living conditions. In particular, they have contributed to undermining the foundations of production systems by weakening agricultural, fishing and pastoral activities. This has had an impact on migration dynamics.

In Niger, a Sahelian country that is particularly vulnerable to climate change, many localities depend on agriculture, fishing and livestock farming, as well as on the exploitation of wood resources to acquire the main or additional income for the socio-economic survival of individuals and communities. However, climate change has a major impact on these activities. The inherent effect of a degradation of living conditions is an accentuation of the pressures on natural resources. Due to the recurrence of phenomena associated with climate change in Niger: disruption of the start and end of the rainy season, poor distribution of rainfall in time and space, decrease in water resources, recurrence of floods, rainfall deficits, ecological disasters and natural disasters, etc., there is a significant risk of increased pressure on natural resources. This is further amplified, among other things, by the strong demographic growth that can be observed in both rural and urban areas and by the intensification of seasonal migrations induced by the search for better living conditions and by situations of conflict between producers.

As elsewhere in West Africa and particularly in the Sahel, migration in Niger appears to be a strategy for adapting to the environmental changes to which the populations are exposed, either brutally, for example, in the form of devastating floods, or more slowly, for example, through the advance of the desert. Migration dynamics are thus accelerating due to the intensity of environmental changes. These factors are reinforced by the magnitude of anthropogenic impacts, but also by political and institutional choices that may be inappropriate. Located in the heart of the Sahel, where the security situation is constantly deteriorating, Niger is classified as a country at high risk from climate change.

It is to better understand the linkages of the Migration, Environment and Climate Change

(MECC) nexus that the International Organization for Migration (IOM) commissioned this study entitled National Study on the Migration, Environment and Climate Change nexus in Niger, sensitive to gender aspects, which is being conducted as part of the **Towards a Better Understanding of the Migration-Environment-Climate Change nexus in Public Policy in Niger** project under its Migration, Environment and Climate Change Division. This division has published more than 30 titles on the link between migration, environment and climate change in various geographical contexts in Africa and elsewhere in the world (<https://environmentalmigration.iom.int/mecc-division>).

This baseline study aims to generate empirical data that will contribute to strengthening the knowledge and capacity of governmental and non-governmental actors to better manage issues related to the MECC nexus and, above all, to enable public authorities to adopt specific measures to provide adequate solutions to these communities and strengthen their resilience.

In particular, the study identified the factors of vulnerability to environmental degradation and climate change in the regions of Niger. It highlighted their impacts on their migration dynamics. Above all, it identified strategies for promoting green jobs and a green economy that would serve as a foundation for the resilience dynamics of rural communities most affected by environmental degradation and climate change.



Traditional fisherman Sorko lamenting increasingly poor fishing, Niamey, August 2021 / Credit IOM

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LIST OF ACRONYMS

NBA	Niger Basin Authority
AFOLU	Agriculture, Forestry and Other Land Use
FDA	French Development Agency
IGAs	Income Generating Activities
ADB	African Development Bank
CC	Climate Change
UNFCCC	United Nations Framework Convention on Climate Change
PICDCS	Permanent Interstate Committee for Drought Control in the Sahel
NCSD	National Council for Sustainable Development
ECOWAS	Economic Community of West African States
COP	Conference Of the Parties
NDC	Nationally Determined Contribution
ECDNL	Expected Contribution Determined at the National Level
ECC	Environment, Climate Change
FAO	Food and Agriculture Organization
GEF	Global Environment Facility
EUETF	European Union Emergency Trust Fund
FAFC	Franc of the African Financial Community
FGD	Focus Group Discussion
GCF	Green Climate Fund
SRGMSS	Study and Research Group on Migration, Space and Society
GHGs	Greenhouse gases
IPCC	Intergovernmental Panel on Climate Change
3NI	Nigériens nourish Nigériens" Initiative
HDI	Human Development Index
LSRSDLD	Laboratory of Studies and Research on Social Dynamics and Local Development
MECC	Migration, Environment and Climate Change
MECLEP	Migration, Environment and CLimate change: Evidence for Policy
SDGs	Sustainable Development Goals
IOM	International Organization for Migration
NGO	Non-Governmental Organization
UN	United Nations
CSO	Civil Society Organization
WFP	World Food Programme
NAPA	National Adaptation Program of Action
GDP	Gross Domestic Product
LDCs	Least Developed Countries

ESDP	Economic and Social Development Plan
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
IGAFP	Interim Governmental Action Framework Program
WASH	Water, Sanitation and Hygiene Sector Program 2016-2030
SDIGS	Sustainable Development and Inclusive Growth Strategy
NSPACCAS	National Strategy and Plan for Adaptation to Climate Change in the Agricultural Sector
WAEMU	West African Economic and Monetary Union
IUCN	International Union for Conservation of Nature
UNCF	United Nations Children's Fund
WWF	World Wildlife Fund



GLOSSARY

The definition of key terms in the study is based on the Glossary - Migration, Environment and Climate Change: Evidence for Policy (MECLEP) published by IOM in 2014¹.

- **Adaptation (related to migration)** : "In human systems, the process of adjusting to the current or expected climate and its effects, in order to mitigate harm or exploit beneficial opportunities. In the context of mobility, adaptation is broadly understood to include forced and voluntary migration, internal and cross-border migration, and the positive and negative effects of environmental degradation and climate change on migration, displacement and planned resettlement."
- **Mitigation (of climate change)** : "Reducing the rate of climate change by managing the factors that drive it (greenhouse gas emissions from fossil fuel combustion, agriculture, land use change, cement production, etc.)."
- **Adaptive capacity**: "Ability to anticipate and transform a structure, a functioning or an organization to be better able to overcome a danger."
- **Disaster**: "A serious disruption of the functioning of a community or society causing losses and having significant human, material, economic and environmental effects, which the community or society in question cannot overcome with its own resources."
- **Climate change**: "Changes that are attributed directly or indirectly to human activity that alter the composition of the global atmosphere and are in addition to natural climate variability observed over comparable time periods."
- **Environmental change**: "Large-scale changes in the physical and biogeochemical environment due to natural causes or influenced by human activities (including industrial accidents), or caused by sudden onset or slow-moving phenomena."
- **Green jobs**: "Decent jobs that contribute to the preservation and restoration of the environment, either in traditional sectors such as manufacturing and construction, or in new and emerging green sectors such as renewable energy and energy efficiency."
- **Disaster Risk Management**: "The systematic process of using administrative guidelines, organizations, and operational skills and capabilities to implement improved strategies, policies, and response capabilities to mitigate the negative impact of hazards and reduce the potential for disaster."
- **Migration governance**: "A system of institutions, legal frameworks, mechanisms and practices to regulate migration and protect migrants."

¹ IOM, 2014. Migration, Environment and Climate Change: Evidence for Policy (MECLEP) - Glossary, http://publications.iom.int/system/files/pdf/meclep_glossary_fr.pdf, consultation date: October 10 2021.

- **Migration influenced by environmental changes:** "Where there is evidence that environmental changes influence migration factors, thereby contributing to the decision to migrate."
- **Disaster risk reduction:** "A conceptual and practical approach to systematically analyzing and responding to the factors that cause disasters, including limiting exposure to hazards, reducing the vulnerability of people and property, practicing sound land and environmental management, and promoting better preparedness for damaging events."
- **Resilience:** "The ability of a system and its component parts to anticipate, absorb, account for, or recover from the effects of a hazardous event in an effective and timely manner, including preserving, restoring, or enhancing its basic structures and essential functions."
- **Risk:** "The potential realization of consequences involving human values (including human beings themselves), the outcome of which is uncertain. Risk is often represented as the probability of occurrence of hazardous trends or events multiplied by the consequences if they were to occur."
- **Vulnerability:** "The propensity or predisposition to experience adverse effects. Vulnerability encompasses a variety of concepts, including susceptibility to harm and the inability to respond and adapt to it."



Dyke to protect against devastating rainwater, financed by the diaspora, Gao, August 2021 / Credit IOM

EXECUTIVE SUMMARY

“Establishing baseline data on the nexus Migration, Environment and Climate Change (MECC) in Niger”

As in other West African countries, migration has been at the centre of household and community coping strategies in Niger in the face of environmental shocks such as droughts, land degradation, floods, locust invasions and desertification. It has also been adopted to mitigate the disastrous effects of socio-economic and security shocks. In a context of climate change, it is therefore legitimate to ask whether this role has increased in the face of increasing climate risks. It is also important to analyze how it is possible to make people's activities levers for strengthening the resilience of ecosystems and production activities to climatic and environmental hazards.

There are several questions that are at the heart of the project under which this study entitled National study on the link between migration, environment and climate change, gender sensitive in Niger is being conducted. This is the project Towards a better consideration of the link between Migration, Environment and Climate Change in public policies in Niger. Implemented by the International Organization for Migration (IOM) with funding from the IOM Development Fund (IDF), the project's main objective is to contribute to the development of public policies that address the issues related to migration, environment and climate change in Niger.

Driven by the desire to produce data and knowledge that would demonstrate the multiple aspects of the MECC nexus, this study was based on the IOM's Migration, Environment and Climate Change: Evidence for Policy (MECLEP) conceptual model. It was carried out using a participatory approach based on a dialogue with stakeholders (study monitoring committee, government technical services, local authorities, development partners, universities and research centres, civil society organizations, etc.) to define and validate methodological choices (research approach, survey sites, data collection tools).

The context and objectives of the study required the implementation of a mixed methodological approach based on a double complementary approach:

- a quantitative approach based on a questionnaire survey of 355 rural households in 14 departments in six regions of the country (Agadez, Dosso, Maradi, Tahoua, Tillabéri and Zinder), as well as a quantitative survey of 147 internal migrants based in Niamey, the capital city of Niger;
- a qualitative orientation centred on the realization of 14 focus-group discussions (FGD) and 24 semi-structured individual interviews with a diversity of actors (resource persons within the deconcentrated and decentralized structures of the Nigerien state, local elected officials, village chiefs, leaders of women's groups, producers, traditional authorities, etc.).

Thanks to an intensive field survey, carried out using the ODK collect tool for quantitative surveys, we were able to obtain a large amount of data in order to shed light on how environmental degradation and climate change are perceived by rural households, the roles they attribute to them in the weakening of socio-economic systems, and consequently in the undermining of the social, economic and productive bases in the villages, but also the place they attribute to it in migration dynamics.

“Climate change is uncertainty in everything!” This expression, which we heard at almost every focus group, symbolizes the dramatic consequences of events that are usually associated with climate change in the Nigerien context: disruption of rainfall cycles, recurrence of extreme events such as floods, land degradation, frequent heat waves, shrinking of grazing areas, drying up of rivers, strong winds, deforestation, etc.

“Climate change is global disruption’! The links of the MECC nexus through the lens of rural household perceptions in Niger”

The populations did not lack anecdotes, clues, illustrations, scales of comparison, signs, etc. to illustrate all the upheavals that they attribute to environmental degradation and climate change. The clear break deciphered between the times, the landscapes, the lush nature, the high yields of the past and the desolate images of today, which show devastated nature, denuded land, the disappearance of plant and animal species, etc., are, according to them, all clear signs of climate change. Climate change and environmental degradation are putting the resilience of people to the test.

The people surveyed identified climate events that further highlight the reality of climate change. Overall, the three most frequent climate events are: rising temperatures (75.5%), drought (63.9%) and strong winds (34.6%). When asked about the overall impacts of climate change, the quantitative survey revealed that, overall, the main impact of climate change on socio-economic activity is a decrease in production, according to 76.6% of respondents. This is followed by more difficult living conditions (59.4%). As for the decrease in livestock, it was mentioned by 40% of respondents.

A large majority of respondents noted changes in the availability of natural resources. Overall, the resources most affected by these changes are agricultural land (69%) and water (48.2%). This trend is found in the regions of Maradi, Tahoua, and Zinder. Water was mentioned the most in Agadez, accounting for 4/5 of the total. Timber is most affected in the regions of Agadez, Dosso and Tillabéri. As for pastures, they are more affected in Tillabéri and Dosso.

Most respondents noted recent changes in the migration of the local population. They represent 67.6% of the overall sample. According to the nature of the change, the majority reported an increase in migration (46.5%). This finding is shared in almost all regions. Today, several significant dynamics can be observed in the different regions of Niger in terms

of migration. They have the merit of highlighting the impacts of environmental degradation and climate change on migration dynamics. The means used to react to environmental shocks and climatic risks is to opt, initially, for seasonal migration, alternating between settling in urban areas during the dry season and returning to the village during the rainy season. However, for many households, this move to the city, namely in Niamey, initially intended to be temporary, quickly turns into a longer stay, or even a permanent move to the city where the informal economy offers a range of survival activities.

Internal mobilities tested by the ECC binomial in Niger : the case of Niamey

Analysis of the effects of climate change and environmental degradation on migration dynamics has highlighted the centrality of rural exodus in migration systems in rural Niger. Migration to the city during the dry season is deeply rooted in migration systems in all regions of Niger. Niamey, because of its status as a place of concentration of administrative, industrial, economic, educational and commercial activities, etc., is therefore an ideal place to carry out surveys of internal migrants in order to better highlight the weight of factors linked to environmental degradation and climate change on migration and vice versa.

An analysis of the characteristics of the internal migrants surveyed in Niamey reveals the following typical profile: a young single adult man or woman with no schooling, of rural origin, who earns in the popular economy and has come to seek income to improve his or her socio-economic situation and that of his or her family in his or her place of origin. This economic motivation is certainly important, but it is not the exclusive factor in internal mobility. Factors related to environmental degradation and climate change play a key role in migration dynamics.

The study points to the continuum of vulnerabilities that internal migrants face in Niamey as a result of their settlement in sites that are highly exposed to risks related to environmental degradation and climate change. It is therefore not surprising that they pay a high price for disasters such as floods, the recurrence of which is seen as emblematic of climate change.

Gender issues around the MECC nexus

The consequences of climate change have contrasting impacts on women and men in Niger, especially in rural areas where women face an overlap of vulnerabilities against a backdrop of economic and social inequalities reinforced by cultural norms and religious prescriptions. Environmental degradation and climate change amplify these inequalities. In order to understand the roots of these inequalities and to identify ways of building resilience, we have systematically used an approach that allows us to relay the voices of women and other vulnerable groups, their perceptions of how their lives and activities are impacted by environmental upheaval and climate change.

In Niger, the responsibility for unpaid care falls heavily on women. The time and effort spent on cooking, health and care of family members, cleaning, domestic chores such as fetching water and wood products for cooking, falls on women because of gender norms. This translates into an extremely large amount of work for women. In a context where men migrate, this time may be even greater as women may be forced to combine unpaid care responsibilities with physically demanding domestic and field work to compensate the absence of men.

Climate change and environmental degradation are seen as amplifying the difficulties in carrying out activities of a domestic nature, particularly those that rely on the use of natural resources (water supply, fuelwood). The performance of these tasks becomes more difficult in the context of climate change. The migration of men is then perceived as an amplifier of the constraints experienced by women. Promoting socio-economic development that is resilient to climate change in rural areas should mean supporting autonomous women's initiatives: more women stay in their areas, but above all they implement actions to overcome development constraints while being

concerned about the ecological sustainability of their initiatives.

Overall, based on quantitative and qualitative data, women in rural Niger are affected in many ways by climate change and environmental degradation:

1. *in the performance of their domestic activities, which are made more difficult and often more painful by the scarcity of resources such as water and wood due to their depletion, droughts, deterioration of the land, etc., all of which contribute to greater precariousness in households and within communities. The hardening of living conditions greatly affects women within the domestic space;*
2. *by finding themselves with increased responsibilities in addition to others that are quite heavy due to the migration of men. The «absence» of men has a multiplier effect on women's tasks;*
3. *by migrating in their turn. This migration of women, which takes several forms (seasonal migration, rural exodus, departure abroad), is even perceived by several respondents as one of the most emblematic changes of climate change and environmental degradation in rural Niger. In some localities, such as Kantché, Magaria and Loga, this phenomenon has become more widespread and has led to social consequences that have been interpreted differently (divorces, marital conflicts, etc.). The majority of female migrants move to urban centres. From this point of view, Niamey stands out as the main destination of these female migratory flows.*

Regional variability in the linkages of the MECC nexus

The extent and intensity of vulnerabilities associated with climate change are not uniformly expressed in Niger. Consequently, the place given to migration in the face of environmental disruption is not homogeneous between regions and even within a region there are contrasts in the place given to migration as a response to environmental degradation and climate change.

Niger's regions are therefore, to varying degrees, areas of mobility with varied causes and forms (internal migration, international migration, emigration and immigration). Mobility has thus always made it possible to maintain the balance between the population and the possibilities of the environment and to cope with the socio-economic difficulties that the populations were facing. Mobilities are, however, a function of the types of environmental change, which can take the form of extreme and sudden events or continuous and slow degradation, which influence the forms and extent of these mobilities.

The rural household survey showed that the main reasons for people leaving as a result of environmental change are lack of availability of natural resources for livelihoods (42%), more frequent droughts (21.4%), lack of livelihood opportunities (20.6%) and large fluctuations in rainfall preventing livelihood activities (15.8%).

Mobilities have environmental, social and economic costs in sending, transit and receiving areas. Significant improvements in living conditions could help to mitigate the multiple costs of mobility. To achieve this, it is important to build people's resilience by supporting their own initiatives and endogenous practices to adapt to environmental degradation and climate change.

Although throughout the field surveys, the people we met showed an inclination to describe in the most realistic terms possible the multiple consequences of environmental degradation and climate change on their living conditions, they highlighted the central role of migration in the resilience dynamics of rural households. But the survey data can hardly be confined to these dimensions. Respondents highlighted the many innovative initiatives and endogenous practices they are developing to implement actions to adapt to the 'generalized disruption' caused by climate change and environmental degradation. These are, for example, new cultivation practices and changes in certain productive and domestic activities to adapt to unpredictable rainfall, land degradation, depletion of wood resources, recurrent heat waves, chronic food insecurity, etc.

The study identified actions that could serve as receptacles for future interventions to support the resilience dynamics of Niger's populations.

“ Only the owner of a house knows where his roof has a hole in it». Innovative practices and endogenous initiatives in response to the challenges of the MECC nexus ”

Despite the scale and intensity of the constraints, the Nigerien people have shown remarkable dignity and resilience. They have accumulated know-how and local processes to survive in a hostile environment, especially because of its aridity. These are valuable elements for providing appropriate support to rural populations in particular, who have developed what could be called a «culture of resilience».

It is therefore necessary to start from the needs of the populations, their own initiatives but also their capacities for action in order to define the means and interventions likely to contribute to strengthening their resilience in the face of climate change and environmental degradation. It is also essential to promote a gender-based approach in order to identify the most relevant actions for women, young people and other vulnerable groups, while linking them to their socio-economic roles and productive activities and directing them towards the removal of barriers to their social and economic participation.

The populations we met everywhere stressed the urgency of fighting climate change, but above all by involving them in this fight, by accompanying their own resilience dynamics. Developing rural localities, improving living conditions, encouraging the emergence of sustainable empowerment dynamics among women and young people, promoting income-generating activities but with a focus on preserving natural resources, supporting women in viable and ecologically sustainable economic projects, etc. are all avenues to be explored in order to improve the resilience of rural households to climate change and environmental degradation. These proposals are in line with the perspectives favoured by the Nigerien authorities, which emphasize the fight against desertification, the restoration of degraded land, the reduction of food insecurity, the promotion of rural water supply, the introduction of appropriate technological innovations and the fight against poverty.



Flood damage in Niamey, 2020 / Credit DGPC

INTRODUCTION

As elsewhere in Africa, in order to put in place relevant institutional and public responses in Niger in the area of the Migration, Environment and Climate Change (MECC) nexus, and at the same time bring decision-makers to a good integration of the issues and challenges related to this nexus, it is essential to have evidence to show the effects of environmental degradation and climate change on migration dynamics, but also the impacts of migration on the environment and on climate change. As in other West African countries, migration has been at the center of household and community coping strategies in Niger in the face of environmental shocks such as droughts, land degradation, floods, locust invasions, desertification, etc., or to mitigate the disastrous effects of socio-economic and security shocks.

In a context of climate change, it is important to examine whether this role has increased in the face of increased climate risks, but also how internal mobility increases the pressure on natural resources in the localities where the populations have been driven out of their homes by a deterioration in environmental conditions. It is also important to analyze how it is possible to use migrant transfers as levers to strengthen the resilience of the economies in the areas of departure, but also to promote sustainable development practices that can help reduce vulnerability to climatic and environmental hazards and reduce the pressure on natural resources.

There are several objectives here that are at the heart of the project under which this study is being conducted. This is the project towards a better consideration of the link between Migration, Environment and Climate Change in public policies in Niger, implemented by the International Organization for Migration (IOM) with funding from the IOM Development Fund (IDF). Its main objective is to contribute to the development of public policies that address issues related to migration, environment and climate change in Niger. To this end, the project aims to equip key actors and institutions in Niger

to implement public policies that take into account the MECC nexus. The basis of this approach is the completion of this National Study on the nexus between migration, environment and climate change, gender sensitive in Niger, which should generate data and knowledge capable of feeding and informing public policies, identify content elements for capacity building of state actors through training activities, formulate recommendations on the integration of the nexus MECC in public policies and, finally, draft a high level policy note on the integration of the nexus MECC in public policies.

The baseline study whose results are presented in this report relied on a dual qualitative and quantitative approach to generate empirical data capable of shedding light on the linkages between migration, environment and climate change in the different regions of Niger. The data used to illustrate the linkages of the MECC nexus are therefore derived from a questionnaire survey of 355 rural households in six regions of the country, a quantitative survey of 147 internal migrants based in Niamey, and a series of semi-structured individual interviews and focus group discussions (FGDs) with institutional and community actors (local elected officials, agents of the deconcentrated and decentralized structures of the State, community leaders, etc.) and with local populations with a focus on the environment.) and with local populations, with special attention given to women in each of the study locations.

This report on the research findings follows the first, second, third and fourth deliverables, which are the work plan, the literature review report, the field survey methodology and the interim research findings, respectively. It is structured around two main parts:

1. *A first one on the contextual, theoretical and methodological elements. It was used to present the conceptual framework of the MECC nexus applied to the Nigerien context, to present*

Niger and especially to show its vulnerability to climate change. Following this inventory, which we carried out using reference documents on public policy, particularly in the areas of the environment, the fight against climate change, sustainable development, migration, economic and social development, etc., we presented in detail the methodological framework used in this study. We have insisted on the choices made to remain faithful to the participatory approach that has been favored since the beginning of this study. This approach consisted of constant dialogue with the study's monitoring committee and with other stakeholders during the study's scoping workshop. In this section, we discuss the principles for selecting the localities for the field survey, the tools (questionnaires, interview guides and FGD facilitation guides), the conduct of the field survey, and the difficulties encountered and how to resolve them;

2. A second part devoted to the presentation of the results of the study through five chapters. The first chapter presents the results of the questionnaire survey of rural households. It highlights the multiple faces of environmental degradation in rural Niger, its high exposure to climate change and the prominent role of environmental degradation and climate change in migration dynamics. These take the form of seasonal mobility, but they also tend to be more and more long-term. They are marked by a more accentuated diversification of strategies, destination places and links established with the localities of origin. The second chapter presents the results of the survey of internal migrants in Niamey. It shows how environmental degradation and climate change play a crucial role in internal mobility. However, once in Niamey, internal migrants tend to settle in sites exposed to many vulnerabilities. As a result, they settle in a continuum of vulnerabilities. The third chapter highlights gender issues related to the MECC nexus. Since gender dynamics are a central dimension of the study, this aspect has been taken into account in this chapter by highlighting the impacts of environmental degradation and change on vulnerable groups (women, youth, the elderly) and their responses to the

superimposition of vulnerabilities accentuated by unequal access to natural resources in rural areas (land). The environmental upheavals induced and/or accentuated by climate change are at the origin of new social, statutory, economic and migratory dynamics. They reveal the development of autonomous female mobility towards urban centers but also towards foreign countries. They are not, however, without consequences at the family and community levels in particular. The fourth chapter discusses regional variations in the MECC nexus, as the issues and challenges associated with it are not homogeneous in Niger. This variability is also expressed in migration dynamics. The fifth and final chapter highlights endogenous practices, innovative initiatives and proposals for action to curb the harmful effects of environmental degradation and climate change. These initiatives of the populations deserve to be supported in order to strengthen the resilience capacities of the populations, especially in rural areas.



Community consultation on protection aspects, Arlit, 2020 / Credit IOM Monica Chiriac

PART ONE

THEORETICAL AND CONTEXTUAL REFERENCES AND METHODOLOGICAL APPROACH

This first part is devoted to the presentation of the theoretical and contextual framework of the study as well as the methodological approach of the research.

First, we describe the objectives of the study and the conceptual framework we use to show the links between migration, environment and climate change in Niger.

Next, we briefly present Niger, focusing on development challenges and the environmental context in order to highlight the main climate risks and their evolution.

Finally, the methodological approach is described in detail, focusing on the field research strategy, the principles that guided our choices regarding sampling, the selection of study sites and the actual field survey.



A village elder recounts the men's departure and the women's decision to take charge of themselves, Sargagui, August 2021 / Credit IOM

1.1. RESEARCH OBJECTIVES AND CONCEPTUAL FRAMEWORK OF THE MECC NEXUS

The main objectives of this study on the MECC nexus in Niger are to:

1. show the effects of climate change and environmental degradation on migration in Niger with particular emphasis on the impact of environmental degradation and climate change on human mobility, the impact of disasters and catastrophes on human mobility and the impact of natural resource availability on human mobility
2. analyze the impact of the environmental context on internal and external migration trends, taking into account the gender dimension (consideration of women, youth and other vulnerable groups);
3. identify environmental risks and their possible impacts on migration, as well as environmental policies that have an impact on migration;
4. identify solutions, initiatives and adaptation strategies of local populations, the diaspora, the government of Niger and its development partners while showing the possibilities of putting them in synergy for an optimal reinforcement of the capacities of resilience to environmental degradation and climate change.

To carry out this study, we relied on a capitalization of studies conducted within the framework of the Migration, Environment and Climate Change: Evidence for Policy (MECLEP)¹ project of IOM.

The conceptual framework encompasses not only the climatic variables that determine the link between climate change and migration such as floods, droughts, high winds, silting of rivers, loss of land, loss of vegetation cover, destruction of grazing areas, loss of faunal and floral biodiversity, etc., but also non-climatic factors that directly or indirectly influence migration in Niger such as poverty, food insecurity, conflict, gender inequality, violence, etc.

In the conceptual framework, climate change variables are divided into rapid onset and slow onset events. Fast onset events include floods, high winds, bushfires, etc. These fast onset events in turn present secondary climate risks. These rapid onset events in turn present secondary climate risks, the most damaging of which are erosion and salinity intrusion, bank erosion, destruction of vegetation cover, land loss, etc. On the other hand, slow onset events include drought, temperature increase, rainfall variation, etc. Environmental degradation mainly includes pollution of environmental resources, e.g. water; land and air; land misuse, soil erosion and loss, desertification, wetland degradation, loss of biodiversity, deforestation, overexploitation of natural resources, reduction in the flow and extent of rivers, etc

The study attempted to create as diverse a profile as possible of the typical migrant due to environmental degradation and climate change. To do so, various factors were highlighted, such as geographic origin, perceptions of environmental degradation and climate change, socio-economic level, production activities, gender, main activity, access to basic social services (health and education), whether people migrate as a group or individually, perceptions of the role of migration in the face of environmental disruption, expectations of remittances from migrants and their ability to support the resilience of the populations left behind, etc.

¹ IOM, 2014. Migration, Environment and Climate Change: Evidence for Policy (MECLEP) - Glossary, http://publications.iom.int/system/files/pdf/meclep_glossary_fr.pdf, consultation date: September 20, 2021.

The conceptual framework also includes types of migration, i.e., whether mobility is forced or voluntary, as well as seasonal, temporary, or permanent migration. The destination of migrants is taken into account to determine whether people have moved within and/or outside Niger. Finally, the research focused on the factors that define migrants' choice of destination, the reasons behind their choice of settlement location, the livelihoods in the new location and the environmental conditions prevailing in their new destination areas, their "ecological footprint" in their settlement locations, etc. The research also considered the impact of migration on households as well as the effects of migrants' remittances on resilience dynamics.

After collecting data on the impacts of climate change and environmental degradation on migration patterns, the study sought to establish the links between the three components of the nexus. In theory, climate change and environmental degradation affect several activities, but especially those related to natural resources: agriculture, livestock, fisheries, etc. They also have implications for migration. They also have implications for water supply, food security, infrastructure, human health, etc.

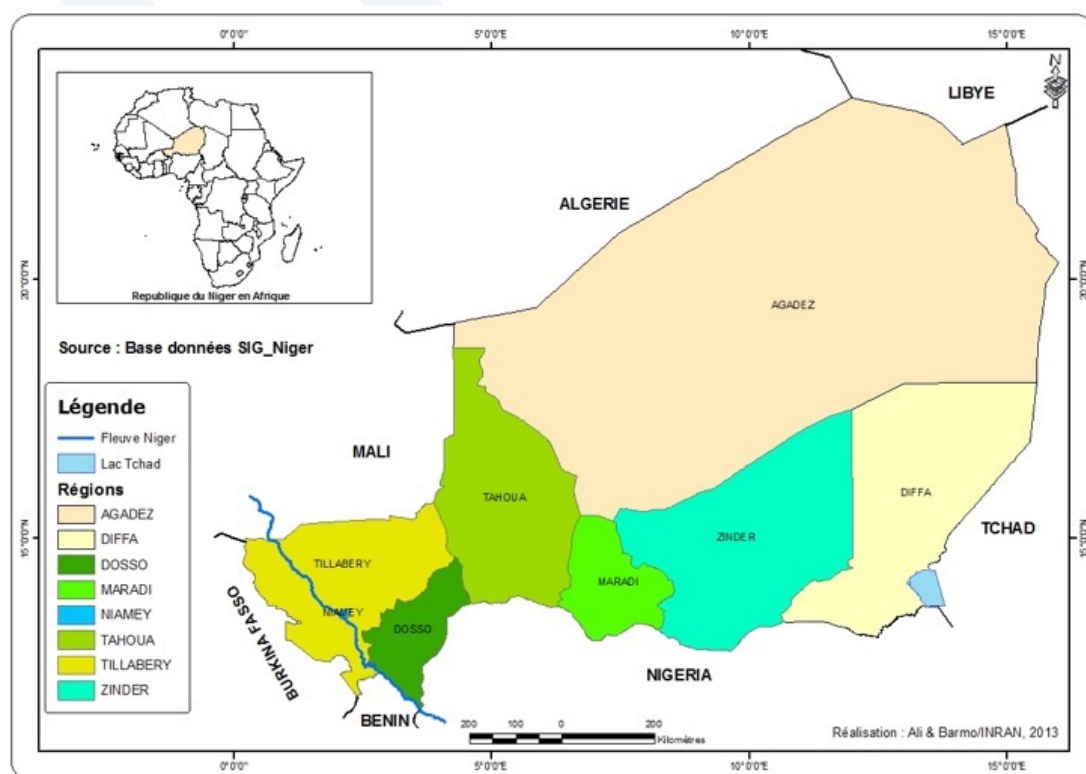
The most affected communities and vulnerable groups are attempting to adapt, including through migration. For this reason, the study focused on isolating the migration dynamics attributable to climate change and environmental degradation in Niger. Located in the heart of the Sahel, Niger is considered a climate change hotspot because of its high vulnerability, which is exacerbated by the many development challenges the country faces in a sub-regional context characterized by security instability that can compromise government development efforts and affect the resilience of populations.

1.2. NIGER: VULNERABILITY TO CLIMATE CHANGE AND DEVELOPMENT CHALLENGES

1.2.1 A brief presentation of the country

A West African country located in the heart of the Sahel, Niger is landlocked and covers an area of 1,267,000 square kilometers, three-quarters of which is desert. Niger's latitude is between 11°37' and 23°33' North, and its longitude between 0°06' and 16° East. It is bordered by Libya and Algeria to the north, Benin and Nigeria to the south, Chad to the east, Burkina Faso and Mali to the west. It occupies a position of a crossroads country between North Africa and Sub-Saharan Africa and between West Africa and Central Africa¹.

Map 1 : Republic of Niger Location

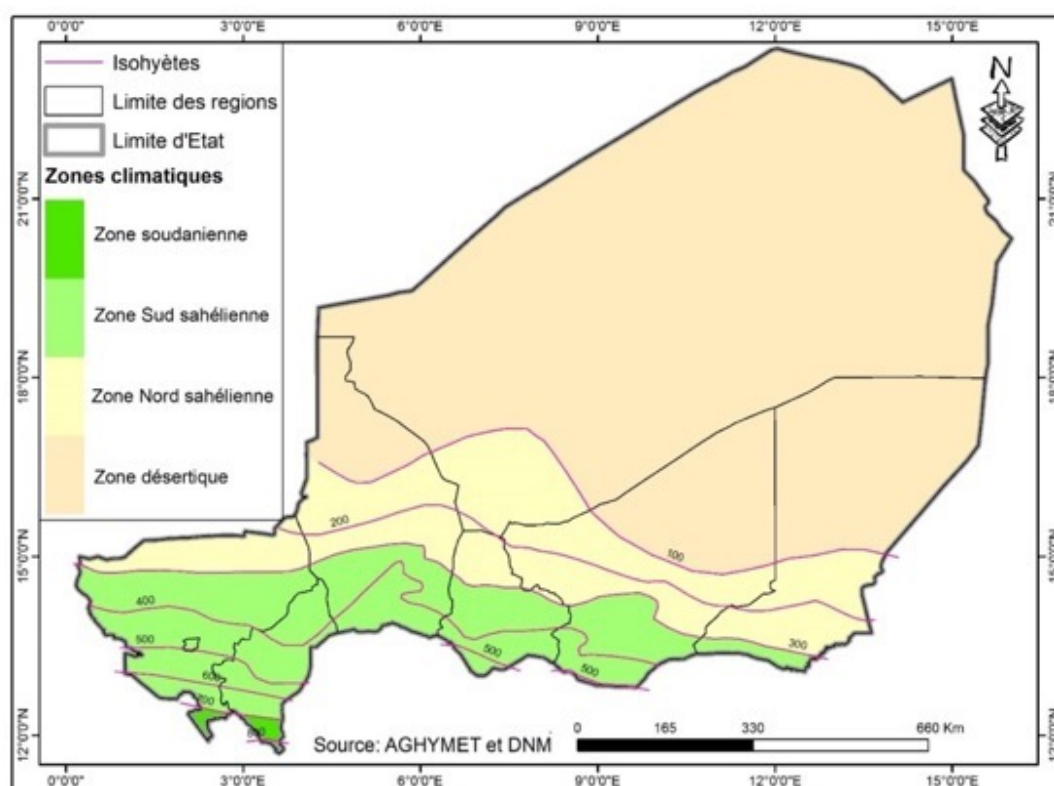


Source : Republic of Niger, Office of the Prime Minister, SE/CNEDD, State of the Environment in Niger, Interim Report, June 2020.

Niger has eight administrative regions, including its capital Niamey: Agadez, Diffa, Dosso, Maradi, Tahoua, Tillabéri and Zinder. The country is also divided into four natural zones, each characterized by distinct ecosystem and wildlife conditions and relief, but with diversity within each zone: the desert zone; the northern Sahelian zone; the southern Sahelian zone; and the Sudanian zone.

¹ Republic of Niger, Office of the Prime Minister, SE/CNEDD, State of the Environment in Niger, Interim Report, Niamey, June 2020

Map 2 : Delineation of Niger's four natural areas



Source : Republic of Niger, Office of the Prime Minister, SE/CNEDD, 2021, State of the Environment in Niger, draft version, p. 17.

The desert zone covers 77% of the country. It is characterized by an average annual rainfall of less than 150 mm per year. It has an arid or semi-arid climate, with high average temperatures and very contrasting extreme temperatures, a very low relative humidity and rare and extremely irregular rainfall. The vegetation is mainly steppe. The population density is generally very low (less than 10 inhabitants per km²). The main economic activities are livestock and non-agricultural activities (crafts, tourism, exploitation of the subsoil, trade). Products such as dates, wheat, millet, rice, etc. from the irrigation practiced in the oases also represent an important source of income.

The northern Sahelian zone covers 12% of the total area of Niger. It is characterized by an average annual rainfall of between 150 and 350 mm. It is presented as a transition between the Sahara and the Sahel, with random rainfall but which, in favorable years, allows for the development of rainfed agriculture (millet). The natural vegetation is mainly composed of thorny plants. This area, considered to be traditionally pastoral, is being rapidly colonized by agriculture, especially in areas where demographic pressure is high.

The southern Sahelian zone covers 10% of the country and receives between 350 and 600 mm of rain. The vegetation here is marked by the presence of clear savannahs. Agriculture is widely practiced here, especially cereals or in association with legumes. In the wetlands of the valleys, important market gardening and arboriculture activities are developed. Livestock breeding is also widespread, in extensive transhumant or agro-pastoral systems. The area is densely populated, especially in the center of the country.

Finally, the Sudanian zone occupies about 1% of the total area of Niger and receives more than 600 mm of rain per year in normal years. The vegetation is made up of wooded savannahs or wooded areas, which are increasingly declining due to population growth, land degradation, agricultural expansion and pastoral pressure. This area is characterized by agricultural potential that is not yet well exploited, especially in irrigated agriculture and rainfed cash crops.

According to projections based on the results of the last General Census of Population and Housing (RGPH) of 2012, the population of Niger was estimated in 2019 at approximately 23.3 million inhabitants². According to forecasts by Niger's National Institute of Statistics (INS), the country's population is expected to reach nearly 28,184,991 by 2025. The Total Fertility Rate (TFR), which averages 7.6 children per woman, remains one of the highest in the world. Life expectancy was 62 years in 2019. Niger's population is mainly rural (83.6%). It derives much of its income from the exploitation of natural resources. The urban population, which represented only 5.3% of the total population in the 1960s, reached 13% in 1977 and 16% in 2012. This increase in the urban population is primarily the result of two important interrelated factors: natural growth and rural-urban migration.

According to demographic forecasts, the population of Niger could reach 41,516,415 by 2035³. This would pose major challenges in terms of meeting the social demands resulting from this strong population growth, particularly in terms of public investment in the basic social sectors (health, education, housing, employment) and in balancing land use. This population growth may also increase pressure on natural resources (cropland, grazing areas, water resources, wood energy, etc.) and fuel conflicts over their use. This is all the more true given that Niger is located in a Sahelian zone where natural resources are scarce and therefore highly coveted.

As elsewhere in Africa, Niger's population is characterized by its extreme youth: half of the population is under 25 years old. The preponderance of young people can be an asset, provided that the investments needed to develop this human capital are effective and efficient and, above all, provide adequate institutional responses to the aspirations of young people in terms of public investments in health, housing, employment and education. Otherwise, it can be a burden and a source of socio-political destabilization in a sub-regional context marked by the jihadist threat against a backdrop of multiple crises (social, political, environmental, geopolitical, etc.). Despite the efforts made by public authorities to control the rapid growth of the population, this growth has not yet been curbed due to high fertility rates driven by a strong desire for children because of the prevalence of social, cultural and religious norms with a strong birth orientation.

Niger's economy is heavily dependent on the exploitation of natural resources, particularly mining, pastoral, agricultural and fisheries resources. The agricultural sector, on which the country's food security depends, is made up of many small family farms, which are exclusively self-sufficient. Despite this, it contributes 42% of GDP (compared to 17% for industry and 41% for services)⁴, while remaining the main source of income for the rural population alongside livestock. However, the rainfed nature of agricultural production places the agricultural sector in a position of great vulnerability to climate change. Agriculture is therefore the primary activity of the rural population of Niger. It mobilizes more than 80% of the active population. It is organized around a rainfed crop system mainly dominated by cereals (millet, sorghum, rice, maize, fonio) and cash crops (cowpeas, groundnuts, sesame, cotton, etc.), an irrigated system based on the cultivation of rice and wheat in hydro-agricultural facilities and finally the development of market garden crops including onions and peppers.

² Republic of Niger, 2020. National Strategy and Plan for Adaptation to Climate Change in the Agricultural Sector SPN2A 2020-2035, http://spn2a.org/wp-content/uploads/2020/05/AdaptAction_Niger_SPN2A_document_cadre_10042020.pdf, consultation date: September 15, 2021.

³ Republic of Niger, Ministry of Population, 2019. National Population Policy 2019-2035, <https://pnin-niger.org/pnin-doc/web/uploads/documents/238/Doc-20191217-095701.pdf>, consultation date: September 15, 2021.

⁴ Republic of Niger, 2020. National Strategy and Plan for Adaptation to Climate Change in the Agricultural Sector SPN2A 2020-2035, http://spn2a.org/wp-content/uploads/2020/05/AdaptAction_Niger_SPN2A_document_cadre_10042020.pdf, consultation date: July 15, 2021.

Livestock is the second main activity of rural populations. Employing nearly 87% of the population, which makes it their exclusive or secondary activity, livestock production in Niger is structured around three interrelated systems: extensive, semi-intensive and intensive. Niger's pastoral vocation and the size of its livestock population mean that it plays a key role in supplying West African markets and in pastoral mobility. However, "the surface area of the pastoral zone, which hardly exceeds 350,000 km², is tending to shrink under the combined effect of the installation of migrant farmers in pastoral areas and the grabbing of pastoral land by economic operators. Its integrity is being challenged north of the crop line by extensive agriculture. 69% of the rangelands are located in the pastoral zone and 25% are located in the intermediate zone."⁵

Notwithstanding its continental nature, Niger has a fisheries sector based on artisanal and continental fishing practiced on the Niger River and its tributaries, Lake Chad and artificial ponds and reservoirs. Other sectors contributing to the Niger economy include tourism, handicrafts, transportation and industry. However, the industrial sector is relatively undynamic and is composed mainly of mining, agri-food, chemical and para-chemical industries and those operating in the textile and leather sectors.

Niger has many assets, including its significant natural resources, its large surface area, and a young and resilient population that has withstood the many political, economic and health shocks that the country has experienced throughout its tumultuous socio-political history due to the recurrence of coups d'état and attempts to overthrow regimes. The country has mineral resources such as uranium, which has been mined since the early 1970s, and recently discovered oil. Despite its aridity, Niger has significant water resources. It also has numerous wildlife and plant resources.

Notwithstanding all this wealth, Niger continues to be classified as a Least Developed Country (LDC) and as a country with a low level of human development, and ranks last in the world on the Human Development Index (HDI) with an index of 0.394⁶. Despite some momentum supported by investments in infrastructure, extractive industries and services, as well as structural reforms, notably to develop the private sector, and to strengthen the resilience of agriculture, key human development indicators remain low. Niger continues to face social inequalities that suggest a high prevalence of poverty affecting nearly 44 percent of the population and high rates of unemployment and underemployment among youth. The constraints have been greatly accentuated by the deleterious effects of the COVID-19 pandemic.

Box 1 : Low level of human development and the extent of severe poverty in Niger

Niger's human development indicators are very low, making it one of the poorest countries in the world. Poverty remains endemic, chronically affecting more than a quarter of the population (26.8%). It is multidimensional (89.8%, with a severity rate of 73.5%), deeply rural (monetary poverty estimated at 45.4%, 52.4% of which is in rural areas) and female, with an unemployment rate four times higher for women (28%) than for men (4.4%). The social situation is characterized by a relatively high level of poverty and poor coverage of basic social needs, reflecting a fragile social protection system, an insufficient supply of basic social services in terms of quantity and quality, a meager supply of services for youth, sports, culture, the arts and recreation, as well as the persistence of inadequate socio-cultural practices.

Source : OCHA, 2020. *Humanitarian Needs Overview Niger*; https://reliefweb.int/sites/reliefweb.int/files/resources/13012020_ner_hno_2020.pdf, download date: September 20, 2021.

⁵ Republic of Niger, Office of the Prime Minister, SE/CNEDD, 2021. *State of the Environment in Niger, Interim Report*.

⁶ UNDP, 2020. *Human Development Report 2020. The Next Frontier: Human development and the Anthropocene*, http://hdr.undp.org/sites/default/files/hdr_2020_overview_french.pdf, consultation date: September 20, 2021

As a poor Sahelian country, Niger is continually exposed to multiple emergencies that appear simultaneously and that put its capacity to respond to them to the test. The humanitarian crisis persists and is worsening due to the security crisis, itself aggravated by the growing instability in neighboring countries, the emergence of multiple crises in the regions of Diffa, Tillabéri, Tahoua and recently Maradi. This deteriorating security situation has resulted in the arrival in Niger of thousands of refugees, returnees, migrants, and internally displaced persons (IDPs) whose need for access to basic social services for survival is essential. The population, especially children and women, is continuously exposed to malnutrition, food insecurity, recurrent epidemics, cyclical floods, drought, and forced displacement. These challenges are strongly linked to climate change, and Niger is presented as a country at risk.

1.2.2 A country vulnerable to climate change: intensity and variability of risks and impacts

Niger is located in the heart of the Sahel. It is considered one of the most at-risk areas in the face of climate change, which exacerbates an already pronounced vulnerability, particularly in terms of climate. The region⁷ is continually exposed to challenges such as chronic droughts, lack of water, rising temperatures, advancing desert, recurrent violent and dusty winds, destruction of thin vegetation cover, silting of rivers, etc. In recent years, devastating floods have highlighted the unpredictability of climate scenarios in the area⁸.

Due to its geographical location and its intrinsic climatic characteristics, Niger is in a vulnerable position with regard to climate change. The various reports and studies always classify it among the countries where the repercussions of climate change are likely to have formidable effects⁹. These climatic evolutions will not fail to generate consequences among which: the drying up of lands, the loss of biodiversity, famine, migration, floods (loss of harvests and animal species), the silting up of rivers, the degradation of soils, erosion, etc¹⁰.

Awareness of the risks associated with climate change goes back a long way in Niger. The first National Adaptation Program of Action (NAPA) of 2006 listed all the extreme climate phenomena that Niger is facing due to climate change.

⁷ United Nations Environment Programme (UNEP), 2011. Climate change, migration and conflict in the Sahel, https://publications.iom.int/system/files/pdf/unep_sahel_fr.pdf, consultation date: September 20, 2021.

⁸ Eineddine Nouaceur, 2020. "The resumption of rains and the resurgence of floods in Sahelian West Africa", Physio-Geo [Online], Volume 15, <http://journals.openedition.org/physio-geo/10966>, consultation date: September 25, 2021

⁹ Postdam Institute for Climate, 2020. Climate Risk Profile: Niger; Germany, Federal Ministry for Economic Cooperation and Development GIZ, https://www.adaptationcommunity.net/wp-content/uploads/2021/02/GIZ_Climate-risk-profile-Niger_FR_final.pdf, consultation date: September 25, 2021

¹⁰ Republic of Niger, Office of the Prime Minister, SE/CNEDD, 2016. National Policy on Environment and Sustainable Development in Niger - 2016



Beneficiary of the degraded land restoration project, Agadez region, 2018 / Credit IOM Monica Chiriac

Box 2 : Main climate risks and populations most vulnerable to climate change in Niger

The most common extreme climatic phenomena in Niger are, in order of importance

- Rainfall deficits/droughts
- Floods;
- Violent winds;
- Extreme temperatures;
- Sand and/or dust storms.

Other factors indirectly related to extreme climatic events should also be taken into account: epidemics (cholera), crop pests (millet earworm, flowering insects, aphids, granivorous birds), bush fires, etc.

The communities and groups most vulnerable to climate variability and change are: farmers, herders, artisans, the elderly, youth, women, fishermen, and wood and straw harvesters.

The main adverse effects of these phenomena on the national economy in general and on the most vulnerable sectors in particular are:

- a decrease in agricultural production
- fodder deficit;
- the insufficiency of water points;
- the silting up of water points;
- the drop in the water table;
- the reduction in the surface area of forestry formations;
- the decrease in fish production;
- the decrease in biological diversity (disappearance of certain species, degradation of wildlife habitats);
- the increase in the rate of attack by certain diseases such as measles, meningitis, malaria and respiratory diseases;
- the formation of sand dunes.

Sources : République du Niger, 1998. Politique nationale en matière d'environnement et de développement durable au Niger (PNEDD) 1998 ; République du Niger, 2006, Programme d'Action National pour l'Adaptation (PANA) au changement climatique ; République du Niger, 2016. Politique nationale en matière d'environnement et de développement durable au Niger – 2016

In the Niger State of the Environment Report 2020, the main climate extremes identified are floods, droughts, sandstorms, temperature extremes and high winds. Floods and droughts are considered to have drastic and long-lasting impacts on agroforestry systems, one of the direct effects of which is the persistence of chronic grain deficits. Combined with anthropogenic actions, they contribute significantly to land degradation. This degradation is essentially attributable to activities related to agricultural production, overgrazing, wood exploitation (energy and service wood) and overexploitation of the soil. Its effects are accentuated by climatic hazards due to a rainfall characterized by a very high inter-annual variability accompanied by torrential rains and strong and violent winds that cause strong water and wind erosion, which plays a crucial role in land degradation. The latter goes hand in hand with increased competition for access to land in a context marked by land conflicts exacerbated by the phenomenon of land grabbing, which is a reality in Niger, particularly around cities and in pastoral and agro-pastoral areas.

As with land, wildlife resources are affected by natural hazards and anthropogenic pressures as well as wildlife protected areas. In addition to the harmful action of poaching and the depletion of natural areas, the effects of climate change contribute to threaten the survival of species, destroy their natural habitats, and reduce the wildlife capital of the country.

Despite its continental nature, Niger has significant water resources, mainly formed by the Niger River and its tributaries, Lake Chad, natural ponds, retention basins, etc. But this potential is not immune to human activity but also to climate change. Both contribute to the degradation of waterways, notably through silting, the invasion of aquatic plants, a decrease in flow, and even the drying up of certain water points. This is not without negative effects on agricultural production, livestock and fishing activities as well as on biodiversity.

With a weakly developed industrial fabric, Niger is a low emitter of greenhouse gases. The most important industrial nuisances are mainly linked to the exploitation of uranium and oil. Real environmental risks are linked to the treatment of waste from these industries, to the risks of degradation of natural landscapes and contamination of water tables, and to atmospheric pollution. Gold panning is also a real environmental threat. In the localities of Tillabéri, where the activity has recently expanded significantly, the damage caused by the use of chemicals and land degradation are enormous environmental challenges. An equally crucial challenge is the overwhelming predominance of biomass (wood energy and agricultural residues) for the energy needs of some of Niger's rural and urban households. This puts great pressure on the country's wood resources, which are also affected by the impact of climate change, particularly recurrent droughts. Natural hazards constitute a major threat to timber resources and their effects are multiplied by anthropogenic factors such as uncontrolled clearing, uncontrolled cutting, overgrazing, bush fires, urbanization, and ever-increasing land needs, a direct effect of galloping population growth and rapid urbanization.

Awareness of the need to combat climate change and promote sustainable development has been raised among Niger's public authorities. It has taken several forms: adoption of international commitments, ratification of international legal texts (conventions, treaties, agreements, etc.), inclusion of climate change and sustainable development in public policy documents, implementation of projects and programs to adapt to and mitigate climate change, combat desertification and restore degraded land, etc.

Niger has signed and ratified the key texts in the field of climate change at the international and African levels: United Nations Framework Convention on Climate Change, Convention on Biological Diversity, United Nations Convention to Combat Desertification, Kyoto Protocol, Paris Agreement, Libreville Declaration on Health and Environment, Luanda Declaration on the adaptation of the health sector to climate change, etc. Taking climate change into account is also stated in almost all of Niger's public policy reference documents, whether at the global level (Economic and Social Development Plan (PDES) 2017-2021; 3N Initiative Nigériens Nourish Nigériens,

etc.) or at the sectoral level (agriculture, livestock, industries, migration, etc.). For example, in the Economic and Social Development Plan (PDES) 2017-2021, it is stated that "adaptation to climate change is therefore today an imperative necessity and the most sustainable solution to this effect is that of integrating adaptation measures into economic and social development policies in order to reduce the vulnerability of populations to the negative impacts of climate change and to strengthen their resilience to extreme climatic phenomena."

The consideration of climate change has been strongly expressed in the adoption of reference documents in this area such as the development of the Sustainable Development and Climate Change Strategy (SDDCI) Niger 2035 as a long-term development framework; the development and adoption of a strategic framework for land management and restoration of degraded lands; the elaboration of the Nationally Determined Contribution (NDC) following the Paris Agreement (COP 21); the adoption of the National Policy on Environment and Sustainable Development in 2016; elaboration of various national communications on climate change, etc.

In almost all of these papers, the role of anthropogenic actions in environmental degradation and the adaptive practices of populations have been central. As a result, the impacts of climate change and environmental degradation on migration dynamics and vice versa have been highlighted, but the issues identified have not been underpinned by evidence that would allow for a detailed understanding of the intrinsic links between the three components of the MECC nexus, as this study has attempted to do using an appropriate methodological approach.

1.3. METHODOLOGICAL APPROACH FOR THE STUDY OF THE MECC NEXUS IN NIGER

The context and objectives of the study justified the adoption of a mixed-methods approach based on two complementary approaches: a quantitative survey and qualitative interviews. Several complementary techniques were used to better understand the links between migration, environment and climate change in the Nigerien context: a quantitative survey of households in rural areas, a questionnaire survey of internal migrants in Niamey, interviews with institutional and community actors, and individual semi-structured interviews and focus groups with local populations. The use of each of these tools was to be based on systematic integration of gender issues (consideration of women, youth, and vulnerable groups in the recruitment of respondents and key informants, inclusion of headings related to the singularities of gender dynamics, and disaggregation of the data collected by gender at the time of processing and analysis).

The research device set up for the field survey was characterized by its flexibility, diversity and adaptability, all of which were essential dimensions for conducting this study in a relatively limited amount of time but without sacrificing anything to the requirement of rigor.

Given the participatory approach favored for this study, participants in the scoping workshop held on March 30, 2021 in Niamey made a series of suggestions for improvement that we took into account in the choice of tools, the selection of survey sites, and the targeting of actors to be interviewed.

Table 1. Methodological improvements suggested by participants at the March 2021 scoping workshop

Dimensions	Propositions
Quantitative approaches	Stratified approach (men, women, youth) Generate data on internal and external migration of Nigeriens Consideration of secondary data on degraded areas and extent of degradation
Qualitative approaches	Field observations Perception (individual and collective) of the populations on the MECC nexus through semi-structured interviews Life stories
Data collection tools	Survey sheets Spatial Mapping
Sampling	Consider target areas in the eight regions
Conducting the actual field survey	Recruit investigators in the target areas where the surveys will take place
Consideration of gender issues	Women, youth

As far as possible, we capitalized on the suggestions made by participants at the scoping workshop for the final choices made on how to conduct the field surveys.

1.3.1 Selection of survey sites

Survey sites were selected with diversity, triangulation, depth, and comprehensiveness in mind. Categorization logics were used to highlight the diversity of experiences, issues and linkages in the MECC nexus. Because this study is based on a participatory and inclusive approach, an identification of potential study sites was conducted at the March 30, 2021 study scoping workshop in which participants were invited to suggest sites of inquiry based on their knowledge of the issues and challenges related to the MECC nexus and their own research experience.

Table 2. Survey sites proposed at the scoping workshop

Region (Proposed survey areas)	Brief description of risks and vulnerabilities related to environmental degradation and climate change	Stakeholders to be targeted for the field survey	Justification of the proposed choices
Niamey	Flooding Waste Degradation of natural resources	The migrants Technical services The local authorities The host population	Reception area
Agadez (Agadez and Arlit)	Environmental degradation Pollution	The host population The migrants The technical services	Reception area Departure area
Zinder (Kantché and Magaria)	Demographic pressure Land saturation Degradation of natural resources	The local population, The technical services The local authorities	Departure area
Tillabéri (Filingué, Ouallam, Balleyara, Gotey)	Gold panning, security Degradation of natural resources Security situation	The local population, The technical services The local authorities	Departure area
Maradi (Aguié, Gazaoua)	Land saturation Degradation of natural resources Security situation	The local population, The technical services The local authorities	Departure area
Dosso (Loga)	Degradation of natural resources Security situation	The local population, The technical services The local authorities	Departure area
Tahoua (Illéla, Keita, Bouza)	Degradation of natural resources Security situation	The local population, The technical services The local authorities	Departure area

We therefore took these proposals into account in the final choice of sites, as well as the objectives and expected results of the project Towards a better consideration of the link between migration, environment and climate change in public policies in Niger, which is the framework for this study. As this project is national in scope and aims to influence public policies so that they integrate the MECC nexus, we have made choices that allow us to cover a good part of Niger's territory while considering the security situation that prevents access to certain survey sites.

In addition, it was essential to choose research sites that would allow the singularities of Niger's major agro-ecological zones, the country's administrative areas (regions, departments, communes, villages, etc.), the socio-economic situations, the areas of residence (urban and rural), the degree of intensity of environmental challenges, the variability of climatic risks, the degree of dependence on natural resources, the nature of extreme climatic events (slow evolution and sudden onset), the characteristics of migrations (motives, trajectories, areas of departure and destination, the profiles of the migrants, internal mobility, international migrations, the forced or voluntary nature of mobility), etc.

Finally, the survey sites were selected based on an index of vulnerability to climate change and environmental degradation. The final validation of the survey sites was done in collaboration with the IOM and the study's monitoring committee, taking into account accessibility, vulnerability, the status of the site as a place of departure or reception of migrants, and security guidelines.

Table 3. Criteria for selection of study sites

Criteria related to the conceptual framework
Evidence of environmental degradation, effects of climate change
Increase over the past five to ten years in the frequency and severity of certain environmental events (e.g., floods, droughts, high winds, erosion, rising temperatures, etc.)
Diversity of production activities
Area considered a "hotspot" for climate change
Importance and variety of the forms of migratory dynamics: departure, transit or reception zone for migrants
Practical criteria
Geographical accessibility
Logistic conditions
Safety instructions
Duration of the survey

Taking into account these criteria, the means available and the time allocated for the field survey, the following survey locations were selected

Table 4. Locations selected for the field survey

Region	Selected site
Niamey	City of Niamey
Agadez	Agadez
Zinder	Kantché
	Magaria
Tillabéri	Fillingué
	Ouallam
Maradi	Aguié
	Gazaoua
Dosso	Loga
Tahoua	Keita
	Bouza

In terms of sampling, the method chosen for the quantitative survey of rural households was the two-stage stratified survey. The regions constitute the strata and within each region, the communes are drawn as primary units (PUs), with a uniform sampling rate of 50%. These secondary units are observed using the field sampling method. This consists of visiting locations that could accommodate the observation units. Within each commune, an average number of households (secondary units, SUs) was selected, proportional to the demographic size of the area. The rural household survey involved a total of 355 households. The snowball effect method was used to recruit the internal migrants targeted for the survey in Niamey. 147 migrants with different profiles were surveyed.

As for the qualitative survey, two types of sampling were favored in the choice of informants: actor sampling and geographic sampling, both of which were able to bring out the convergences and dissonances among the interviewees. In total, the study included 14 focus groups and 24 semi-structured individual interviews. To these data, we must add the interviews that the consultants had with resource persons at the institutional and community levels.

1.3.2 The quantitative component of the study

The quantitative part of the study was based on two methods: a questionnaire survey of rural households and a quantitative survey of internal migrants in Niamey.

1.3.2.1 The quantitative survey of rural households

This survey was therefore conducted among households in different localities in Niger. By choosing to study both places of origin and places of internal destination, we hoped to better understand the varied dynamics that structure MECC linkages in Niger. Moreover, this choice allowed us to triangulate and diversify the data while paying attention to the profiles of "mobile" and "immobile" populations in the face of climate change and environmental degradation. Given the difficulty of isolating factors related to climate change and environmental degradation from other political, economic, institutional, etc. factors, we focused on voluntary displacement, forced displacement, seasonal mobility, and internal and external mobility in the study localities.

The household survey focused on perceptions of climate change and environmental degradation, their causes, their evolution over time, their multiple consequences, their impact on productive activities, their impact on migration, and the resilience actions of populations. Ways and means to strengthen this resilience in the regions targeted by the study, notably through the promotion of innovative endogenous practices in terms of environmental protection (energy saving, innovative practices, productive activities, adapted technologies, endogenous know-how in terms of restoring degraded lands, agricultural and pastoral practices adapted to the new environmental and climatic context, etc.).

The household survey questionnaire was structured around the following headings: identification, living conditions, activities, use of natural resources, migration determinants, perceptions of environmental degradation and climate change, perceptions of their causes, impact of environmental upheavals on migration dynamics, profiles of those who leave, profile of those who stay, destination places, promotion of socio-economic activities sensitive to climate change, good practices in income-generating activities contributing to the climatic and environmental resilience of the territories, etc. The questionnaire was administered to the head of the household or the person most willing to answer the various questions while ensuring a gender balance.

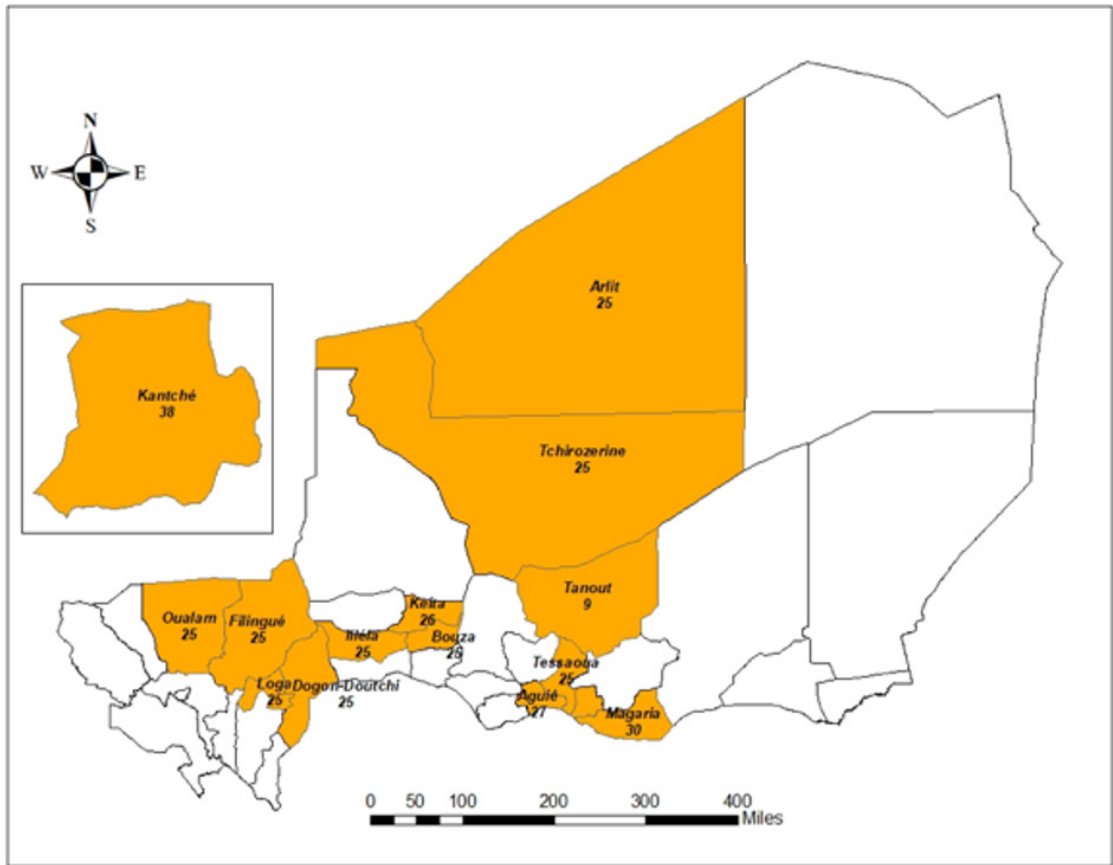
The rural household surveys were conducted in 14 departments in six regions of Niger. The table below shows the regions, communes and villages where the surveys were conducted and the number of questionnaires administered. For reasons related to IOM's security procedures, the Diffa region was the only region excluded from the survey.

Table 5 : Distribution of rural household questionnaire surveys

Region	Department	Commune	Village	Number of households surveyed
Maradi	Tessaoua	Tessaoua	Takaji	25
	Aguie	Aguie	Dan Kada	27
Subtotal				52
Tahoua	Keita	Keita	Gallé	26
	Bouza	Allakaï	Allakaï	25
	Ilella	Badaguichiri	Badaguichiri	25
Subtotal				76
Tillabéri	Filingué	Filingué	Gao	25
	Ouallam	Simiri	Simiri	25
Subtotal				50
Dosso	Loga	Loga	Sargagui	25
	Dogondoutchi	Kiéché	Garin Guero	25
Subtotal				50
Zinder	Tanout	Tanout	Bakatisira	17
	Magaria	Kwaya	Kwaya	30
	Kantché	Kantché	Kantché	30
Subtotal				77
Agadez	Agadez	Agadez	Tchirozerine	25
	Arlit	Arlit	Arlit	25
Subtotal				50
Grand total				355

The rural household survey was conducted by a team of twelve interviewers, seven men and five women. They all have at least a bachelor's degree and proven experience in rural surveys and in the electronic administration of questionnaires. They are essentially students in sociology, economics, law and journalism. The interviewers were divided into pairs in the survey regions. The interviewers were trained online on Tuesday, May 19, 2021 by the two study consultants and by the computer scientist-statistician specially recruited for the management of quantitative surveys (design of survey forms on ODK Collect, management of the database and data processing and analysis).

Map 3 : Sample allocation by department



The rural household survey was conducted during the period from May 20, 2021 to May 25, 2021. All households in the villages selected for the study were eligible for the survey. It was up to the interviewers to respect the sampling steps after the segmentation of the village in accordance with the instructions provided by the study's computer statistician. Thus, in each village, steps of two households were respected.

In accordance with practices in rural areas, at the level of each village, the village chief was the gateway to facilitate access and consent of households to be surveyed. This social legitimization is essential to ensure that the negotiation of entry into the field takes place without hindrance. After this first step, the first household to be surveyed was selected at random, after which the others were selected according to the defined steps. Once inside the household, the interviewer, equipped with a smartphone, administered the questionnaire in the language spoken by the respondent, who was either the head of the household or his wife. In general, an average of 25 households were surveyed in each community over three days. The national and international consultants respectively coordinated and supervised the field surveys, ensuring that the survey protocol and ethical requirements were scrupulously respected.

Box 3 : Conduct of the field survey in Kantché

"I arrived in Kantché on May 20, 2021. As soon as I arrived, following the recommendations I had received during the training and based on my experience of surveys in rural Niger, I went to the head of the neighborhood to present the purpose of my presence in his neighborhood by giving him information on the objectives of the study, the expected results, the implementation process and the main actors. The head of the district welcomed my approach and estimated that the results should be beneficial for his locality if projects allowing to improve the living conditions were to result from it. After these explanations, the head of the neighborhood put me in contact with his representative, who was to guide me in the choice of households to be surveyed.

For each household to be surveyed, the approach was almost the same: a customary greeting, identification of the person most likely to answer the questionnaire (the head of the household or his wife), detailed explanations about the study (objectives, actors in charge of implementation, expected results, and instructions on how to conduct the survey). I then administered the questionnaire by recording the answers on the form on my phone. The survey was conducted in the national language. The survey went well, and the respondents were very cooperative and willing to participate in the survey."

Source : excerpt from the field diary of the interviewer assigned to Kantché

Household surveys were conducted everywhere using this approach, which made it possible to avoid refusals to participate in the study, which is a relatively marginal phenomenon in rural areas. The populations, even though they may be weary of the endless parade of interviewers for studies that they feel are rarely followed by concrete actions contributing to the improvement of their living conditions, rarely decline requests for surveys. This is often not the case in urban areas.

1.3.2.2 The questionnaire survey of internal migrants in Niamey

The choice to conduct a quantitative survey of internal migrants in Niamey was imposed by the need to better understand the determinants of migration dynamics in the Nigerien capital. Niamey is the main place where internal migrants settle because of the processes of urbanization, occupation of space and the configuration of Niger's economy, which contribute to making its capital the most important place of socio-economic attraction and the site of settlement of populations seeking better living conditions in the capital. The capital is also the main place where economic, industrial, commercial, administrative, educational and health activities are concentrated in the country and thus has an attraction effect on the populations of the interior.

Understanding the role of environmental degradation and climate change in internal mobility was essential. The survey of internal migrants was thus to provide an opportunity to identify the relevant effects of these two factors on internal migration paths. To do this, a questionnaire structured around headings such as socio-demographic profile, perceptions of environmental degradation and climate change, motivations and migration trajectories, factors explaining internal mobility, living conditions in Niamey and finally links with the locality of origin was developed to obtain baseline data on the profile of internal migrants and on the impact of factors related to environmental degradation and climate change on their migration dynamics.

The surveys were conducted among 147 internal migrants established in Niamey and presenting different profiles and evolving in sectors such as petty trade, domestic help, catering, popular urban economy, etc. They were conducted during the period from May 18 to May 21, 2021 by a team of five interviewers, including three women. They were preceded by an online training session that took place on Saturday, May 15, 2021, and which focused on the instructions for administering the questionnaire, the criteria for selecting the people to be surveyed, and the handling of the ODK collect, which was also the medium used for this part of the study.

Box 4 : A typical survey in Niamey

"On Monday, May 18, 2021, I participated in a survey of internal migrants in Niamey Commune 2 district of Bonkaney. The subject of the survey was the link between climate change and migration. On Saturday, May 16, along with the other surveyors, we received online training on the survey. The training was provided by the international consultant, the national consultant and the computer statistician.

Despite the training, I was apprehensive about starting this survey because it was different from the rural surveys I had previously experienced. Indeed, in the villages where I was used to collecting data, access and contact with the respondents are often greatly facilitated by the chief, the marabout, or any other person who can ensure a leadership role in the targeted communities. Once the survey had begun, we could rely on word of mouth, which often preceded us to the rest of the villagers (which could save us the trouble of making introductions and greetings).

This time we had to deal with the "mistrust" of the townspeople; approaching a townsman and starting a conversation with him, when you are unknown to him, is not an easy thing. But when you have to go, you have to go. The credibility and reliability of the data collection is at stake. My first target was a group of young people from the Tahoua region. A region whose economy is essentially based on migration: both external and internal. As luck would have it, I found someone I knew. This facilitated my access. After administering a few questionnaires (I needed eight for the day) without much difficulty, I had to change communities to find other targets.

Wanting to diversify the data collection in terms of gender, since I had previously only interviewed men, I approached two young women from my neighborhood; both are domestic helpers. They were a little suspicious at the beginning of our interview and also annoyed by the many questions that were sometimes a little difficult for their intellectual level, so I had to use a lot of diplomacy to get the answers to my investigation. I also had to ask their bosses' permission to enter their workplace and talk to them while they were doing their housework. A laborious interview that was constantly interrupted by this or that task."

Source : field diary of an investigator in Niamey

The quantitative component of the MECC study was able to help generate a set of data that shed light on the links between migration, environment and climate change in Niger. For purposes related to the need for depth and richness of insight, it was also essential to rely on qualitative data.

1.3.3 The qualitative component of the study

The qualitative component of the study relied primarily on a combination of two research tools: focus groups and semi-structured individual interviews.

1.3.3.1 Focus group discussions

To gather data and information on climate change, environmental degradation and migration issues, focus group discussions (FGDs) were organized in different survey sites to further address the vulnerabilities related to climate change and environmental degradation, especially their impact on migration dynamics. They also helped to obtain baseline data on the challenges posed by environmental degradation and climate change, how they are perceived, what their consequences are, what their impacts are on migration at the local level, but also to identify practices to promote the resilience of populations.

In total, this study is based on 14 focus groups organized in the different villages that were selected to host the quantitative surveys of rural households. All of them were facilitated by the national consultant and supported by an interviewer who was responsible for taking notes and recording the discussions. The table below provides an overview of the focus groups conducted as part of this study.

Table 6 : Focus Group Discussion (FGD) Process

Locality Department Region	Participant Profiles	Details of the FGD process
Simiri Ouallam TILLABÉRI	12 women between the ages of 20 and 50	The FGD with the women of Simiri was conducted in the courtyard of the chief of the canton. He personally took charge of gathering the women for the realization of the FGD. One of the notables went around with us to find participants. The chief had mats set up under a shed which he used as an audience in case of a visit or meeting with the people. The women having settled down, the discussions started at 11:30 am. Having noticed that the women did not feel comfortable answering in the presence of the chief, we kindly asked him to withdraw. The women of Simiri then enthusiastically participated in the discussion.
Gao Filingué TILLABÉRI	5 men and 5 women	In this village, we had not found on our arrival, neither the chief, nor his assistant. However, in the shade of a large tamarind tree, there was a group of elderly people who were resting. After explaining the purpose of our visit, we asked them to help us gather 10 people, including 5 women. Using a female leader, the chief's representative managed to help us reach the size of the FGD after 30 minutes while it was already 4pm. The FGD started 10 minutes later and lasted about an hour. This FGD was very emotional as participants expressed their dismay at the ravages of land degradation and flooding that have increased over the past five years in their community.
Sargagui Loga DOSSO	10 men between the ages of 25 and 50	We arrived in Sargagui, a village not far from the department of Loga, around 8:00 am. The village chief received us and we presented him the objectives of our mission. He then called on one of his children and another person to help us gather the participants in the FGD, which targeted men. The men sat down under the village's palaver tree. The discussions lasted more than an hour. Very interested in the subject, the participants did not lack ideas when talking about climate change and its consequences in the village. Given the atmosphere of this meeting, other people joined the forum without being invited. The issue of migration was the most discussed topic.
Garin Guéro Dogon Douctchi DOSSO	Men 20 to 60 years old	In this village, the interviewers were not able to speak with women for cultural and religious reasons. When we wanted to conduct a FGD with women only, we were refused. However, a FGD with men was possible.

Alladab Tchirozerine AGADEZ	Women	The chief of the village of Alladab was informed of our visit by an investigator. He gathered about 30 women when we arrived. Once at the meeting place, we asked the village chief to help us choose 10 women in order to avoid frustration. He was able to make the choice and the FGD was held with ten women. Here, a good group dynamic was noted and the women were generous with information to describe the consequences of climate change and environmental changes on productive activities, their status and roles, and their lives. Some sadness could be seen on the faces of some women when the sub-theme of migration was addressed.
Pays-Bas Tchirozerine AGADEZ		In this area of Agadez, our team found about 15 people waiting for us. We did everything we could to reduce the number but it was difficult. We started the FGD. Unfortunately, we quickly realized that people did not participate because they did not master Hausa, the language used for the animation. We were forced to stop and reconstitute the group with speakers of the language. Despite some difficulties related to intrusions, the FGD went well.
Allakay Bouza TAHOUA	Men	The rural commune of Allakay was our first stop in the Tahoua region. The village chief received us and recommended that we meet the second chief. Each of us designated five men to participate in the FGD which took place in the hangar of the big mosque.
Gallé Keita TAHOUA	Men and women	We found the village chief in bed. Nevertheless, he received us, lying in his bed. He nevertheless made the effort to listen to us. When the theme was announced, he straightened up and explained to us how much the subject of climate change coupled with the degradation of the environment meant to him. He gave us the history of his village which was once, according to him, a "paradisiacal" place before drawing the dark picture caused by drought, lack of water and recurrent bad agricultural campaigns. He then asked his younger brother to gather five women and five men for the FGD. This took place in the courtyard of the health center. Both men and women participated in the discussions.

Roumbassa Illela TAHOUA	10 women	We stopped in the village at 4:00 p.m. on May 30 to prepare for the focus group scheduled for the next day. As soon as we started walking, we noticed a leadership conflict with the existence of two village chiefs: one very old and the second younger one whose status seemed to be contested. Faced with this situation, we preferred to withdraw and promise to return the next day while asking each party for permission to speak with the people they proposed. The next day in the afternoon at 3pm, fortunately, we found that the ground had been prepared for a FGD with ten women. After the usual greetings and the setting up of the FGD, the discussions started but after 35 minutes, we stopped because the respondents were not able to concentrate on the discussion themes in favor of digressions. Despite all the explanations we had given them, the participants persisted in believing that we were there to take a census on the basis of which kits, food or money would be distributed later. The field was therefore undermined by this idea. Therefore, we preferred to close the collection at this level.
Dan Kada Aguie MARADI	10 men	This village was strongly recommended to us by the departmental director of the environment in Aguié during our meeting with him. In Dan Kada, we met with the village chief, who immediately instructed us to gather ten men for the FGD. We had a very good turnout because the respondents were comfortable with the topics of discussion. They recounted in great detail their experience as seasonal migrants and the visible stigma of environmental degradation in their village and the upheaval it has caused in family relationships, the status of women, the hardening of living conditions, etc. As if to convince us of the relevance of the project, we asked them to tell us about their experience. As if to convince us of the relevance of their arguments, the participants insisted that we visit the classified forest near their village.
Maijirgui Tessaoua MARADI	5 men and 5 women	With the help of the village chief, we held an FGD with five women and five men. The discussions took place in the chief's courtyard. Despite the unfavorable setting, we were able to hold the meeting. Here, the men spoke more than the women, despite our best efforts to balance their voices. The discussions were quite informative and the participants were welcoming and attentive.
Tsaouni Kantché ZINDER	5 men 5 women	When we arrived in Tsaouni, we found the women mobilized for another meeting with an NGO. We were introduced to the chief by his son. The latter explained to us that an agent of an NGO wanted to talk to the women for 30 minutes and then we could form the discussion group. After the agent left, the chief helped us by calling on the women and men who could speak with ease on the subject. The meeting took place in a shed that serves as a meeting room in the chief's compound. The women as well as the men understood the theme and freely expressed their observations and experiences in relation to climate change, insisting on the links between environmental changes and migrations by taking the example of their village.

Kwaya Magaria ZINDER	Men	<p>Kwaya is located 34 km from Magaria. When we arrived in this village, we noticed that a wedding ceremony was taking place. After an hour's wait, we were finally able to meet with the mayor of the commune who took us to the village chief. After greetings and introductions, a representative of the chief helped us to form the group for the FGD. This group was composed of young and older people. This certainly explains the divergences noted during the discussion between the positions of the young and the older people on the reasons for migration, its consequences, the profiles and motivations of those who leave, etc.</p>
Bakatsira Tanout ZINDER	Several Men	<p>The department of Tanout is classified as a red zone for insecurity, but we went there nonetheless. Our meeting with the prefect of the department and the departmental directors of environment and agriculture encouraged us to choose the village of Bakatsira for the FGD. For security reasons, the prefect instructed the departmental directors to drive us to the village. The choice of this village is to allow us to see the infrastructure available for off-season work. Once in the village, we met with the village chief who received us warmly and helped us find people for the FGD, which took place in the hangar at the public square. The number of people present exceeded the number of ten that we had indicated. Despite explanations to reduce the number of people, most refused to withdraw. Despite this large number of participants, we had a very good FGD thanks to a good management of the group dynamics.</p>

Photo 1 : Focus group with women in Alladab, AGADEZ



The FGDs proved to be a highlight of the data collection phase because of the amount of information they provided. Everywhere, the participants showed a real interest in the theme of the study and painted a detailed picture of the climatic risks to which their localities are exposed, emphasizing their impact on living conditions and on their productive activities.

Photo 2 : Focus group with men in Dan Kada, Aguié, MARADI



Group discussions focused on the roles that environmental degradation and climate change play in the different types of mobility observed in the localities (transhumance, seasonal mobility, international migration, forced displacement during disasters such as floods, etc.), the profiles of "mobile" and "immobile" people, the

impacts of migration, etc. The people who participated in the FGDs were all the more generous with information because they felt that this study is a prelude to larger actions that could have a direct impact on their living conditions. Again, in an effort to cast the net as widely as possible in examining the linkages of the MECC nexus and to gain a more detailed understanding of the interactions, we also relied on individual semi-structured interviews in this study.

1.3.3.2 Individual semi-structured interviews

They were conducted to complement the household survey in order to address in greater depth the links between migration, the environment and climate change according to the perceptions and points of view of local populations, taking care to integrate a diversity of profiles in the choice of respondents. They also involved institutional actors, mainly resource persons at the level of deconcentrated and decentralized structures of the Nigerien State (prefects, departmental directors of the environment, agriculture, civil status, migration and refugees, local elected officials, etc.), customary authorities and members of civil society (leaders of women's groups and youth associations).

The interviews were conducted on the basis of an interview guide structured around the following headings: profile, experiences, constraints, activities, perceptions of climate change, consequences, links between climate change and migration, profiles of migrants, profile of those who stay, motives, migration strategies and destination places, links with the locality of origin, promotion of activities in the field of sustainable development, etc.

During the field survey, several interviews were conducted at the community, departmental and regional levels. In general, all the interviews were fruitful due to the availability of the respondents and their interest in the study's problem. We were supported by the prefects in making contact and appointments with the departmental directors.

The table below presents the different actors with whom we had an interview during the field survey phase

Table 7 : Stakeholders met during the individual semi-structured interviews

Department / Region	Stakeholders met
Tillabéri	Chief of the canton of Ouallam The chief of the village of Gao Director of the school complex of Gao The outgoing Mayor of the commune of Balleyara
Loga Dosso	Prefect Departmental Director of Civil Status, Migration and Refugees Departmental Director of Planning Leader of the women of Sargagui Chief of Sargagui village
Tahoua	Regional Director of Agriculture, Regional Director of Planning, Regional Director of the Environment Regional Director of Livestock Chief of the village of Gallé Chief of the village of Allakay Mayor of Keita
Aguié Maradi	Prefect Departmental Director of the Environment Chief of the village of Dan Kada
Tessaoua Maradi	Prefect Departmental Director of Civil Status, Migration and Refugees Departmental Director of the Environment Mayor of Tessaoua
Kantché Zinder	Prefect Mayor of Kantché Chief of the village of Tsouni
Tanout	Prefect Director of Environment Director of Agriculture
Zinder	Governor of the region President of the Regional Council and the Secretary General Sultan of Agadez Vice-Mayor and Secretary General Regional Council of Agadez Chief of the village of Alladab

The interviews with institutional and community actors are all the more important as the ultimate goal of this study is to strengthen the capacities of the main actors and institutions involved in migration and the environment in order to contribute to the development of public policies that are adapted to the realities and needs of the communities and oriented towards concrete action.

1.3.4 Processing and analysis of survey data

The questionnaires were collected on the interviewers' smartphones. The data was collected in real time on the database created on ODK. The data collected through the two questionnaires were analyzed using STATA. With this software, we were able to generate the most relevant data for the research, cross-reference the variables and thus report with evidence on the interactions between migration, environment and climate change in Niger.

The analysis of the data consisted of two parts: a descriptive part and an analytical part. The descriptive analysis of the qualitative variables was done with the frequency (proportion) and the 95% confidence interval and that of the quantitative variables with the mean, its confidence interval and the standard deviation. The analytical part of the analysis involved a bivariate analysis of the key indicators of the study with certain characteristics such as age, gender, main production activity, region, household characteristics, etc. A multivariate analysis was considered useful to measure the impacts of environmental degradation and climate change on migration dynamics. In addition, variables were cross-tabulated to provide evidence of the state of play of the MECC nexus in Niger, taking care to disaggregate variables according to region, area of residence, household socioeconomic characteristics, socio-geographic vulnerability, intensity of environmental constraints, climate risks, gender and generational inequalities, etc.

The qualitative interviews (individual and group) were recorded, ensuring the consent of the interviewees in each case. The interview data was then transcribed and subjected to a thematic analysis based on the following four themes: perceptions of climate change and environmental degradation, their impacts on production activities and living conditions, adaptation strategies in the face of climate change and environmental degradation, the impact of the ECC binomial on migration dynamics, and measures to be considered from the perspective of promoting the strengthening of people's resilience based on their local know-how and innovative endogenous practices. Significant excerpts were selected from the verbatim to illustrate, support and reinforce the argument at the time of interpretation and writing.

1.3.5 Difficulties encountered and methods of resolving them

This study went well overall. Nevertheless, some difficulties can be listed. In particular, we can mention:

- The need to translate the questionnaire and interview guides into local languages (Hausa, Zarma-Songhai). However, our data collection tools are full of learned terms for which it is difficult to find equivalents in the national language: climate change, sustainable development, resilience, etc. The understanding of these terms by the respondent was thus conditioned to the explanation provided by the interviewer and to the latter's fluency in the language used for the survey. This resulted in a longer administration of the questionnaire and a possible influence on the respondents' answers. The interviewers had to make sure that the respondent understood the meaning of the questions before writing down the answer;
- The "fatalism" of the respondents "for whom any change whatsoever can only come from God. This led them to confine themselves to short explanations even when they were asked to go into more detail. Other respondents, who were more protesting, thought that the focus groups would provide a forum for socio-political demands, in particular to complain about the management of their locality and the many difficulties that beset them on a daily basis. Finally,

some respondents who think that the survey precedes the arrival of material aid blacken the picture and present their economic situation as "most urgent";

- the difficulties in setting up the optimal size of the focus groups in certain localities and, in others, the impossibility of holding focus groups only with women for reasons that are essentially religious and cultural;
- The size of the study area to be covered and the distance between the survey zones;
- The exclusion of the Diffa region from the survey areas due to security regulations, even though it is a relevant location for studying the links of the MECC nexus in Niger, particularly around the Lake Chad basin, which is a zone that is particularly exposed to the effects of climate change;
- The short duration of the time allocated to the field survey combined with the limited means made available for the field survey. This did not allow for a higher sample size, especially for quantitative surveys, which would have ensured a higher level of representativeness;
- The context of the handover of services at the level of the town halls, which meant that the planned interviews with certain local elected officials could not take place.

All these difficulties did not affect the rigor that prevailed throughout the data collection process. They were overcome mainly thanks to

- the leadership, initiative, experience and knowledge of the field by the national consultant and the commitment of the entire survey team
- Adequate coordination and supervision of the field surveys;
- The responsiveness of the project team to difficulties and unforeseen events. The diligence and sense of anticipation of the project manager made it possible to remove any bureaucratic red tape that might have slowed down the process of carrying out the field phase;
- the support of the staff of the IOM sub-offices located in the localities concerned by the field survey for the preparation of the survey;
- the availability of a full-time computer scientist-statistician during all phases of the quantitative survey;
- Good preparation of the data collection phase through the establishment of contacts with administrative, territorial and customary authorities able to facilitate the fieldwork;
- The availability of local people, especially in rural areas. Even if we arrived unannounced, after having established a few contacts, it was easy to have enough participants to organize a focus group. With the exception of a few localities where religious reasons were given as a reason for not being able to organize a focus group with women only, there were almost no refusals to participate. Everywhere, people were available as soon as they were asked and were very generous with information to describe, illustrate, complain, evoke the past nostalgically, worry

about the future, regarding the manifestations of climate change and the consequences of environmental degradation and especially to illustrate the links of the MECC nexus in their locality.

Finally, it should be noted that the dedication and commitment of the survey staff in Niamey and in the rural areas contributed greatly to the results we were able to achieve in this study.



PART TWO

RESULTS OF THE MECC NEXUS STUDY IN NIGER



Rescue operations for stranded migrants in the Assamaka desert, 2019 / Credit IOM

This second part of the study is devoted to the presentation and analysis of the results of the double survey conducted in both urban and rural areas. To do so, we highlight how environmental degradation and climate change are perceived by rural households, the roles they attribute to them in the weakening of socio-economic systems and consequently in the undermining of social, economic and productive bases in the villages. What is noteworthy is the propensity of the populations to dwell on what could be called "empirical markers" to portray climate change. This is to be understood as a plurality of changes perceptible to them in ecosystems, lifestyles, production practices, etc., which have the direct consequence of contributing to a more marked hardening of living conditions.

"Climate change is uncertainty in everything!" This expression, which we heard at almost every focus group, symbolizes the dramatic consequences of events that are usually associated with climate change in the Nigerien context: disruption of rainfall cycles, recurrence of extreme events such as floods, deforestation, loss of land, dwindling pastoral resources, etc. The populations used anecdotes, examples and comparisons to explain and, above all, to illustrate all the upheavals that they attribute to environmental degradation and climate change.

The clear break that the interviewees decipher between the times, the landscapes, the lush nature, the high yields of the past and the desolate images of today, which show a devastated nature, denuded lands, the disappearance of plant and animal species, the advance of the desert, destructive violent winds, devastating floods, etc. are, according to them, so many obvious signs of climate change. Climate change, combined with environmental degradation, is severely testing the resilience of populations. The direct effect is an intensification of migration, which today affects all social strata, takes on a variety of forms, and is mostly directed towards urban centers, especially Niamey. While migration is at the heart of people's coping strategies, the social cost of migration is high, depending on the population, in terms of the weakening of marital ties and family systems.

The populations are implementing actions to mitigate the ravages caused by environmental degradation but also to prevent the damage generated by climate change. These are therefore initiatives that should be supported in order to strengthen their resilience.

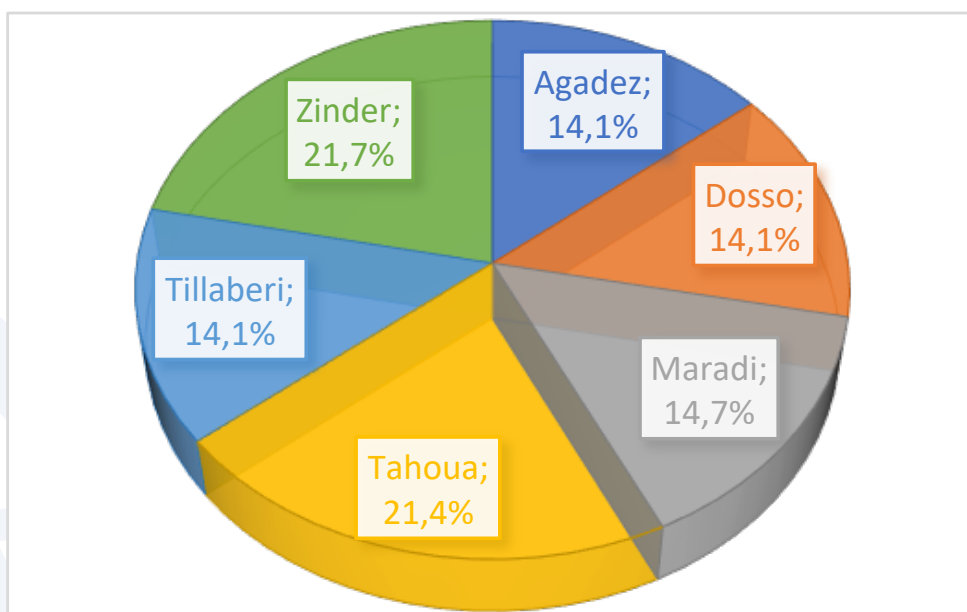
2.1. "CLIMATE CHANGE IS WIDESPREAD DISRUPTION"! MECC NEXUS LINKS TO THE PRISM OF RURAL HOUSEHOLD PERCEPTIONS IN NIGER

Rural areas are usually considered to be highly affected by climate change and environmental degradation. It was important in this study to test this assertion in rural Niger. The data used in this chapter come from a questionnaire administered to 355 rural households in six regions of the country, as well as from the analysis of verbatim from focus groups and semi-structured individual interviews.

2.1.1 Socio-demographic profiles of households

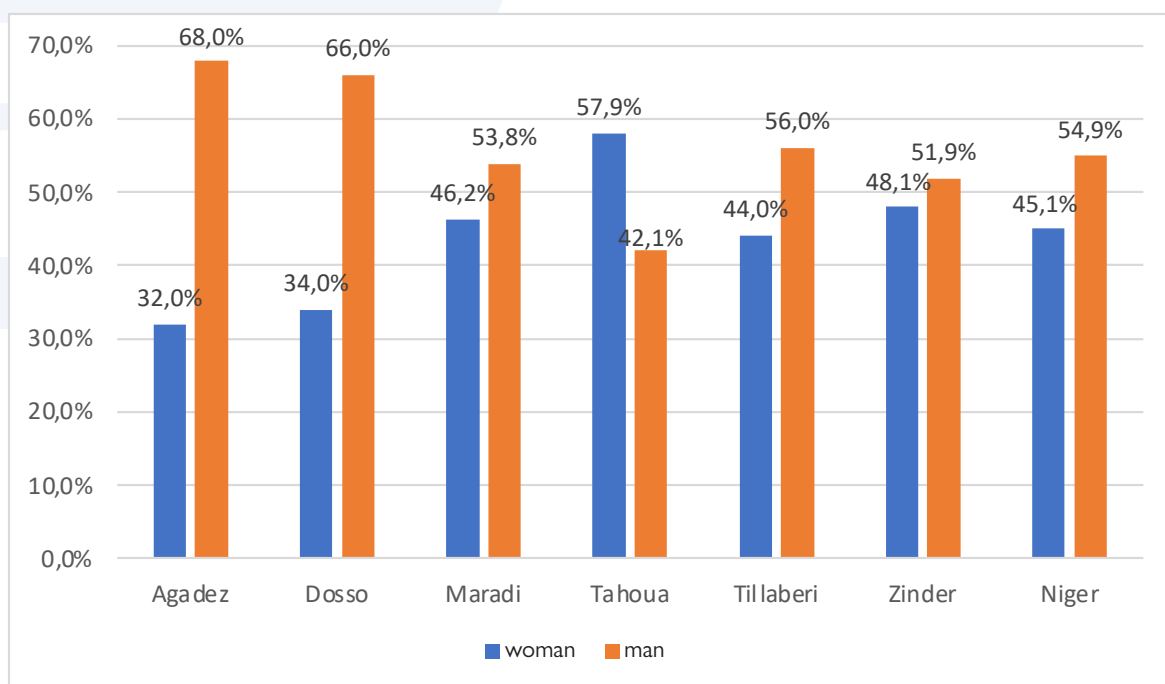
The survey covered all six regions of Niger. Out of a sample of 355 households surveyed, the regions of Zinder and Tahoua are the most represented with 21.7% and 21.4% respectively. They are followed by the Maradi region with 14.7% and slightly less the regions of Agadez, Dosso and Tillabéri which each represent 14.1% of the sample.

Graph 1 : Distribution of surveyed households by region



The overall sample of respondents is dominated by men with a percentage of 54.9%. This male predominance is found in almost all regions, with a greater difference noted in Agadez and Dosso with 68% and 66% of men respectively. Tahoua, on the other hand, is an exception with 57.9% of respondents being female.

Graph 2 : Distribution of respondents by gender

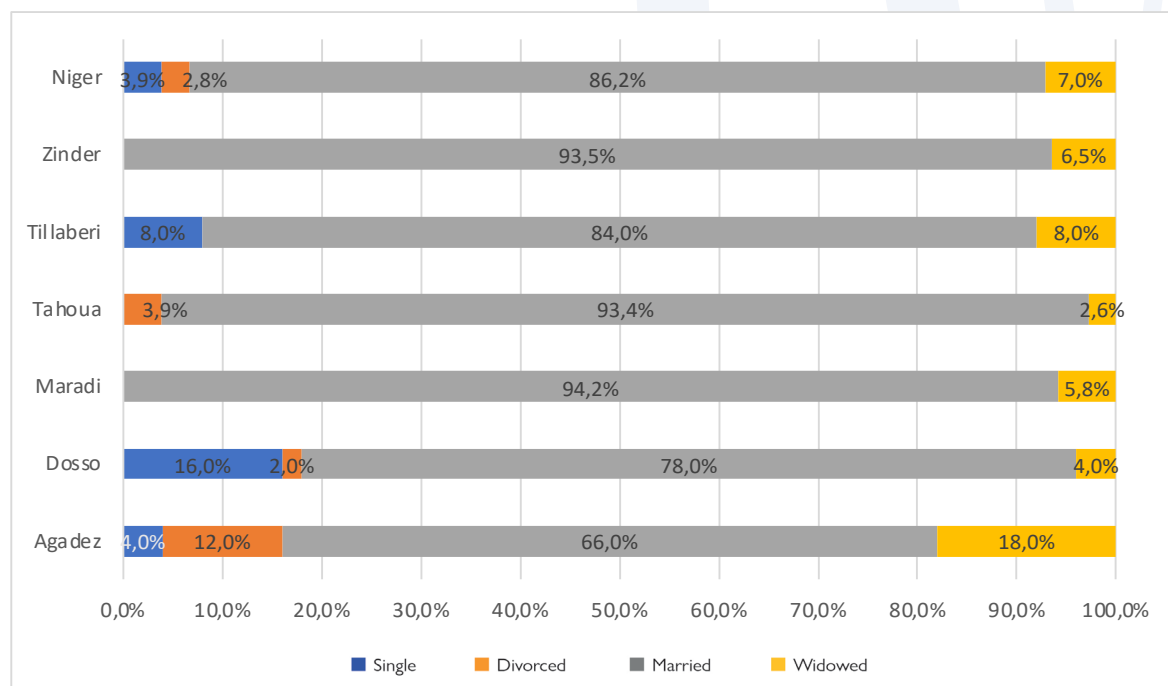


As indicated in the title of the study, the gender dimension is central to the analysis of the linkages of the MECC nexus. This led us to redouble our efforts to focus on female targets in the household survey. Our efforts to ensure that the questionnaire was administered to as many women as possible were not always successful. Due to cultural and religious practices, the majority of the survey staff was directed to men. Men are the main heads of households in rural areas, and they are the ones to whom foreigners are referred, especially if they have come for the survey.

Nevertheless, for a survey in a rural area, achieving a 45.1% rate of female respondents is satisfactory. This makes it possible to achieve diversity in the responses. This situation is likely to hide the gender dimension that we have placed at the heart of this study. In order to better highlight the gender dimension, we favored recruiting young people and women, particularly during the focus groups, in order to have reference data on the impacts of environmental degradation and climate change on the productive activities of vulnerable groups, as well as the singularities of their adaptive practices, particularly those related to migration.

The sample of respondents is essentially composed of married individuals who occupy a share of 86.2%. This dominance of married individuals is found in all the regions of the study. For the regions of Zinder and Maradi, only married and widowed individuals are present in the sample. Widowers represent 7% of the sample and are more represented in the Agadez region with 18%. Single people represent only 3.9% of the sample and are more represented in Dosso with a proportion of 16%. Divorcees are the least present in the sample with 2.8% and are more represented in Agadez with 12% of respondents.

Graph 3 : Marital status of respondents

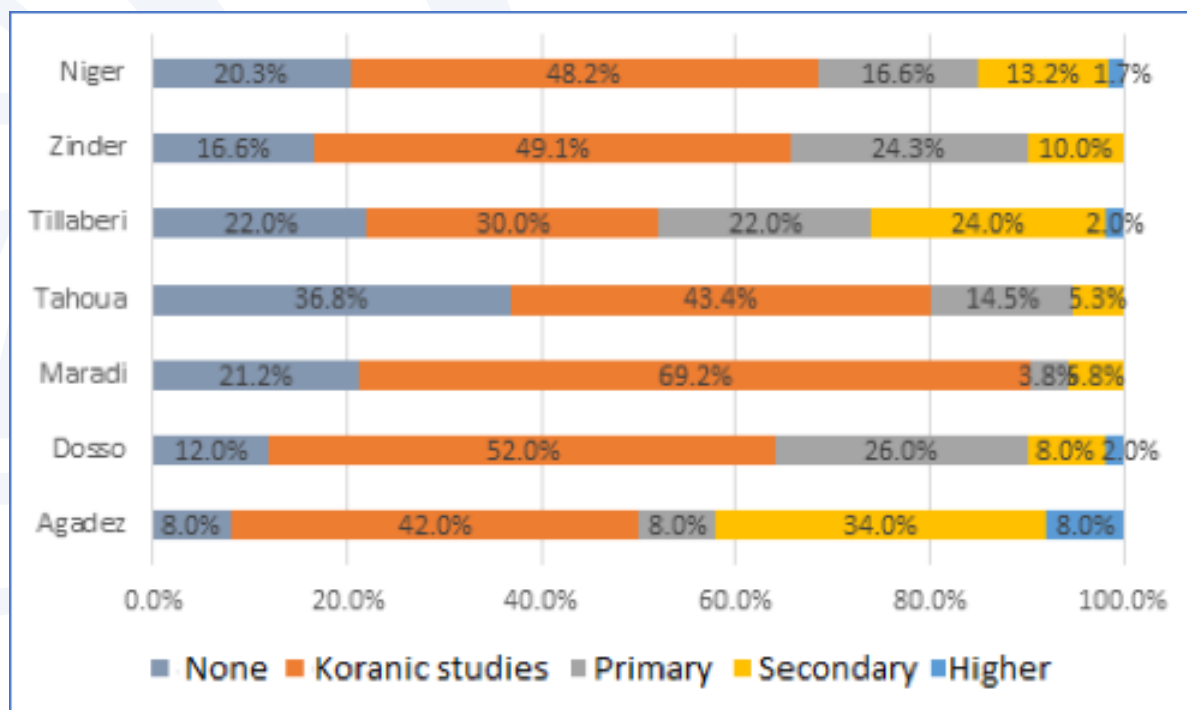


The majority of those surveyed (48.2%) have only completed quranic studies. This trend is the same in all regions, with a higher concentration in Maradi (69.2%) and Dosso (52%), where more than half of those surveyed have only studied the Koran.

It should be noted that those who have no level of education, i.e., have not attended either Koranic or French school, have a significant share of the sample, representing one fifth. They are more represented in Tahoua with a proportion of 36.8%.

As for the French school, the primary level represents 16.6% of the sample and is more represented in the regions of Dosso and Zinder with 26% and 24.3% respectively. As for the secondary level, it represents 13.2% of the sample and is more frequent in Agadez with 34% of respondents. Finally, the higher level is very poorly represented in the sample with only 1.7% of respondents. It is also more frequent in Agadez with 8% of respondents in the region.

Graph 4 : Educational level of respondents



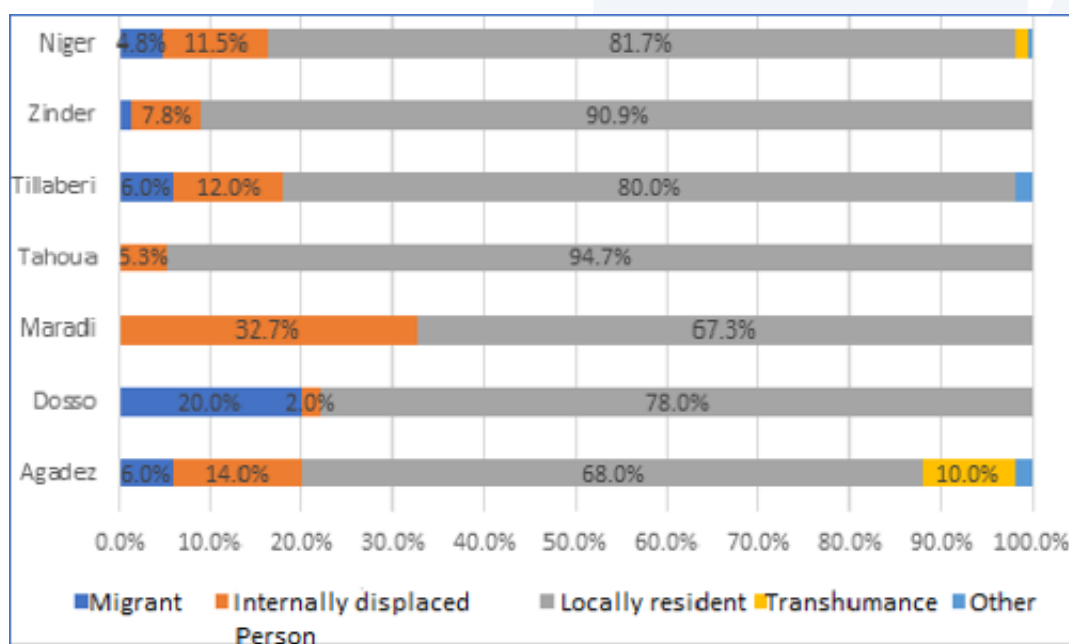
Such a distribution of results concerning the level of education illustrates a situation of widespread illiteracy in rural areas. It highlights the challenges of access to schooling in rural areas where many people remain excluded from the school system, especially for the generations most represented in the sample. Substantial efforts have been made over the last few decades by the Nigerien authorities, but the gap to be bridged is still considerable, not to mention the negative representations associated with the school system in social circles that are strongly attached to the Koranic education system. The prevalence of this teaching model is an element to be taken into consideration in the analysis of perceptions of the factors that explain climate change.

As for the professional category, the sample is mainly made up of farmers who represent 46%, followed by housewives and shopkeepers with 19% and 16% respectively. Farmers are more common in all regions, except Tillabéri and Agadez, where they represent 26% and 16% respectively. In the Agadez region, it is the beginners who are the most represented with 34%, while in the Tillabéri region, it is the housewives who are the most represented with 30% of respondents. It should be noted that it is in the Agadez region that we find the most employed respondents (public and private sector) with 16%.

The term housewives, in the context of surveys in African countries, refers to women defined by the preponderance of domestic activities carried out within the household, but which conceals the extent of the work carried out in other areas such as agriculture, livestock and the processing of agricultural products. This term is therefore not fertile enough to account for the multiple activities of women. It can be seen as a way of confining women to a rather simplistic "professional assignment" because women in rural areas are never solely housewives, even if they tend to define themselves as such, especially when faced with interviewers who are unable to show the subtlety needed to propose choices that are more in line with women's professional reality.

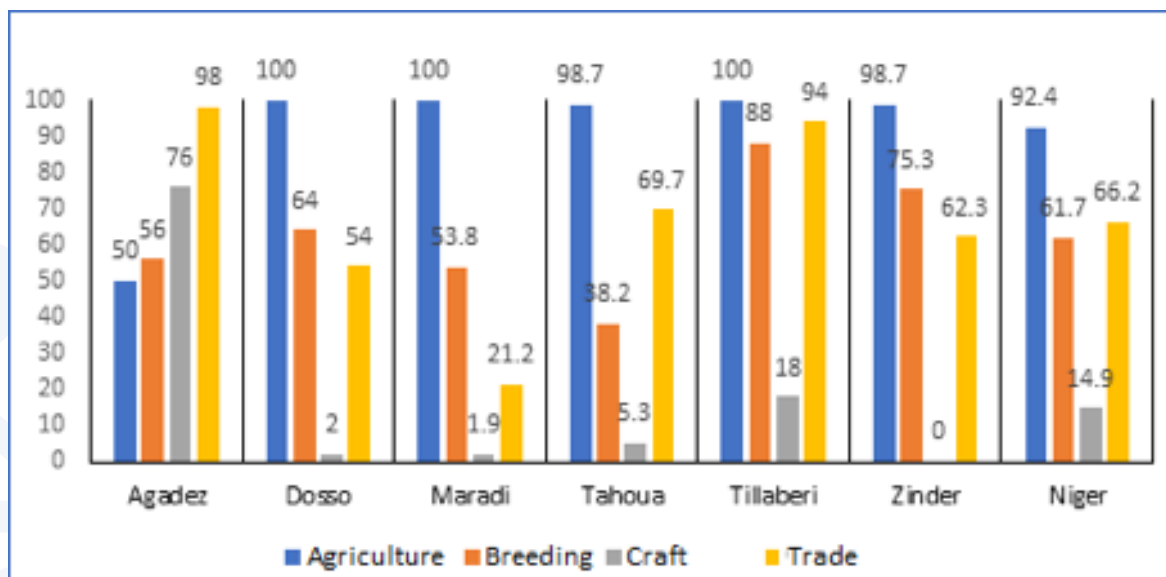
Overall, the majority of respondents are local residents, four out of five. This is consistent across all regions of the study. Internally displaced persons represent 11.5% of the sample and are more frequent in the Maradi region with a proportion of 32.7%. Migrants are more numerous in Dosso, where they represent one-fifth of the sample in the region. Transhumants are more common in Agadez, with 10% of respondents.

Graph 5 : Migration status of those surveyed



Overall, the main activity of the population is agriculture according to 92.4% of respondents. This proportion of the agricultural sector is found in all regions, except Agadez, which has a proportion of 98% for trade. It should also be noted that livestock breeding and trade are important activities in all regions, with respective rates of 61.7% and 66.2%. Handicrafts, which is less practiced overall with 15%, is the second main activity in Agadez with a rate of 76% of respondents.

Graph 6: Main socio-economic activities by region



This overview of some of the socio-demographic characteristics of the people surveyed in the 14 departments of Niger was intended to provide some basic information that would later allow for a better understanding of the socio-cultural roots of social representations of climate change and environmental degradation, their impacts and the resilience practices of the populations, and the role of mobility.

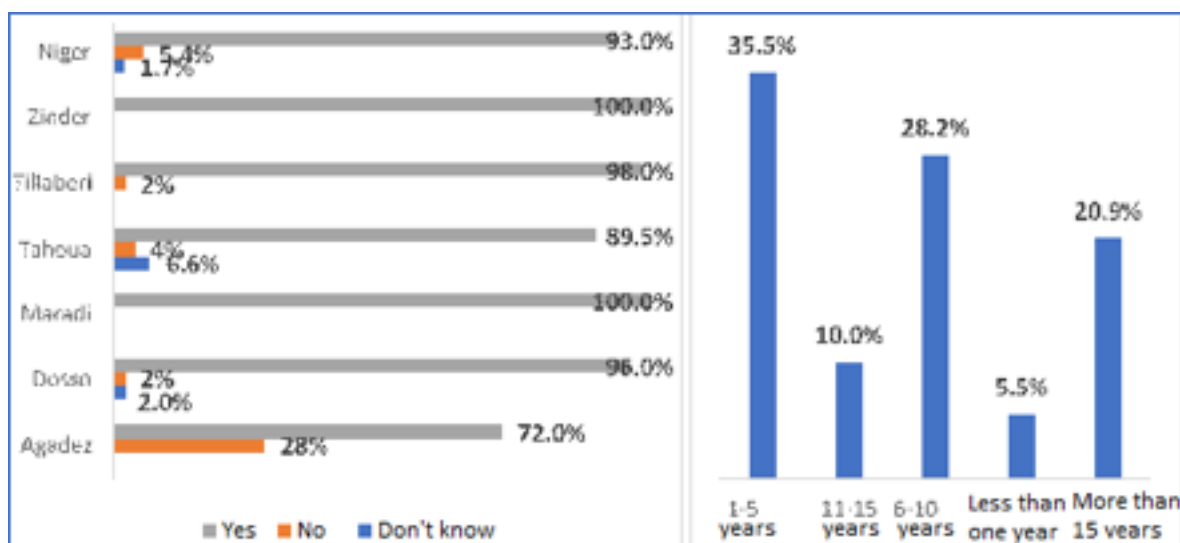
2.1.2 Representations, discourses and practices about environmental change

An important section of the questionnaire focused on rural households' perceptions of environmental changes in their locality of residence, as well as their representations of climate change and environmental degradation, their manifestations and consequences. The quantitative data was complemented by the analysis of individual and group interviews that provide a plurality of indicators of the transformations that the populations retain as "empirical markers" of climate change.

A strong majority of respondents stated that they had noticed changes in their environment, 93%. This trend is confirmed in all regions where at least seven out of ten respondents have noticed these changes. Moreover, in the regions of Maradi and Zinder, all of the individuals surveyed noticed changes in their environment.

The environmental changes are recent, since 63.7% of respondents have noticed them in the last ten years. Indeed, 35.5% said they had noticed them in the last five years, while 28.2% had noticed them between 6 and 10 years ago. However, one in five respondents say they noticed these changes more than 15 years ago.

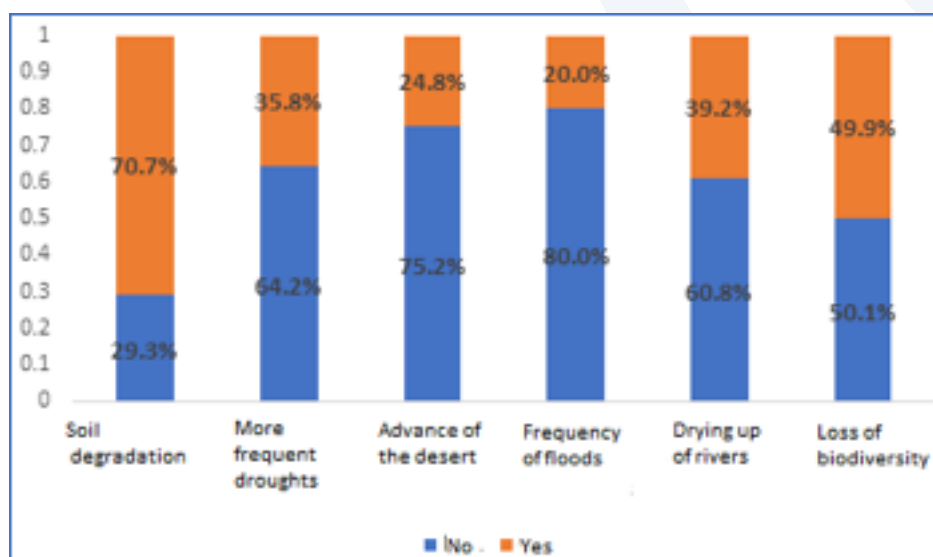
Graph 7 : Observation of environmental changes and duration of findings



After having established the reality of environmental change, it was important to look at what the term means to the populations surveyed, the multiple variations of environmental change and their perceptions of the daily repercussions of the main changes identified. An important section of the questionnaire was used to collect the characteristics of environmental changes.

According to the responses obtained, we note that soil degradation, loss of biodiversity, lack of water and recurrent droughts are the most significant environmental changes for the populations. Indeed, the main characteristics of environmental changes are soil degradation (70.7%) and loss of diversity (49.9%). They are followed by the drying up of rivers and drought with 39.2% and 35.8% respectively. However, one fifth of the respondents mentioned the frequency of floods and one quarter reported the advance of the desert.

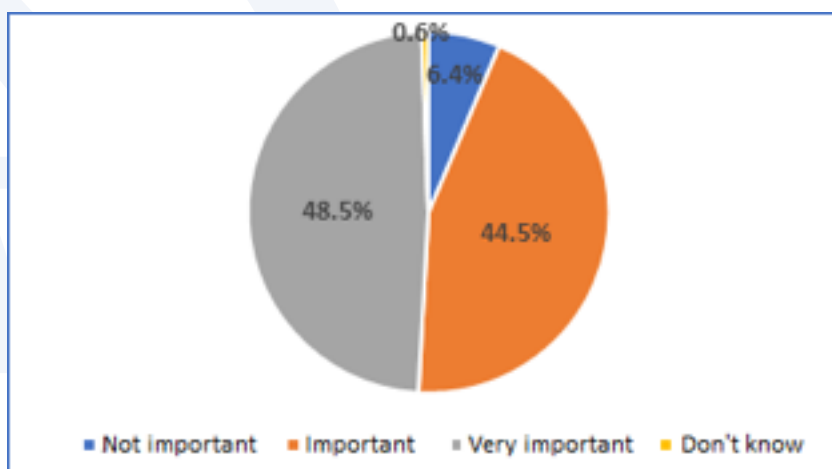
Graph 8 : Characteristics of Environmental Change



The characteristics indicated by the respondents regarding the nature of the changes that they consider to be the most significant to them are generally similar to those highlighted to account for the manifestations of climate change in Niger: floods, the advance of the desert, droughts, the drying up of waterways, and the loss of biodiversity and land degradation.

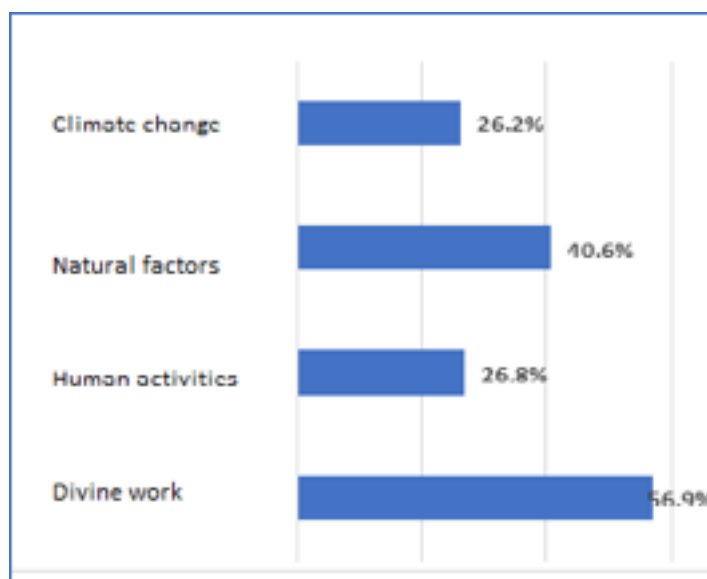
As far as the extent of environmental change is concerned, the seriousness of the problem is noted everywhere. Indeed, 48.5% of respondents think that the extent of environmental change is very important. Moreover, 44.5% of the sample affirm that the magnitude is important. On the other hand, only 6.4% of the respondents attest that the magnitude of environmental changes is not very important.

Graph 9 : Extent of Environmental Change



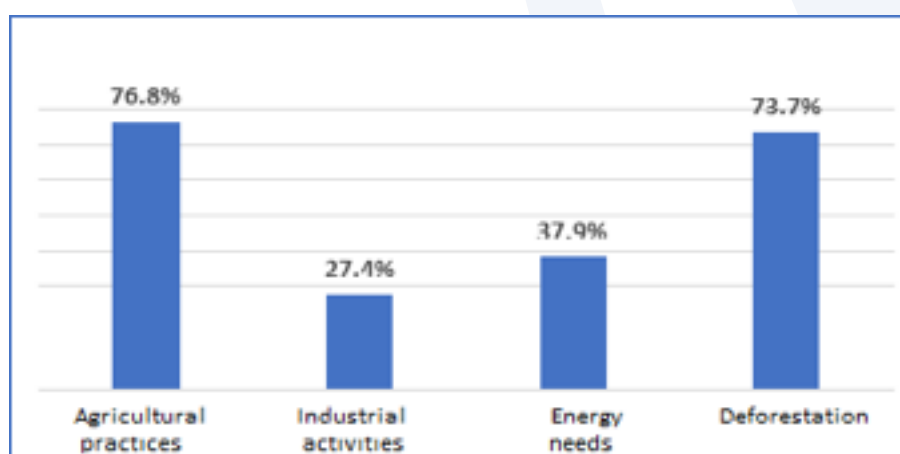
When asked about the causes of environmental changes, the populations overwhelmingly considered that they are the result of God's work, which is the most cited modality by the respondents with a proportion of 56.9%. It is followed by natural factors, which are highlighted by 40.6% of the sample. Finally, human activities and climate change are the least mentioned with 26.8% and 26.2% of respondents respectively.

Graph 10 : Cause of environmental changes



With regard more specifically to human causes, agricultural practices and deforestation are the main causes with proportions of 76.8% and 73.7% respectively. However, 37.9% of respondents mention energy needs, while 27.4% mention industrial activities.

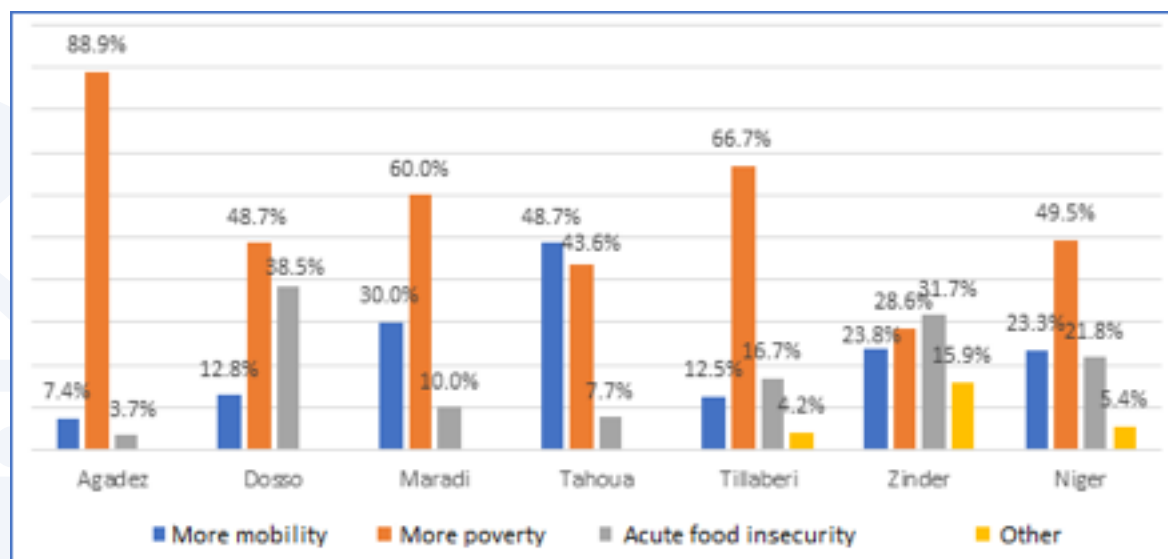
Graph 11 : Anthropogenic causes of environmental change



Environmental changes are perceived as being declined in environmental problems of several natures but having for common denominator their direct incidences on the living conditions and on the productive activities of the populations. Overall, almost half of the individuals surveyed think that the main consequence of environmental change is an increase in poverty, i.e. the majority with 49.5%. This opinion is shared in all regions except for Tahoua, where most respondents consider that the major consequence of these changes is an increase in population mobility (48.7%). It should also be noted that, in this region, 43.6% of respondents mentioned an increase in

poverty. Food insecurity was mentioned by only 21.8% of the respondents in the sample. However, it was raised more as a consequence in the Dosso region with 38.5% of respondents.

Graph 12 : Consequences of environmental changes

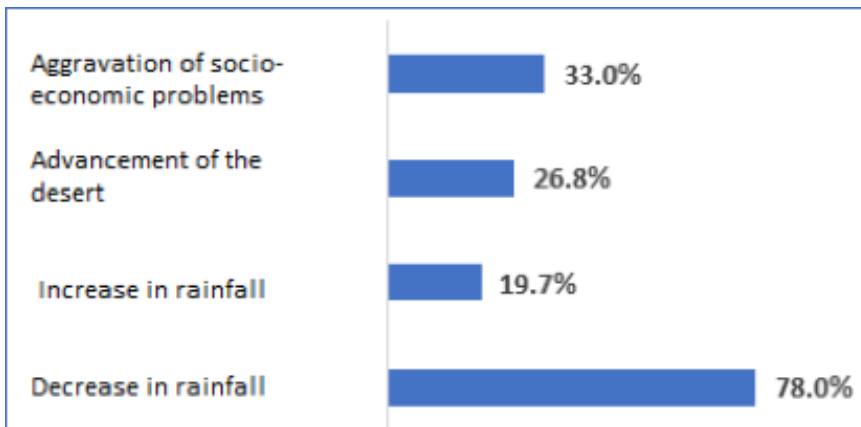


As noted above, climate change was identified as an important cause of environmental change. In order to remain at the heart of the study, especially with a view to deciphering the links between the environment and climate change, it was important to examine in greater depth the dimension related to climate change in the questionnaire. This was done in order to examine the understanding of climate change by the populations surveyed, the definition they gave of it, the realities to which it refers, its manifestations, its causes, its consequences, etc.

2.1.3 Climate change in rural Niger: multiple declinations of a crucial problem

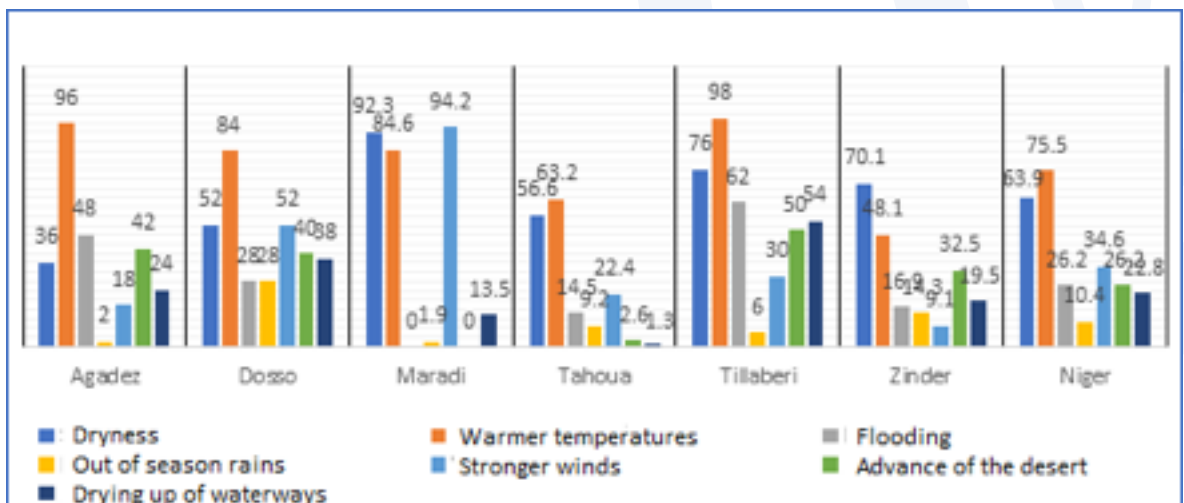
Most respondents equated climate change with a decrease in rainfall (78%). However, 33% characterized it as an increase in socio-economic problems, 26.8% as an advance of the desert and 19.7% as an increase in rainfall.

Graph 13 : Perception of climate change



Respondents also identified climate events that further highlight the reality of climate change. Overall, the three most frequent climatic events are: rising temperatures (75.5%), drought (63.9%) and violent winds (34.6%). This trend is the same in the regions of Dosso, Tahoua and Maradi. In the regions of Agadez and Tillabéri, in addition to drought and rising temperatures, flooding was mentioned by 48% and 62% of respondents respectively. As for the advancing desert, it was noted more in the regions of Tillabéri (50%), Dosso (40%) and Agadez (42%).

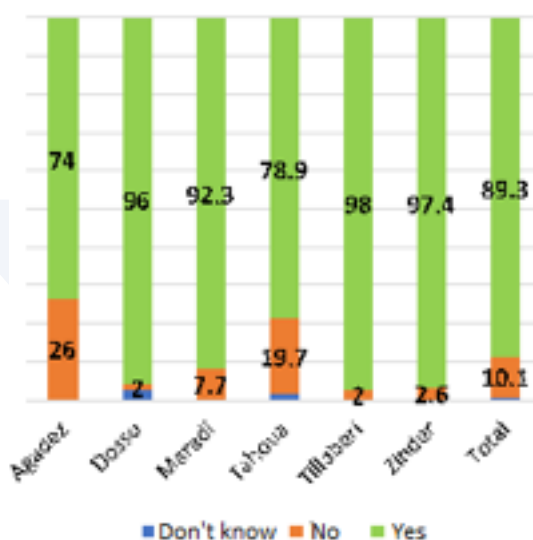
Graph 14 : Variability in perception of climate events by region



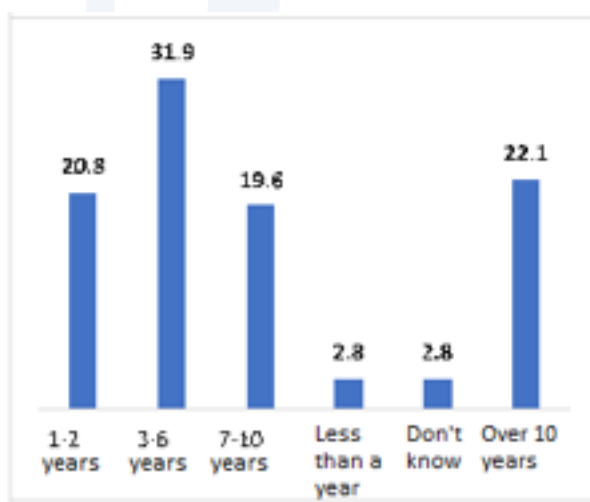
If there are two areas where climate change is strongly expressed in the eyes of the people, it is rainfall and temperature.

Almost all respondents noted changes in rainfall, nearly nine out of ten individuals. This trend was consistent across all regions, where the vast majority made this observation. Moreover, most of them have noticed these changes during the last ten years (72.3%). However, 22.1% of respondents said they had noticed them more than ten years ago.

Graph 15 : Observed changes in rainfall

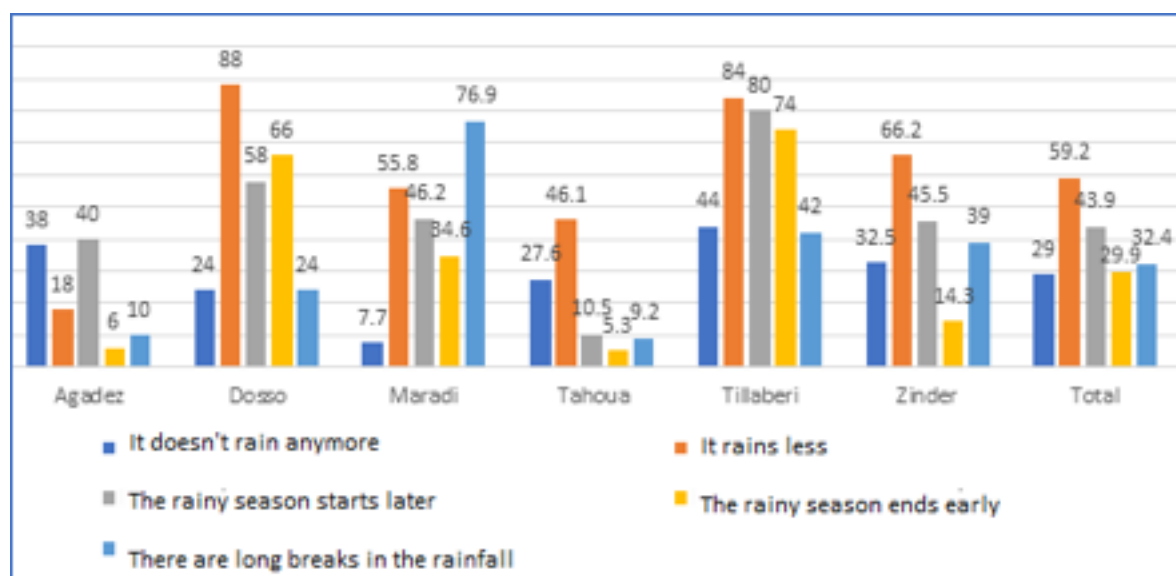


Graph 16 : Duration of rainfall change



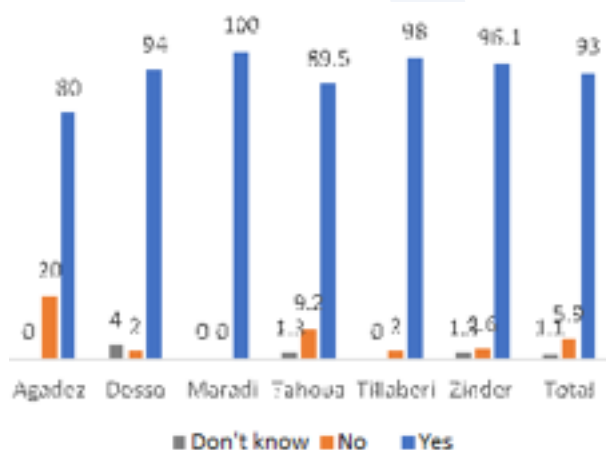
Overall, nearly six out of ten respondents say that the major change is that it rains less. This opinion is shared in Dosso (88%), Tillabéri (84%), Zinder (66.2%), and Tahoua (46.1%) regions. Second, 44% of respondents indicated that the rainy season starts later. This proportion is higher in Tillabéri, Dosso and Maradi with values of 80%, 58% and 46.2% respectively. It should be noted that in some regions, the rainy season ends early. This is the case in Dosso and Tillabéri, with proportions of 66% and 74% respectively.

Graph 17 : Major changes in rainfall

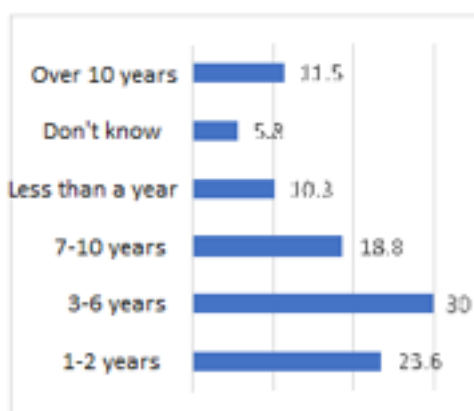


Overall, almost all respondents saw changes in the weather (93%). This trend is consistent across all regions. However, more than seven out of ten respondents say they have seen these changes in the past ten years.

Graph 18 : Observation of change in temperature

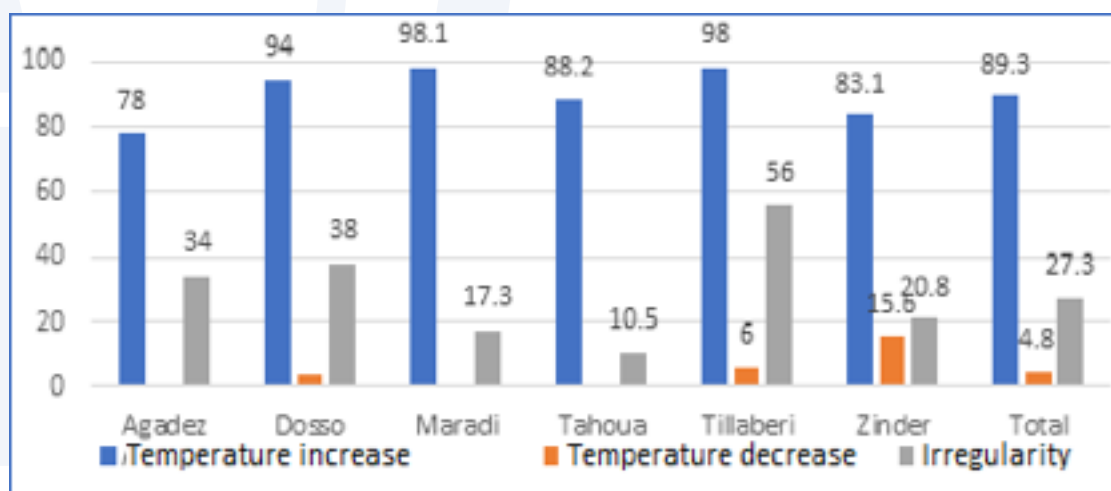


Graph 19 : Duration of the change in temperature



Regarding the characteristics of the changes, the respondents mainly emphasized the increase in temperature, nine out of ten individuals interviewed. This opinion is shared in all regions of the study. On the other hand, 2.3% of respondents mentioned irregularity in the temperature. This proportion is higher in Dosso with 38%.

Graph 20 : Characteristics of temperature changes



It should be noted that the households targeted in this survey are located in rural area of Niger. As mentioned above, the survey was conducted among people with a low level of education, for whom understanding the key terms of the study depended heavily on the explanations provided by the interviewer in the language used for the survey. Of note is the propensity of respondents to refer to perceptible changes in their living conditions and their immediate environment as a result of what they consider to be climate change. For this reason, we felt it was important to supplement these quantitative results with discursive elements drawn from the qualitative interviews. These are replete with signs presented as clear manifestations of climate change.

The way in which the respondents describe the evolution of the impacts of climate change shows an awareness of its magnitude, but above all a vision that shows an inclination to "embellish" the past, to characterize it perhaps in an idyllic way, and rather to depict today's environmental conditions in more negative terms. These are thus seen as key factors in the many constraints faced by rural households, foremost among them poverty. In the eyes of the population, climate change is therefore a "reality" to which they are exposed on a daily basis. This situation reveals the gap between the environmental context of today and that of the past. Climate change is crystallized in a series of "empirical markers" with "devastating consequences". These are more intense heat waves, more destructive floods, disruption of rainfall cycles, diminishing forage resources, degrading and less productive land, damaging winds and disappearing plant and animal species.

Box 5 : Climate change is above all a set of empirical markers revealing a confusing disruption in the eyes of populations

"When you have a field where you could harvest 200 or more bunches of millet, sometimes you harvest 50 or less. This is what we call climate change in our understanding. The climate change is that, before, the first rain falls early. But now the rain falls late. And usually after the first rain falls, we see a return of the heat. When you expect moisture, it's heat that dominates. Some of the plant species we know are completely gone.

Sometimes the rain stops when the produce is not yet ripe. Sometimes the rain continues to fall at harvest time, which rots the yield. There are many cowpea fields that have not been harvested because all the cowpea is rotten because of the rain [...]. Climate change is only increasing because the temperature is only getting higher, the trees are only disappearing. There are only the trees that we planted ourselves that you can see. Before there were many plant species like baobab, kirya, but they disappeared. There were trees like baobab, kirya, taramniya, gwadda, kalgo, tsiriri, tamarind. All these trees have disappeared [...]. In the past, after a rain everything soaked into the ground, which is not the case today. A small rainfall flows and destroys everything in its path. When winter sets in, it is an absolute worry. Since the water stagnates instead of infiltrating, there are caterpillars that come out of the ground that we do not know in the past. There is tawraqa for example that destroys the plantation. It is an enemy that even our ancestors did not know.

The main problem of climate change is the rainfall, the rains are slow to come and even when they come, they leave early, not to mention their irregularities. We put seeds that in the beginning germinate and then die because of soil degradation.

Extract from the FGD in Simiri

"It is the climate change that makes the wintering not go well anymore. When you sow, the seedlings come out and grow to a certain level, then the rains stop, or insects come and destroy them [...].

[...] First the rains come late and end early. The soils are poor. There are more people now and they can't find new land for farming. So won't the people suffer with this there? What is most difficult is the delay of the rains, the early end of the rains, the drought that has destroyed the soil. The drought has killed all the plants that used to provide rainfall. Even the ponds have dried up. There is no more new land either. These lands! We found our parents cultivating them and we continue with the same land [...]. Climate change can be defined by the advance of the desert and the hot winds.

[...] Before, we had enough rain. But now, the rains come late, and then as soon as the plants grow and rise a little, the rains stop and it's a disaster: everything dries up. That's the kind of suffering that plagues us every year. You struggle to plant and see the seedlings start to come up, and then the rains go away. And again in recent years, after you've done the seeding, there are crop pests that come in and destroy everything. For example, last year, in short, nobody was satisfied with this agricultural year. All the crops were destroyed by a caterpillar.

[...] Either you sow and everything dies, or it grows and the rains stop and everything dries up. Sometimes it is even when the millet is almost ripe that other incidents occur. Last year, it was even hail that broke the millet stalks in the fields.

Extract from the FGD in Sargagui

The interesting thing about these speeches is that they reveal people's tendency to point to empirical evidence of climate change: disappearance of species, transformation of ecosystems, decline in fertility, new and unknown diseases, unbearable heat, insufficient rainfall, and great uncertainty about the climate: "It's hot when it should be cold, and it's cold when you should expect heat. Everything is out of whack," as one woman put it during the FGD in Simiri.

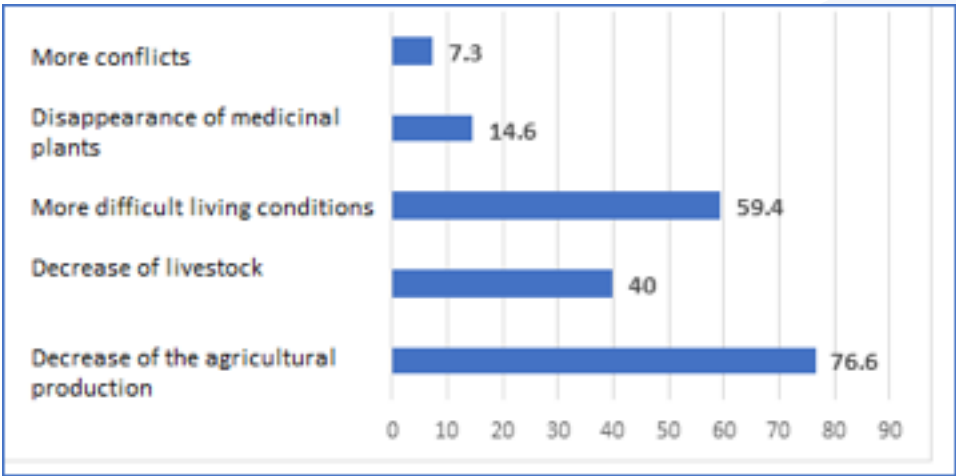
Box 6 : The impacts of land degradation and fragmentation

"With the demographic explosion, the area of agricultural production is getting smaller every year. Because when a grandparent or parent dies, those who are the heirs will be left with small areas. And these areas are not only small but they are also washed away. Because you know the constraint, in any case, is the washing away of the land. That's why we talk about land degradation. And so, production will be low because the land is impoverished and small and will not be able to meet the food needs of the population. And all these combined forces the populations to migrate".

Interview with the Departmental Director of the Environment of Tessaoua

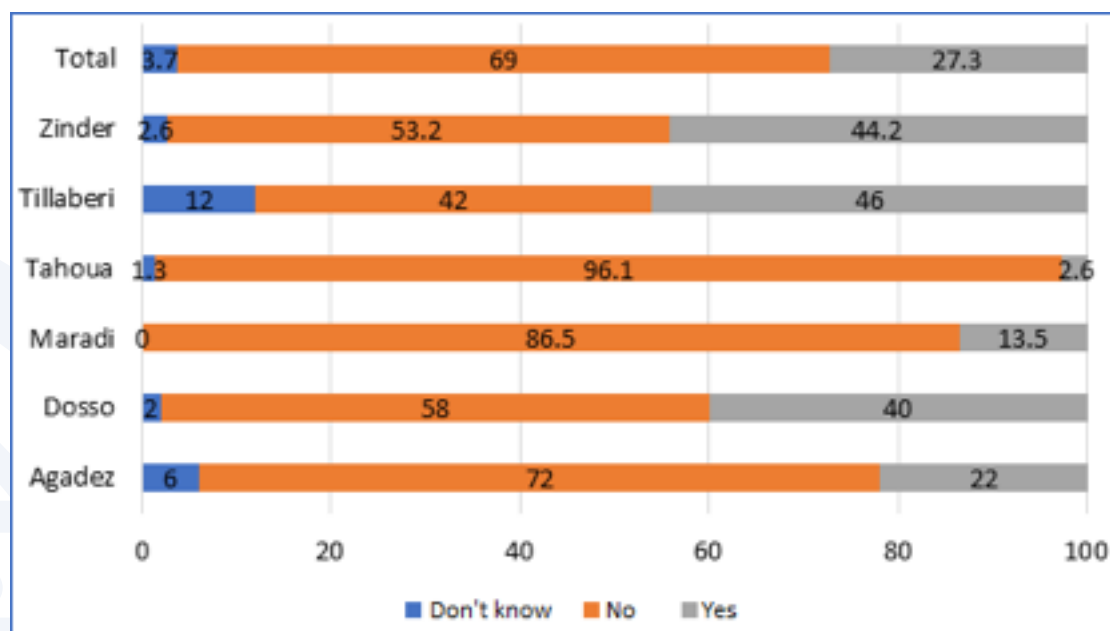
When asked about the overall impacts of climate change, the quantitative survey revealed that, overall, the main impact of climate change on socio-economic activity is a decrease in production according to 76.6% of respondents. This is followed by more difficult living conditions (59.4%). As for the decrease in livestock, it was mentioned by 40% of respondents. However, the increase in conflicts and the disappearance of medicinal plants were the impacts that were raised the least, with proportions of 7.3% and 14.6% of respondents respectively.

Graph 21 : Impacts of climate change



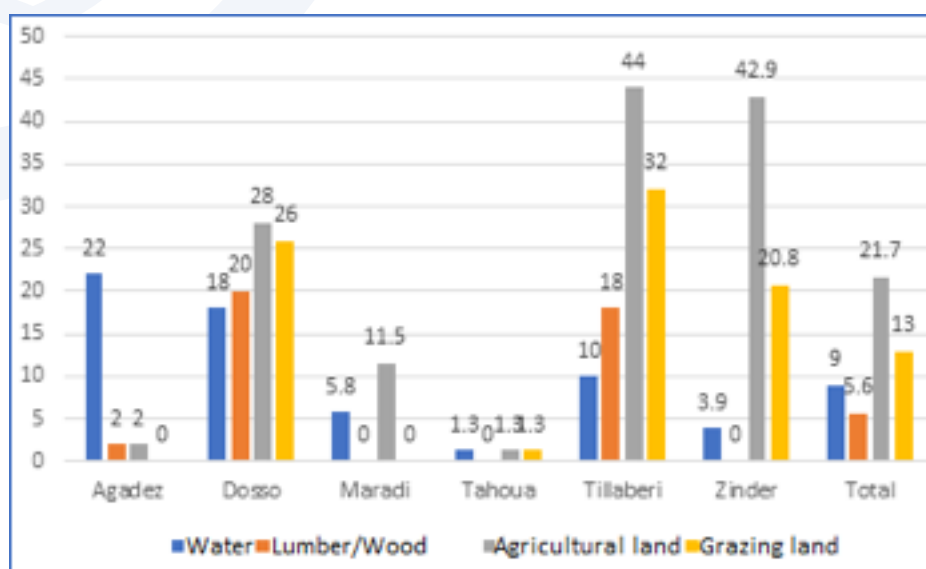
One of the impacts of climate change and environmental degradation is the exacerbation of conflicts over natural resources. 27.3% reported this type of conflict. The extent of conflicts is greater in the regions of Dosso, Zinder and Tillabéri, with 40%, 44.2% and 46% respectively indicating the existence of conflicts over natural resources.

Graph 22 : Conflicts related to natural resources



Overall, the resources most affected by conflicts are agricultural land (21.7%). This is the same for all regions except Agadez, where water is the resource most affected by conflict. Dosso is fairly balanced between different resources such as water, wood, agricultural land and pasture. In Tillabéri and Zinder, there is also a good proportion of pastureland with 32% and 20.8% respectively.

Graph 23 : Resources subject to conflict



Climate change is considered to have formidable environmental consequences and to greatly affect the economic sectors on which production activities are based. This allows us to understand the insistence on the role of climate change in the hardening of living conditions which tends to install the populations in a spiral of indebtedness and decapitalization which confines in a multiform precariousness.

Box 7 : Indebted and decapitalizing in order to face the precariousness exacerbated by climate change

"When I learned of the discovery of a gold mining site, I sold my donkey, which I use for transportation, for 40,000 francs. Sometime later, I learned that their supplies were exhausted. With the little gold they found, they buy food. Eventually, they realized that it doesn't work. This is how they returned to Agadez. After some two weeks of their departure, we learned that they are on their way back. I was told that any extractor who returns early shows that he has had gold. My grand brother came home with his friend. And they didn't even announce their arrival. It took him until the next day to tell me that he didn't get anything. He made me understand that he had no luck and that his supplies were exhausted, so he chose to go home. But still, I paid for his transportation to Libya. When he was there, we were farming two fields. But now that he is away, I hardly work one field. The other is abandoned. So it's a loss."

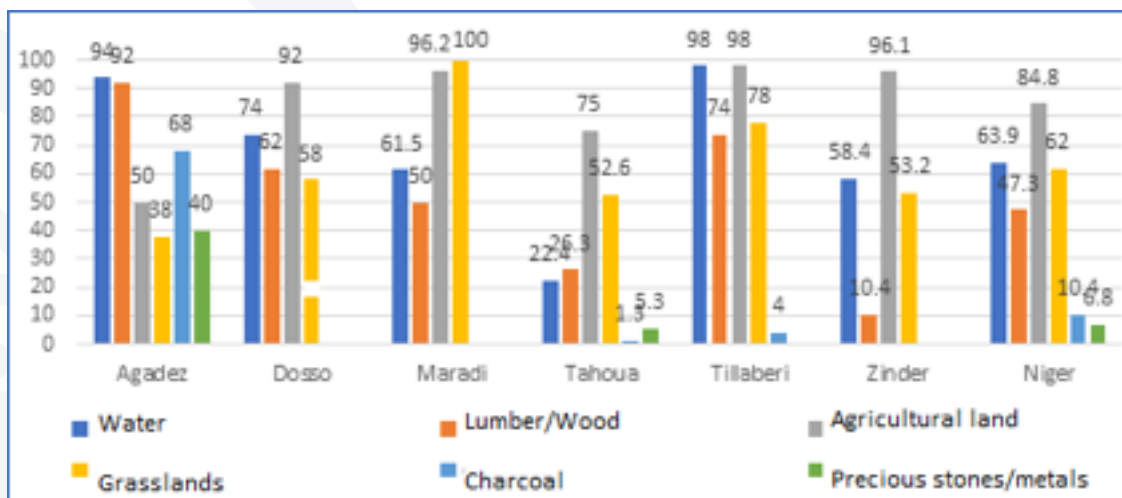
"We are the first to suffer at Djado (gold panning site). I was first forced to take on a debt of 50,000 francs. Every day we were hoping to find gold. We dug wells two to three meters deep but to no avail. When the supplies ran out, we were obliged to take out a loan of 10 to 15,000 francs from the local bank. There are debts that have not been paid up to now. Sometimes the board forgives us some debts when it understands that we are not able to pay them. We had suffered and unfortunately, we didn't get anything. On the way back we suffered a lot. As heads of families, we had been forced to walk on foot and sometimes to ask for help from the drivers and the population. We did not know in what conditions we would find our respective families. That's how we managed to get to Tanout along the way. We had some activities that allowed me to buy a few kilos of rice and condiments. When I arrived home, the family was waiting for me, but I had nothing.

"Most of the migrants are young people. But there are also people who do not have children or those whose children are unconcerned about the family's problems. Their destination is foreign countries, but also gold mining sites in the interior of the country. At the gold sites, there are old and young people, and all of them incur debts before leaving. However, not all migrants earn something on their return. So people should have bought food with their money rather than leaving on an exodus. The migrants always hoped to earn money in their adventure. That's why if things don't work out, they continue their adventure in Libya or Algeria because they can't go back home.

Excerpt from the FGD in Bakatsira, Tanout department

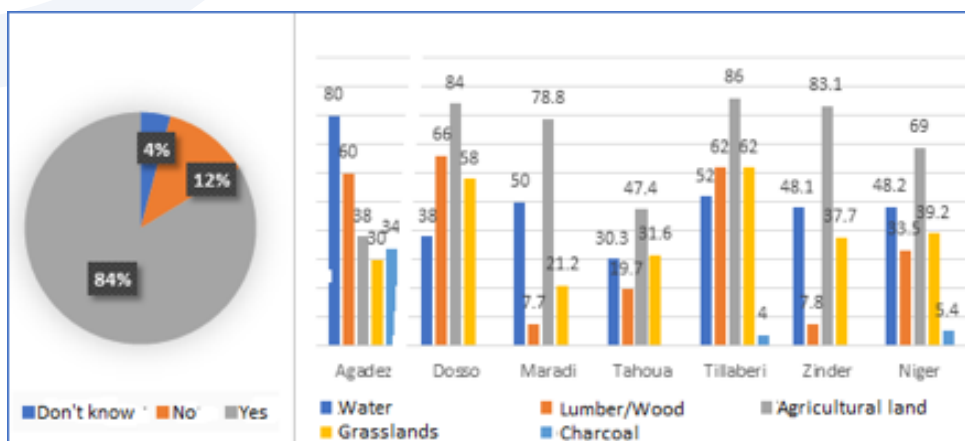
The questionnaire survey of rural households shows that the most available natural resources are agricultural land (84.8%), water (63.9%) and pasture (62%). These three resources are most often cited in the regions of Maradi, Tillabéri and Zinder. Charcoal, precious stones and metals are more available in Agadez, with proportions of 68% and 40% of respondents in the region, respectively. Wood and timber are more available in Agadez, with proportions of 68% and 40% of respondents in the region, respectively. Wood and timber are more available in Agadez, Tillabéri and Dosso with 92%, 74% and 62% of respondents in these regions respectively.

Graph 24 : Availability of natural resources by region



A large majority of respondents noted changes in the availability of natural resources. Overall, the resources most affected by these changes are agricultural land (69%) and water (48.2%). This trend is found in the regions of Maradi, Tahoua and Zinder. It should be noted that water was mentioned the most in Agadez, where four-fifths of those surveyed mentioned it. Timber is most affected in the regions of Agadez, Dosso and Tillabéri. As for pastures, they are more affected in Tillabéri and Dosso.

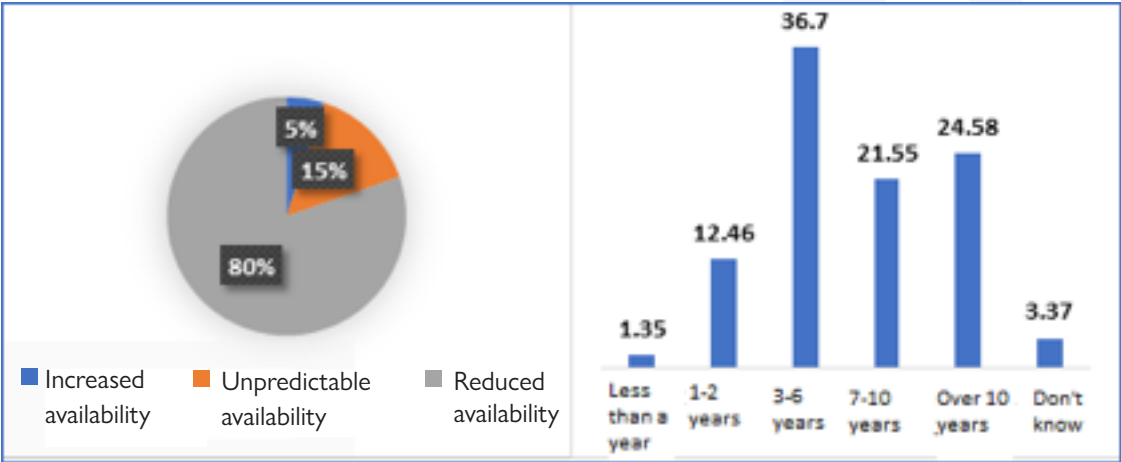
Graph 25 : Evidence of changes in the availability of natural resources and the resources affected by these changes



Most respondents attest to having seen changes in the availability of natural resources between the last three and six years. However, one out of four respondents said that they had seen changes in the availability of natural resources more than ten years ago, and one out of five said that they had seen changes between seven and ten years ago.

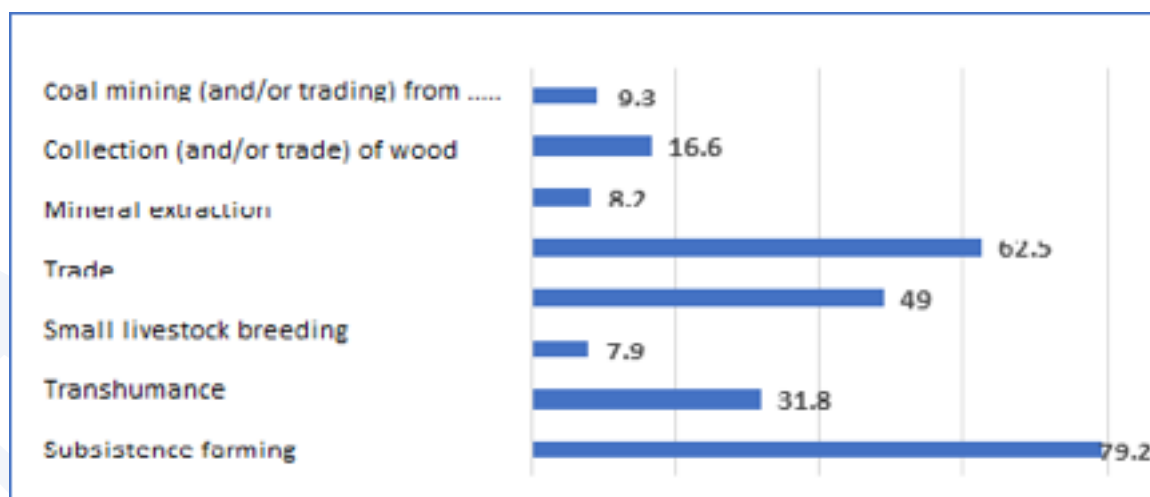
Regarding the nature of the changes, four out of five respondents reported a reduction in the availability of natural resources. It is important to note that 15% of respondents also reported unpredictable availability.

Graph 26 : Characterization of changes and duration of their observation (%)



The main subsistence activities of the population are subsistence farming and trade according to 79.2% and 62.5% of respondents respectively. They are followed by small livestock breeding, which was mentioned by almost half of the individuals surveyed (49%). The least practiced subsistence activities overall are transhumance (7.9%), mineral extraction (8.2%) and charcoal extraction and/or trade (9.3%)

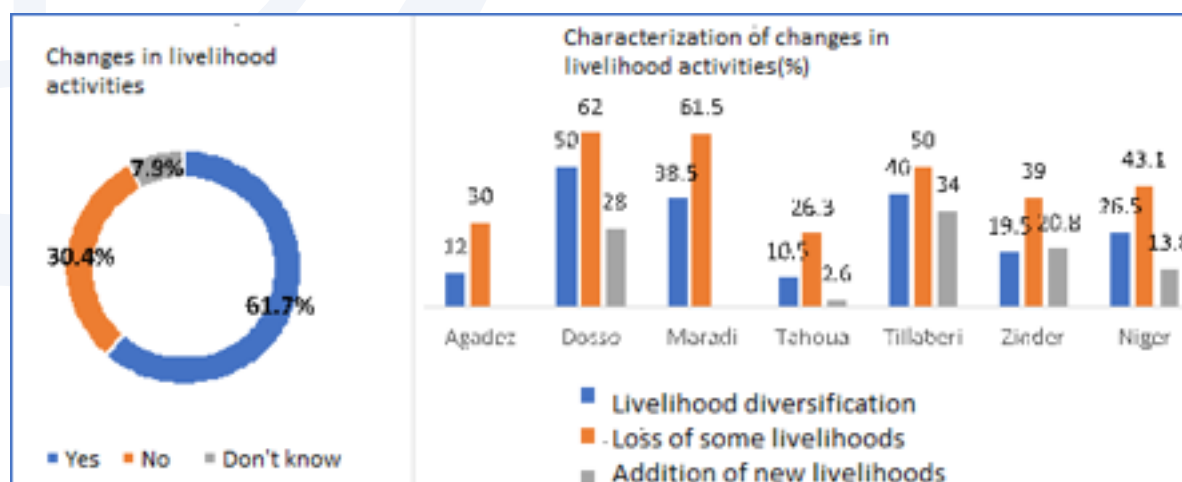
Graph 27 : Main livelihood activities (%)



It should be noted that two out of three respondents affirm that in their locality, i.e. 66.2% of the investigators, people practice several subsistence activities at the same time in the face of the effects of environmental and climatic changes against 30.7% who affirm the opposite.

The majority of respondents have noted recent changes in the practice of livelihood activities. In all the regions surveyed, the main characteristic of the changes noted in livelihood activities is the loss of some livelihoods. This is followed by diversification of livelihoods, which has higher proportions in Dosso (50%) and Tillabéri (40%).

Graph 28 : Change in production activities and characterization of changes



The interviews give a more empirical character to the changes affecting rural populations in the face of the scale of environmental upheaval and the intensity of climate change.

Box 8 : Multiple manifestations of climate change

"The decrease in soil fertility has existed for a long time. But before, we used to fallow because we had enough land. But today, we don't have enough land. And you can find twenty people in the same concession and not all of them have a stable activity. So people are forced to leave in exodus.

[...] Before, there were many trees like hano, tarwatsa, kirya, kanya. But all these trees have disappeared. You can look for them everywhere but you can't get them. It was the dead leaves of these trees that served as humus to fertilize our soils.

There is also the advance of the desert which degrades the soil. Yesterday we saw an unusual wind. So it is this advance of the desert that destroys the soil and decreases the agricultural yield.

The absence of trees makes the wind sweep the soil. Apart from that, when the soil was fertile, there was no need for fertilizer. Still the cultivated land is insufficient. Not everyone has a hectare. Only people manage with the small plot of land they manage to own.

The population is growing rapidly. There are many people who remove the roots and bark of the trees when there is not enough rain. So it is normal that these trees fall.

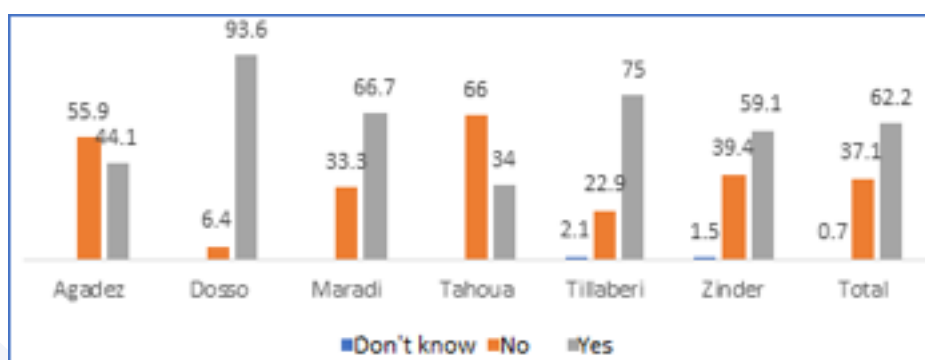
People cut the wood improperly, which exposes the soil to the sun. Besides, when the soil is in the shade, it is more fertile. But when there are no more trees that drop their leaves, the wind always sweeps the soil. So it won't be fertile.

At that time, it was difficult to see a peasant who did not own land. But today the rich have understood the importance of agriculture. They go around to buy the fields of the poor. They tell them they need 50, 60 or even 100 hectares. The poor who cannot satisfy their vital needs are always ready to sell their land. This means that today the poor cannot afford to buy half a hectare. Today the land is in the hands of the rich. Even if the peasants receive help from both sides, they do not have the means to reclaim their land. They are reduced to laborers for the fields of the rich."

Excerpt from the FGD of Dan Kada, Aguié, Maradi region

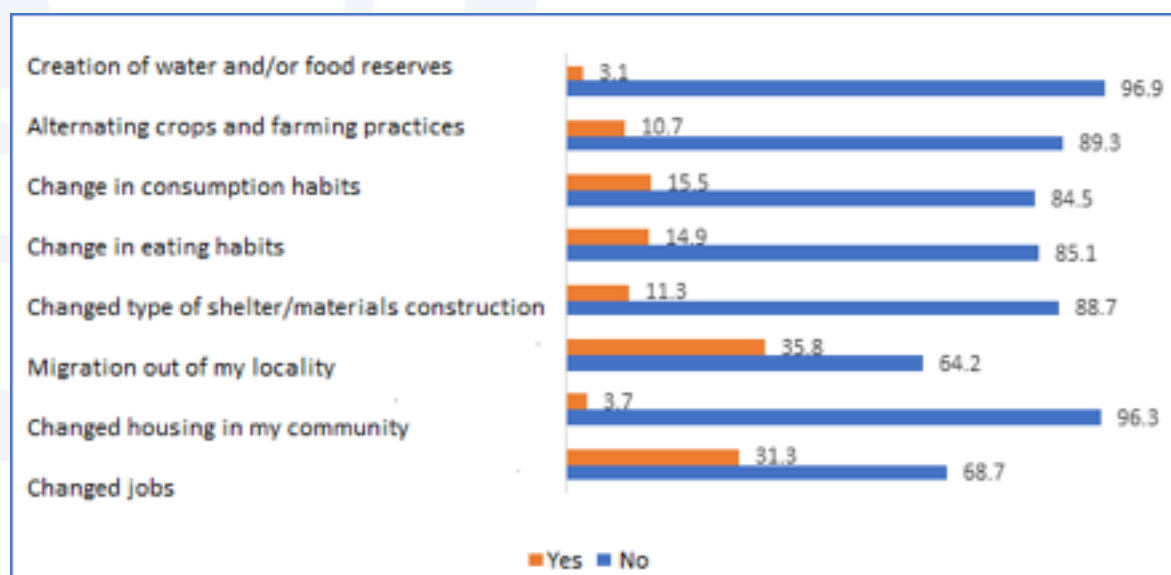
In the face of environmental change, most respondents revealed that local populations have adopted adaptation mechanisms, i.e. 62.2% of them. This trend is found in most regions, with the exception of Agadez and Tahoua, where the majority testified that adaptation mechanisms have not been adopted, with proportions of 56% and 66% respectively.

Graph 29 : Adoption of adaptive practices



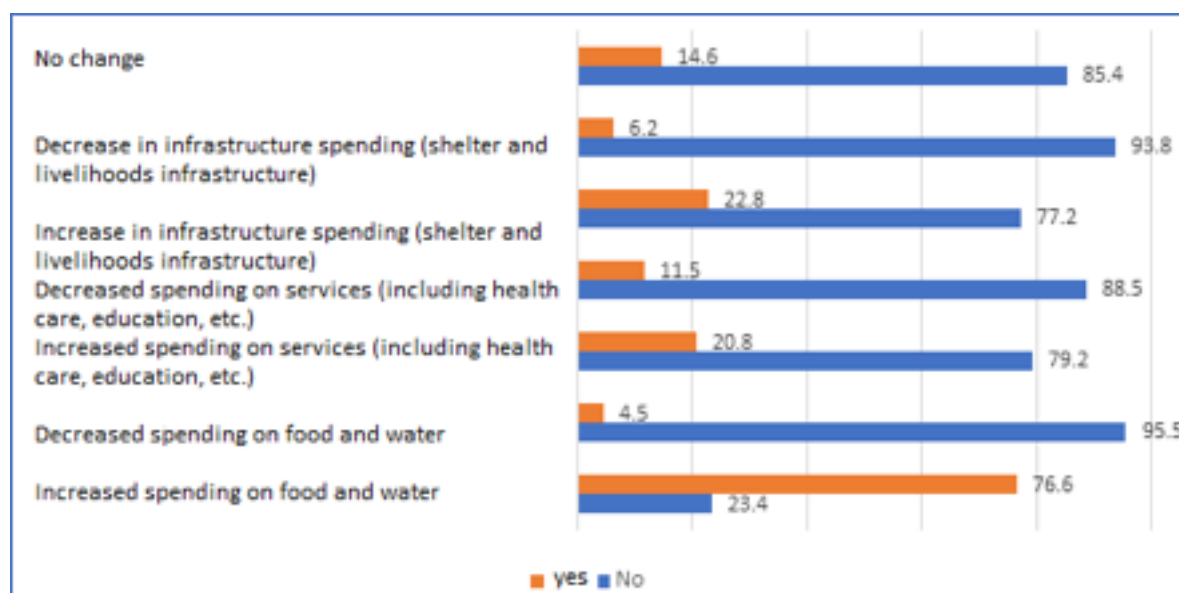
As far as adaptation practices are concerned, they are very diversified according to the populations. Thus, the most frequent are migration and change of job with respectively, 35.8% and 31.3%. However, other less frequent mechanisms were adopted, notably changing consumption habits (15.5%), changing eating habits (14.9%) and alternating crops and agricultural practices (10.7%).

Graph 30 : Adaptive practices adopted (%)



In terms of change, the most adopted practice is increasing spending on food and water (76.6%). This is followed by increased spending on livelihood infrastructure (22.8%) and increased spending on services such as health care (20.8%).

Graph 31 : Changes in consumption patterns (%)



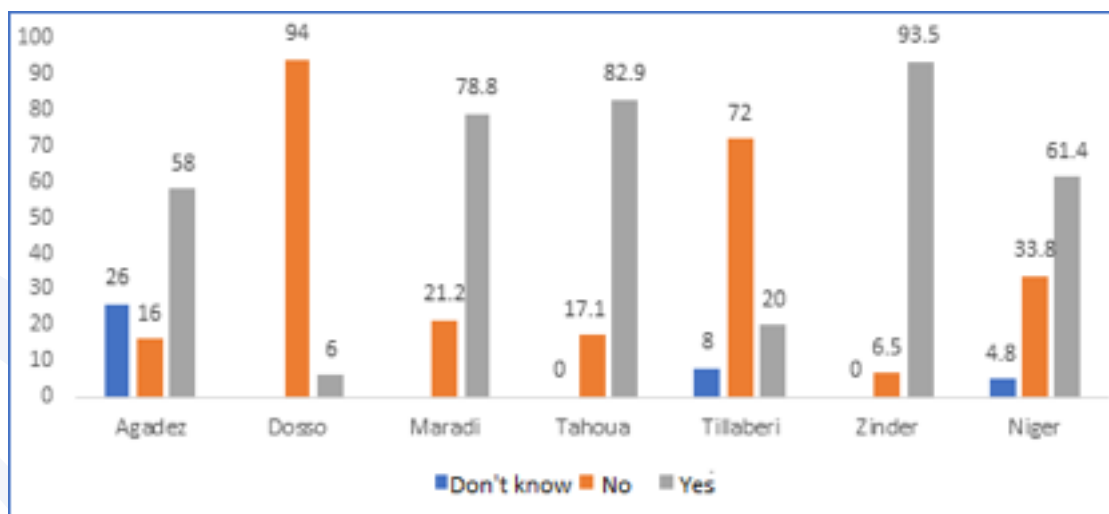
To respond to the deterioration of their living conditions due to environmental disruptions, rural households favor internal adjustments through changes in consumption practices and lifestyles. Nevertheless, migration plays a major role in the dynamics of adaptation.

2.1.4 “Migration is the only choice”. The place of migration in the resilience dynamics of rural households

In the face of a changing environmental context and accelerating climate change, the search for adaptive practices is of crucial importance for rural households, especially in a more difficult socio-economic context. Climate change has confusing effects that mean that "everything has become uncertain", to use an expression that came up as a leitmotif in the interviews and FGDs. In addition, the state is struggling to meet basic social needs against a backdrop of demographic growth, which is itself seen as exacerbating the difficulties of rural households.

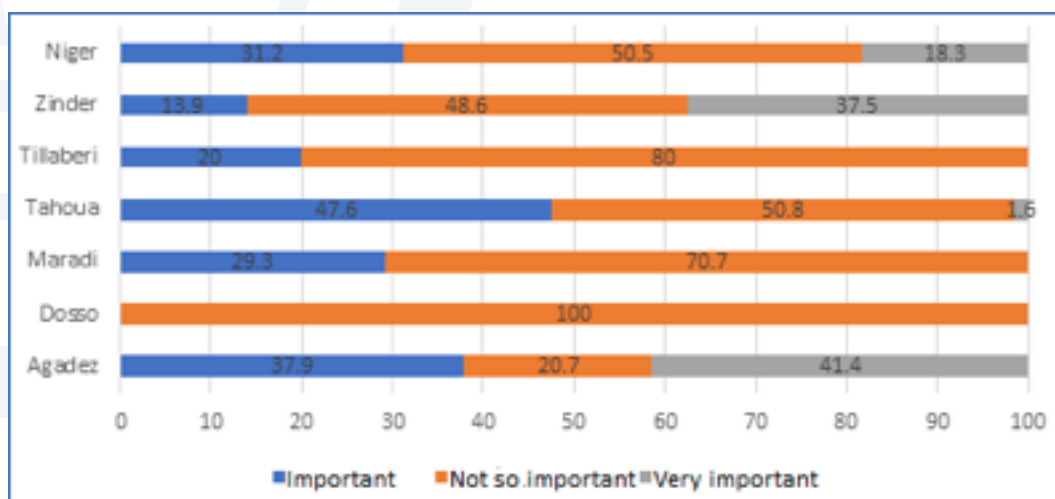
The majority of respondents say that there are people who have left their locality of origin, 61.4% of them. This opinion is more widespread in the regions of Zinder (93.5%), Tahoua (82.9%), Maradi (78.8%) and Agadez (58%). In contrast, in Dosso, almost all (94%) of respondents say that there is no displacement of populations in their locality. This trend is also noted in Tillabéri, where only one out of five individuals noted the displacement of populations in their locality.

Graph 32 : Existence of displaced persons in localities (%)



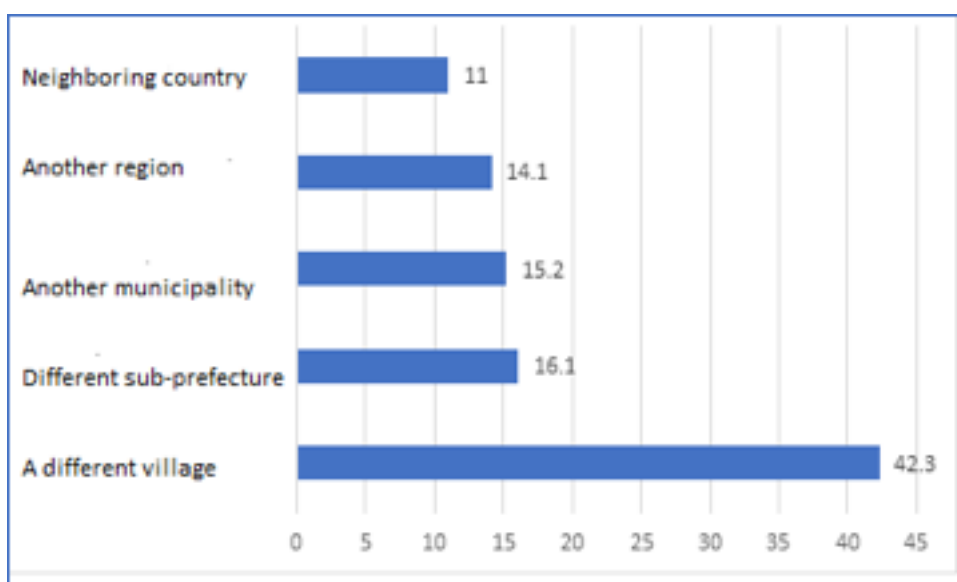
The majority of respondents consider the extent of these trips to be not very important with 50.5%. However, 31.2% considered it important and 18.3% thought it was very important. The exceptions are Zinder and Agadez, where the majority of respondents considered the scale of these trips to be important or very important.

Graph 33 : Extent of travel (%)



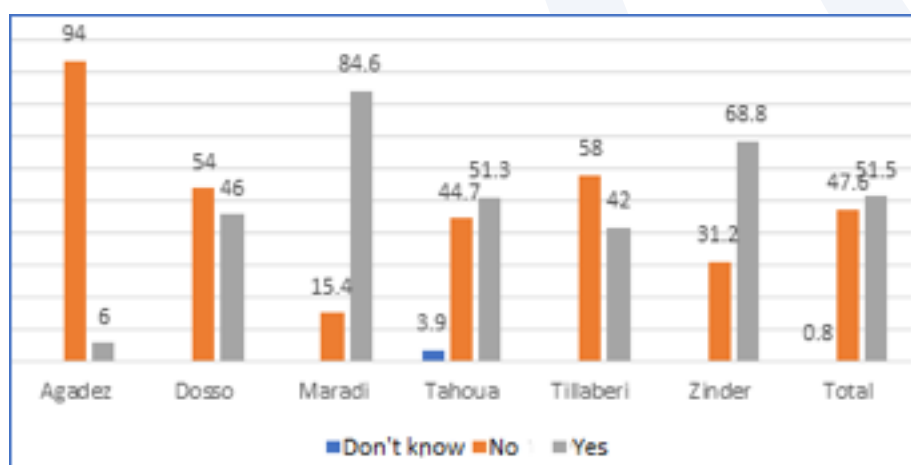
The most common form of travel is from one village to another within the same locality. This is the opinion of 42.3% of respondents. The other forms of movement, notably between regions, between communes or even to a neighboring country, are the least practiced by people who leave their locality of origin.

Graph 34 : Main forms of travel (%)



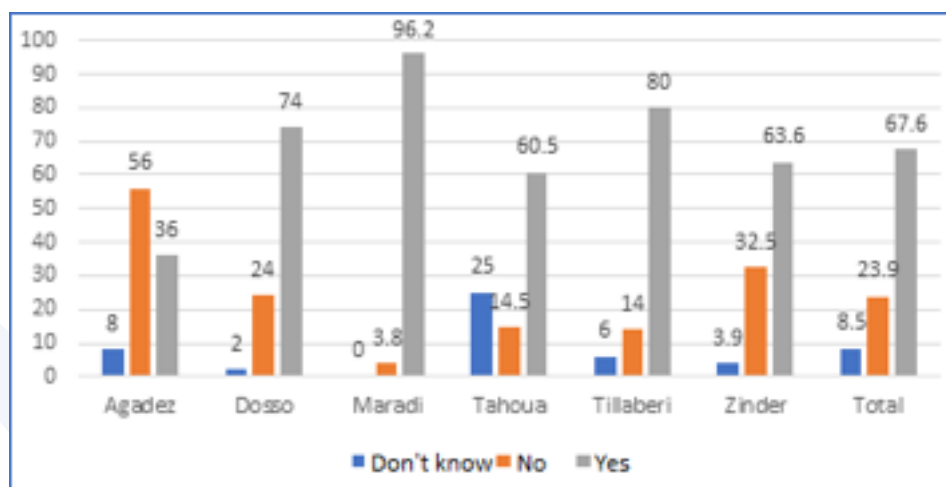
Slightly more than half of the respondents (51.1%) revealed that a member of their family had been forced to leave their locality of origin. This trend is the same in the regions of Maradi (84.6%), Tahoua (51.3%) and Zinder (68.8%). In contrast, the opposite effect is noted in other regions such as Agadez, Dosso and Tillabéri, where the majority said that none of their family members had been forced to leave their locality of origin.

Graph 35 : Family member in migration (%)



Most respondents, 67.6%, think that migration is an adequate response to environmental change. This tendency is found in almost all regions, with the exception of Agadez where 56% of respondents think the opposite.

Graph 36 : Opinion on migration as a response to environmental change (%)



Overall, migration plays an important role in the actions taken to deal with environmental change. But the role of migration in the dynamics of resilience is better highlighted in the discourses during the qualitative interviews. They provide insight into the centrality of migration and the transformations affecting them.

Box 9 : The centrality of migration to the dynamics of resilience and the transformations affecting it

"There are young people between 25 and 35 years old, but also young people of 17 years old. These young people leave their villages out of necessity because the agricultural yield is very low. Young people who do not leave will never be able to marry. Because it was thanks to the sale of agricultural products that young people marry, and now the agricultural yield is low. And today life is very expensive. If you can't get enough to eat, do you think about marriage? That's why young people are forced to leave in order to earn something to add to the little they got from farming, just so they can get married "

FGD in Maijirgui, Tessaoua, Maradi

"We usually come here after the harvest, as we have only one (production) season, the rainy season, the able-bodied try to migrate to other horizons. Either inside the country or outside. If it is within the country, people migrate to Agadez, others go to Zinder or to Diffa. There are people who go to Konni, to Madaoua and to Niamey. And there are people, most of whom are returning to Nigeria. A large part of them is still leaving today, with the movement that is attracting people to the gold mining sites in Tibarkaden and other places, and to Mali, where people are leaving at the moment. People are even leaving for Libya and Algeria."

Interview with the mayor of Tessaoua Garba, Maradi

"Normally, at the end of the rainy season, after the harvest, the population rushes to urban centers to find food. The deficits are already there. Often, even before the evaluation of the agro-pastoral campaign, the deficit is already there. The population sees it. They feel it. So they are forced to migrate to the more affluent areas, which are the urban centers. And here I assure you that the commune most concerned is the commune of Ourafane. Because as I said earlier, it is a commune which, from the point of view of the deficit, is the most marked in the department. It is true that in the other communes, there are pockets but this phenomenon is much more noticeable in the commune of Ourafane compared to the other communes."

Interview with the Departmental Director of the Environment of Tessaoua, Maradi

"In this village, there are more than 30 young people who have left. Among them are married and single people. They are leaving either for Lagos or for Warou. Others are leaving for Libya. These young people send money to take care of their families and also to improve agricultural production. As soon as the neighbor becomes aware of the help that others receive, he does everything to send his child. Once abroad, they do work that requires strength, such as transporting water and construction. They send their families the means to take care of themselves [...]. There are migrants who pawn their family fields to pay for transportation. And it is afterwards that they will send money to recover the field and continue to cultivate. And if they can't get the field back, they send the money to rent a field [...]. There are young people who want to get married but they don't have the means. Or they have sisters who have reached marriageable age. That's why they leave to look for something to organize the ceremonies and save the dignity of the family."

FGD in Dan Kada, Aguié, Maradi

Migration motives and strategies are often well described in interviews with departmental directors of civil status, migration and refugees. These migratory dynamics are part of ancient migratory systems organized around seasonal migration, pastoral mobility, rural exodus and migration abroad, but limited to countries bordering Niger.

Box 10 : Migration systems in Loga and Tessaoua departments and the effects of climate change

"Loga is a migration zone, but the types of migration that exist here are seasonal migrations, those commonly called "rural exodus. There are villagers who leave the villages for, for example, the departmental capital Loga. Others go to Doutchi. Some go to Dosso, some go to Niamey and others, most of them go to coastal countries such as Nigeria, Benin, Togo, Côte d'Ivoire, Ghana, etc. In any case, migration is regional, national, sub regional and African. Because there are some who go as far as Gabon and Cameroon. But there is another core for whom it is Libya.

"Loga is an agro-pastoral area but rudimentary [...]. With the demographic explosion, the land is not sufficient for agricultural activities, and the land is impoverished. Because when your grandfather had exploited the same field, your father exploited it, you yourself exploited it. Every year, it impoverishes the soil. This is one of the factors of climatic hazards. The rains that we were expecting, to have a good rainfall, at first they don't come in time, and when they do come, they don't come at the desired time. So all this is linked to climate change. You saw people before the end of May, beginning of June in the 80's, people were planting because they had rain. Nowadays, it takes the end of June to have the first rains in Loga. Second factor: frequently when you talk to people in the rural world, they will tell you that agriculture does not feed people. Livestock farming does not provide straw for the animals every year. So he prefers to go outside to look for some money to come back".

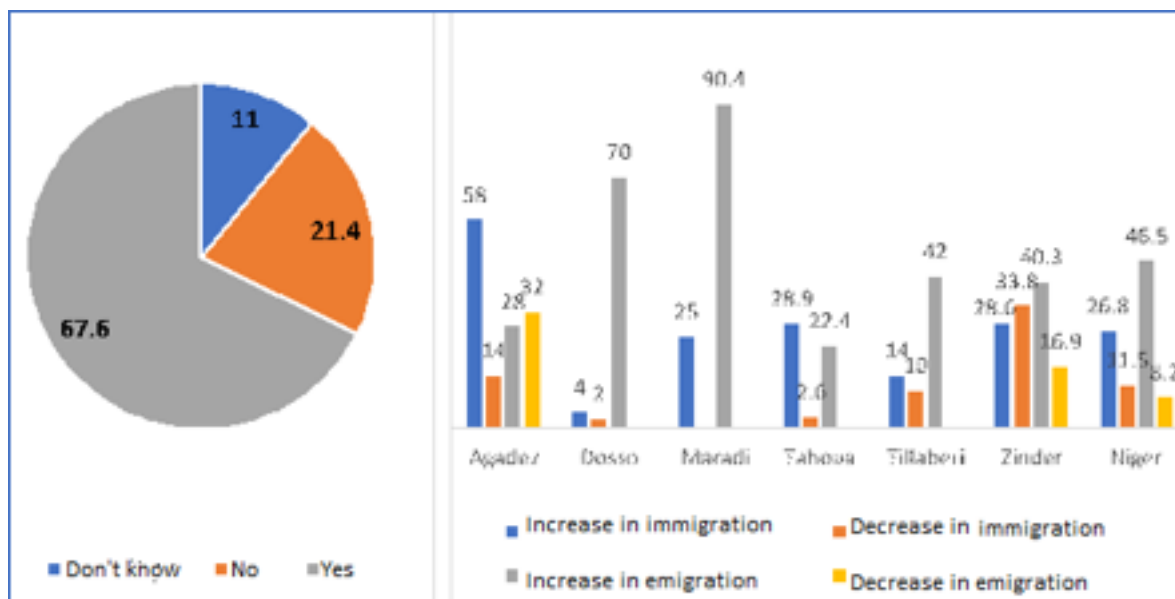
Interview with the Director of the Department of Civil Status, Migration and Refugees of Loga

"You know, land security is the basis of all this. What is land security? I would like to be clear, we all know that in Niger, in any case, cultivated land is not increasing, but the population is growing. This means that inherited land is becoming increasingly small. And because of the lack of mineral fertilizer or organic matter, agricultural production is becoming increasingly low. This is what makes that the productions do not manage to satisfy the needs of the families. So necessarily, people in Tessaoua, and this is true throughout Tessaoua, I don't know if it's immigration or periodic migration because people are going to Libya. You will see families, groups of young people who will go up to Mali, Algeria in search of a better life. You see. In any case, even if not all of the household leaves, there is a part of the household that leaves to look for a better future, even in Agadez and Arlit. There are even women who leave their households to go begging."

Interview with the Departmental Director of the Environment of Tessaoua

Most respondents have seen recent changes in the migration of the local population. They represent 67.6% of the overall sample. According to the nature of the change, the majority reported an increase in emigration (46.5%) as well as an increase in immigration (26.8%). This finding is shared by almost all regions. However, in the Agadez region, 32% of respondents noted a decrease in emigration and in Zinder 33.8% noted a decrease in immigration.

Graph 37 : Changes in migration and nature of changes (%)



Data from quantitative and qualitative surveys highlight the centrality of migration within rural households in the face of environmental upheaval and climate change. Today, several significant trends in migration dynamics can be observed in different regions of Niger, and these trends are reflected in the results of our study. They have the merit of highlighting the predominant role of environmental degradation and climate change alongside socio-economic and security factors¹ :

- population departures (especially young people) from the regions of Tahoua, Maradi and Tillabéri to foreign countries due to land degradation exacerbated by the effects of climate change;
- significant internal migration from Tillabéri to urban centers, particularly Niamey, but this concerns women in particular ;
- massive departures from the Zinder region (especially in the departments of Kantché and Magaria) and the Dosso region (department of Loga) due to demographic pressure aggravated by land degradation. These movements are mainly fueled by women and young people and the destinations are both internal (Niamey) and external (Nigeria, Algeria and Libya in particular) ;
- the reinforcement of the status of the Agadez region (Arlit and Agadez) as a transit area for migrants from Niger, but especially from other West African countries, whose final destination is Europe via Libya, despite the measures taken to curb the phenomenon of irregular emigration in Niger by tightening legislation and repatriating candidates for irregular emigration to their countries of origin ;

¹ Synthesis of trends thanks to : ABDYOU H., Karimou I.A., Harouna B.K., Zataou M.T., 2020, "Perception du changement climatique des éleveurs et stratégies d'adaptation aux contraintes environnementales : cas de la commune de Filingué au Niger", Rev. Elev. Med. Vet. Pays Trop. 73 (2): 81-90, <https://revues.cirad.fr/index.php/REMVT/article/download/31873/31509>; BELLO Ibrahim MOHAMED, 2019, "Climate Shocks and Seasonal Migration in the Tahoua Region of Niger: an approach using a dichotomous model," Region and Development, No. 4, <https://regionetdeveloppement.univ-tln.fr/wp-content/uploads/4-Bello.pdf>; IOM, 2018. Climate Change, Livelihoods, Migration and Conflict in the Lake Chad Basin. Perceptions from riparian communities in Cameroon, Chad, Niger and Nigeria, Displacement Tracking Matrix Report, IOM Development Fund; REPUBLIC OF NIGER, Ministry of Population, National Population Policy 2019-2035, <https://pnin-niger.org/pnin-doc/web/uploads/documents/238/Doc-20191217-095701.pdf>; REPUBLIC OF NIGER, 2020. Niger National Migration Policy, 2020.

- the increase in the number of internally displaced persons in the regions of Zinder and Diffa due to the advance of sand dunes, which have caused the disappearance of entire villages in the most affected localities, forcing the population to seek more suitable sites for their settlement. This poses real problems in a context of shrinking land availability and increasing conflicts over access ;
- the increase in the flow of internally displaced persons in the Niger River valley and in the Air region due to the recurrent floods recorded in these areas in recent years (2010, 2012, 2018 and 2020). The floods of the 2020 winter season and even those of 2021 resulted in many human casualties and considerable material damage (collapse of houses, waterlogging of cultivation areas, loss of livestock, loss of food, etc.) for populations plunged into a spiral of vulnerability (poverty, settlement on sites particularly at risk from flooding, etc.). Hundreds of thousands of victims have been counted, most of whom have had to leave their homes temporarily or permanently. With climate change, floods are likely to become more frequent, so the number of internally displaced people in Niger is likely to explode, requiring costly responses from the government for their relocation and for disaster risk reduction ;
- the displacement of populations living around the Lake Chad bed to the communes of Diffa, Chétimari and Mainé because of the terrorist violence to which these localities are exposed. These displaced populations can thus contribute significantly to environmental degradation in the host areas through the collection of wood for energy and the construction of makeshift housing, but also because of the deforestation they are forced to carry out in order to carry out agricultural activities that are essential to their survival ;
- the settlement of populations in gold panning sites, particularly in the Tillabéri region and around Tabelot in the Air. This activity is not without environmental nuisances related to the dumping of chemicals (mercury, cyanide) used for artisanal gold mining, the destruction of natural balances, the loss of biodiversity, the abusive cutting of wood, soil degradation, etc.
- the influx of refugees from neighboring countries where the security situation has deteriorated, particularly in the tri-border area (Mali, Burkina Faso and Niger) and in certain parts along the border with Nigeria where terrorist violence and insecurity have led entire villages in northern Nigeria to seek refuge in Niger. The influx of refugees is not without a fairly high environmental cost; it also contributes to tensions over the use of agricultural, pastoral and land resources in the Niger localities where they settle ;
- the increase in the number of expelled or "returned" migrants, particularly from Algeria, Libya, Côte d'Ivoire, Saudi Arabia, Central African Republic, etc. The increase in the category is not without challenges related to their social reintegration and the management of their socio-professional reintegration in a context of socio-economic gloom in Niger.

The means used to react to environmental shocks and climatic risks are to opt, initially, for seasonal migration, alternating between settling in urban areas during the dry season and returning to the village during the winter months. However, for many households, this move to the city, initially intended to be temporary, quickly turns into a longer stay, or even a permanent move to the city, where the informal economy offers a range of survival activities that provide income and, above all, facilitate the integration of internal migrants, who often lack

the educational and professional qualifications needed to move into other sectors. The rural exodus is not the only adaptation strategy of rural households in the face of the multiple environmental, climatic, socio-economic, etc. risks to which they are exposed; leaving for mining areas is one of the adaptation strategies of households, as is the search for alternative economic opportunities in the gold mining sector.

One of the elements of consensus in the focus groups concerning the changes in the dynamics of migration in rural areas is that migration is no longer solely a male activity. In localities such as Kantché, Loga and Magaria, the departure of women is a social fact of great magnitude. Environmental degradation and change play a decisive role in these female migrations, which are mainly directed towards Niamey, thus feeding internal flows that play a central role in the growing urbanization of the Nigerien capital.

2.2. INTERNAL MOBILITY TESTED BY THE ECC BINOMIAL IN NIGER: THE CASE OF NIAMEY

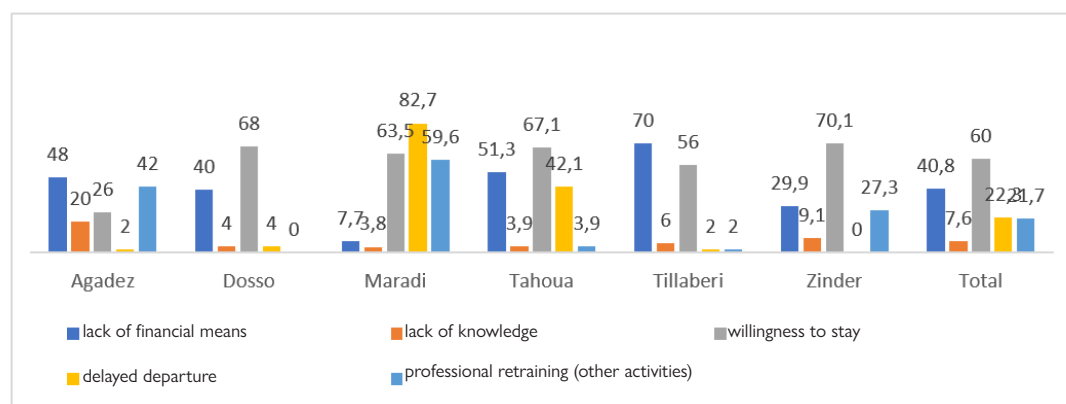
Analysis of the effects of climate change and environmental degradation on migration dynamics has highlighted the centrality of rural exodus in the migration systems of rural Niger. Migration to the city during the dry season is deeply rooted in migration systems in all regions of Niger. Niamey, because of its status as a place where administrative, industrial, economic, educational, commercial, etc. activities are concentrated, is therefore well suited to host surveys of internal migrants to better highlight the role of environmental degradation and climate change on migration and vice versa.

Focusing on the trajectories of internal migrants provides valuable insight into the impacts of environmental degradation and climate change on migration dynamics. To show these links, we rely on a questionnaire survey of 147 internal migrants interviewed in Niamey.

2.2.1 Socio-demographic characteristics of the people surveyed

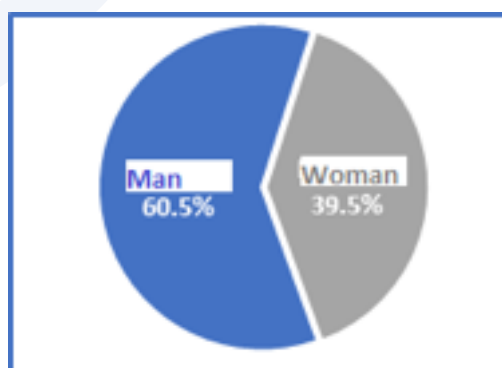
The sample of migrants surveyed is mainly dominated by men. We note that 60.5% were men and 39.5% were women, all living in Niamey.

Graph 38 : Reason for not moving



In order to better appreciate the centrality of migration in adaptation strategies, we considered it important to focus on those who did not migrate. The analysis of the reasons for their non-moving provides a valuable indicator on the “stock of people ready to go on migration”. The survey data show that the main reason for their non-migration is the willingness to stay according to six in ten respondents. However, four in ten respondents cited lack of financial resources as a reason for not moving. Finally, 22% of people reported delaying their migration.

Graph 39 : Gender distribution of respondents in Niamey

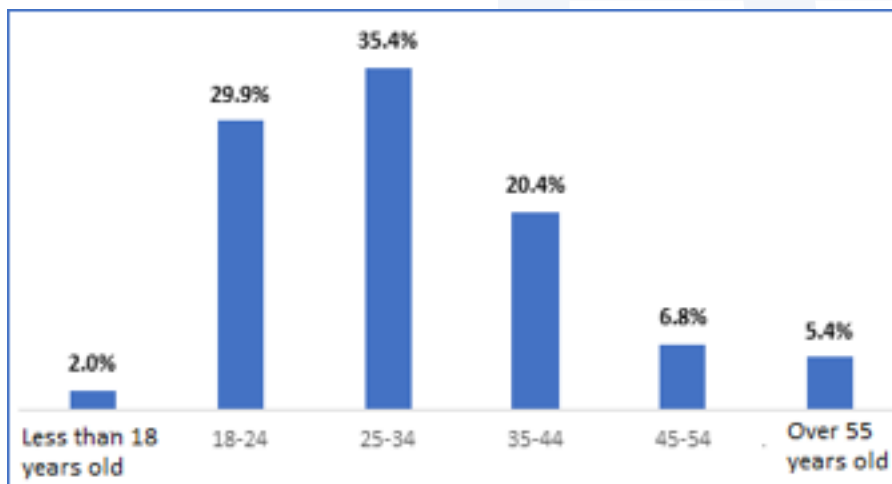


The survey of rural households revealed a feminization of migration flows. Internal migration is therefore no longer the exclusive domain of men, even if there are still more men in rural households who resort to it because of socio-cultural prescriptions and religious norms that give men more latitude in terms of mobility. However, there are currently profound changes taking place in rural Niger that highlight the dynamics of women's empowerment with respect to mobility.

The field survey in rural areas highlighted women's migration as a fact of life that populations have attributed to climate change and environmental degradation. It is therefore not surprising that more and more women (young people and adults) are coming to settle in Niamey and taking up employment in the domestic help sector, itinerant trade, catering, etc. The resourcefulness of women and their resilience can be seen near road junctions, in markets set up along the roads where they can be found in large numbers with their arms full of products for street sale (fabrics, beauty products, foodstuffs, etc.) if they are not in front of a table, busy preparing meals for sale, while others resort to begging as their main activity in urban areas or abroad (Algeria, Nigeria).

Most of the people interviewed in Niamey were young people. Indeed, 67.3% of the migrants surveyed were under 35 years of age. Moreover, the most frequent age group is 25-34 years old with a percentage of 35.4%, followed by the 18-24 age group which represents 29.9% of the sample. It is worth noting that minors are the least represented since they represent only 2% of our sample.

Graph 40 : Age distribution of internal migrants

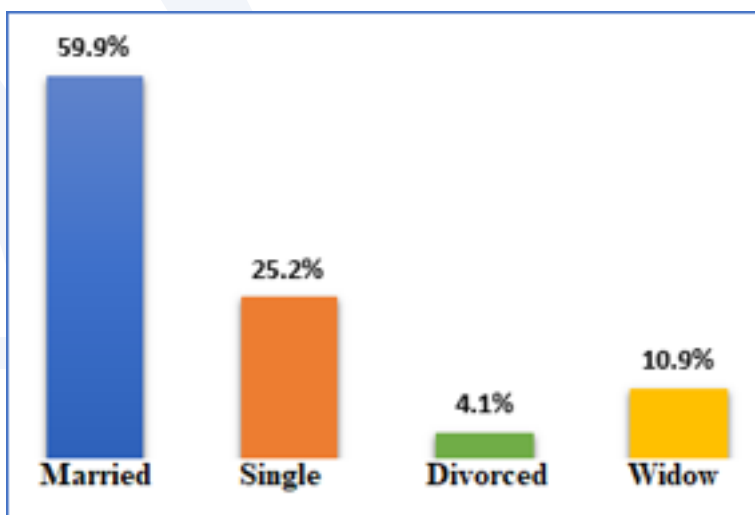


The graph below highlights that internal mobility is the work of young people and adults, which is corroborated by the survey in rural areas, where the majority of households emphasized that migration is mainly among young people and adults. It is therefore active people who leave the rural areas to come and settle in Niamey. This implies fewer hands for field work and other activities in rural households. It is also the most dynamic segment of the population and the one most inclined to make the changes needed to improve living conditions in rural areas that opts to move to the city.

This situation is not without consequences for the resilience of rural areas in the face of environmental degradation and climate change. It is true that migrant remittances are invaluable for the survival of households, but for more sustainable resilience dynamics, human resources are essential to develop initiatives that reconcile economic gains with environmental preservation.

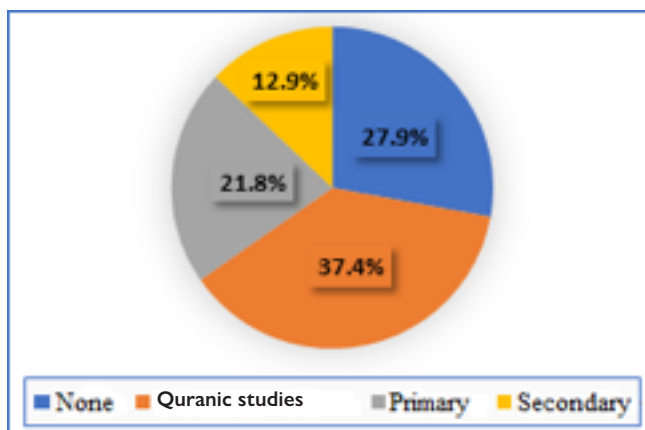
Regarding marital status, the majority of migrants surveyed are married, representing 59.9% of our sample. At the same time, we note that one migrant out of four is single. Widows and divorcees are the least represented among the respondents with proportions of 10.9% and 4.1% respectively.

Graph 41 : Distribution by marital status



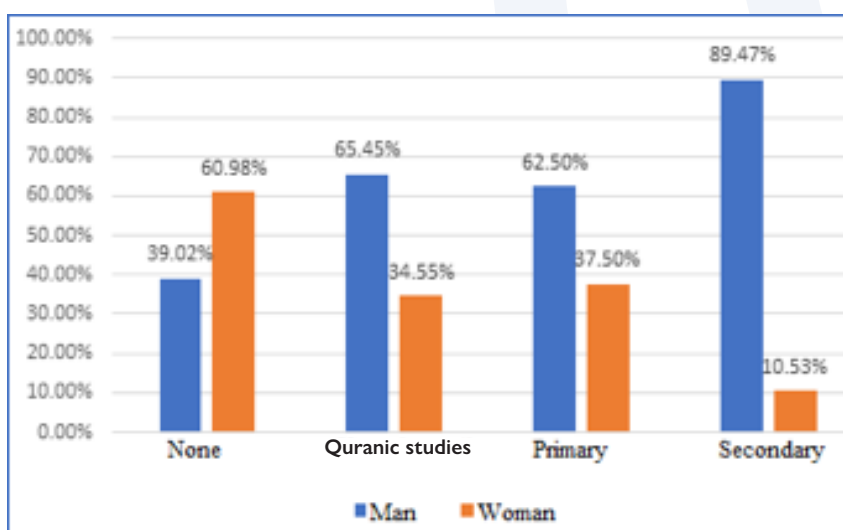
As for the level of education, the observation that emerges is that more than half of the migrants surveyed did not attend French school (65.3%). In fact, the majority of them had attended Koranic schools, i.e. 37.4% of the sample, and 27.9% had not attended either Koranic or French schools. However, all those who attended French school had a primary or secondary education, with proportions of 21.8% and 12.9% respectively. Thus, none of the migrants surveyed had attained a higher level of education.

Graph 42 : Distribution by education level



The level of education is not homogeneous between men and women. It reveals disparities that are themselves a reflection of the inequalities between men and women that are found in Niger society in general. These inequalities show that women are generally excluded from the formal school system despite the many advances that have been made in girls' schooling.

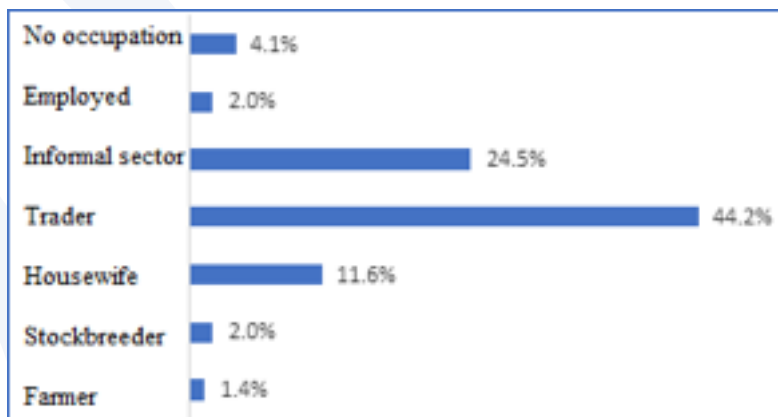
Graph 43 : Educational level by gender



According to the graph above, there is a strong disparity between men and women according to the level of education. Thus, among the respondents who did not have to attend any form of school, 60.98% are women. The trend for Koranic and primary education is almost constant with 34.55% and 37.50% for women against 65.45% and 62.50% for men. The disparity is even more noticeable when the school level evolves because we find just 10.53% of women at this stage. However, it should be noted that the preceding remarks may be influenced by the unequal number of women and men in the sample.

The majority of migrants living in Niamey work in commerce and the informal sector with proportions of 44.2% and 24.5% respectively. Housewives represent 11.6% of the sample, while the other socio-professional categories, notably employees, farmers and herders, each represent less than 5% of the sample. Migrants with no occupation represent 4.1% of respondents.

Graph 44 : Distribution by socio-professional category



The survey of internal migrants indicates that the primary sector (agriculture, livestock, fishing) and the tertiary sector (commerce, handicrafts) were their main activities in their places of origin. The other activities represent only 3.40% of the main activities cited by the individuals in the sample.

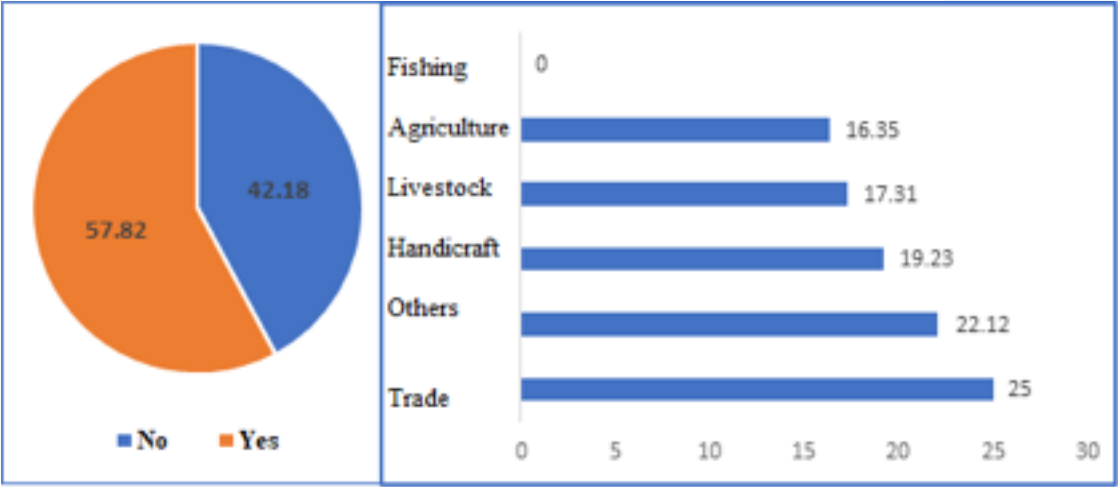
We also note that agriculture is the dominant activity in the migrants' localities of origin. In fact, it represents 99.32% of the responses cited, followed by livestock (72.11%) and trade (58.50%). Among the activities, fishing is the one least cited by the migrants: 8.10%.

Graph 45 : Main socio-economic activities in the localities of origin (%)



Overall, more than half (42.18%) of the migrants interviewed said that men and women do not practice the same activities in their locality of origin. According to them, trade and other activities outside agriculture, crafts, commerce, and livestock raising and fishing are the main activities of women. However, men and women do not have the same perception. More than 7 out of 10 women (70.69%) say that men and women practice the same activities, unlike men who are divided on the question.

Graph 46 : Perception of equality of activities by gender (%)



An analysis of the characteristics of the internal migrants surveyed in Niamey reveals a typical profile: a young single adult man or woman with no schooling, of rural origin, who earns in the popular economy and who has come to seek income to improve his or her socio-economic situation and that of his or her family in his or her locality of origin. This economic motivation is certainly important, but it is not exclusive to his or her internal migration trajectory. Factors related to environmental degradation and climate change play a key role in migration dynamics.

2.2.2 Perceptions of Environmental Change and Climate Change

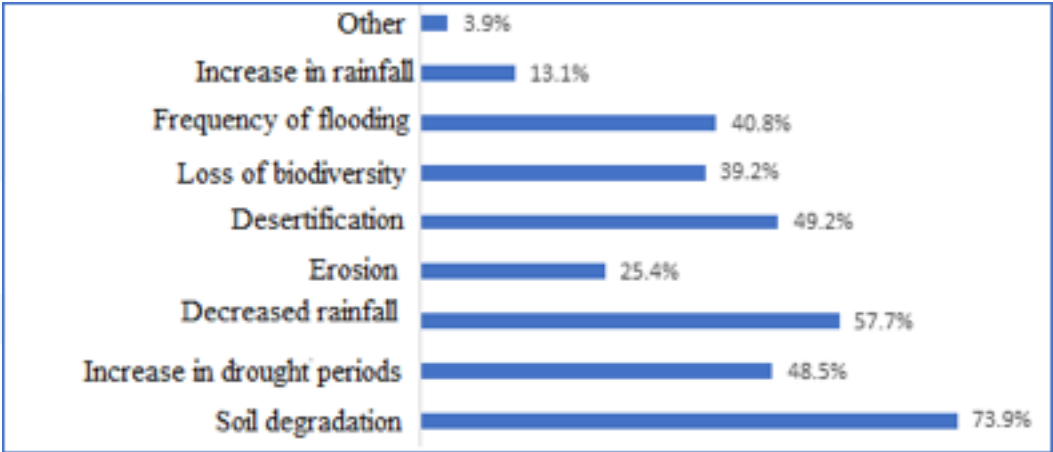
By collecting data on the migration path and socio-economic choices of internal migrants in Niamey, our objective is to test the MECC nexus in order to highlight the role of environmental degradation and climate change in migration dynamics. Before examining their impacts, part of the questionnaire focused on the perceptions of climate change and environmental disruption of internal migrants in their locality of origin.

We note that 88.44% of respondents in Niamey stated that they had noticed changes in the environmental conditions in their localities of origin over the past five years or more.

The main characteristic of the environmental changes observed is soil degradation with a percentage of 73.8%. Decreased rainfall is the second most important change identified with 57.69%. The other changes indicated by the respondents in Niamey are the lengthening of drought periods (48.5%), the advance of the desert (49.2%), the loss of biodiversity (39.2%) and the frequency of floods (40.8%). The changes indicated broadly

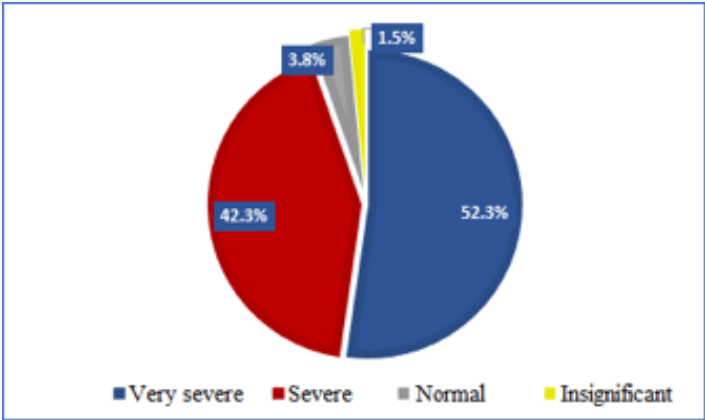
overlap with the major environmental constraints in terms of climate change in Niger: floods, droughts, desert encroachment, and land loss. They are considered to have negative social and economic consequences and play a major role in migration.

Graph 47 : Perception of environmental change



When asked about the seriousness of climate change, the majority of respondents think it is very serious (52.3%) while 42.3% perceive it as serious. Those who consider climate change to be normal or insignificant are in the minority, with only 3.8% and 1.5% respectively. What emerges from the study is the seriousness of climate change, which is measured by the multiple negative effects perceived by the respondents as having played an important role in their settlement in Niamey. This percentage of people who perceive climate change as serious or very serious is interesting because it indicates not only an awareness of its negative effects, but it can serve as a basis for raising awareness and involving the population in policies and programs for adaptation and mitigation..

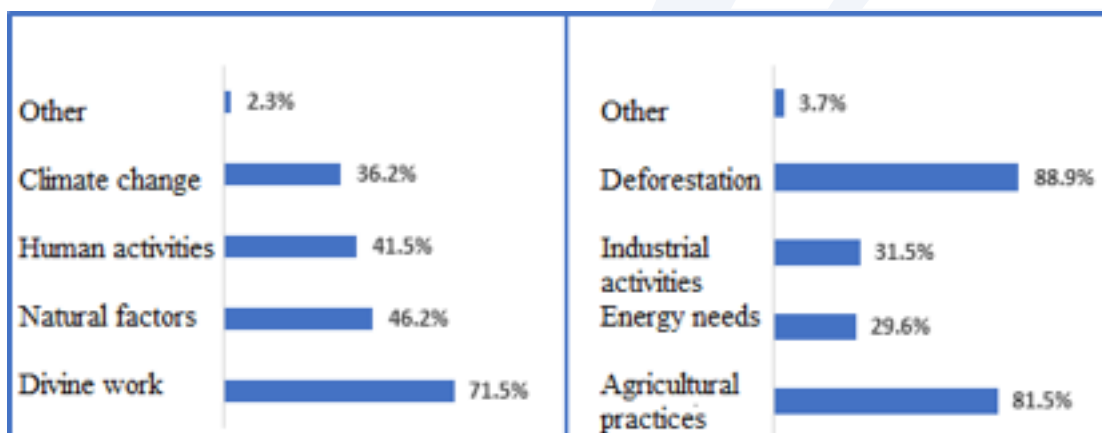
Graph 48 : Extent of climate change



As with the rural household survey, the questionnaire used for the internal migrant survey asked about the main causes of environmental disruption in the eyes of internal migrants. As with the rural survey, the main cause cited in Niamey was God's work, with 71.5% of responses. It should also be noted that even if the other causes were relatively less mentioned, their frequency is not negligible. Indeed, climate change, human activities and natural factors were highlighted respectively by 36.2%, 41.5% and 46.2% of the migrants interviewed.

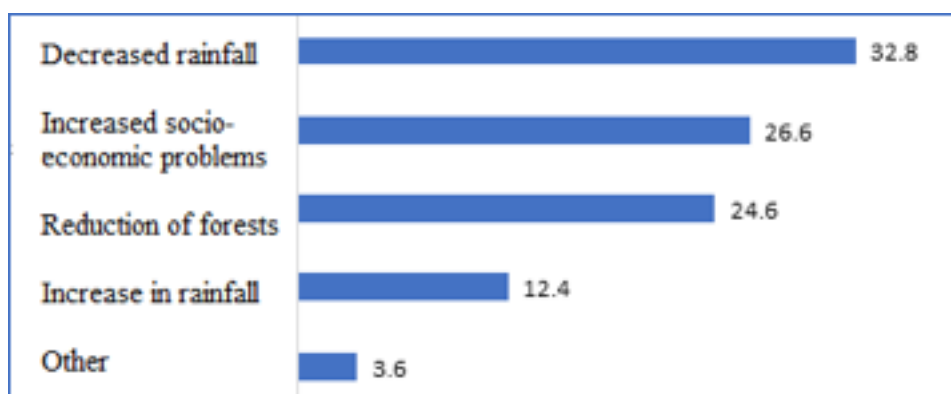
With regard to human causes, we note a preponderance of causes such as deforestation (88.9%) and agricultural practices (81.5%). However, industrial activities and energy needs were the least reported among human causes with proportions of 31.5% and 29.6% respectively. In terms of actions to combat environmental disruption, it is important to pay special attention to deforestation and agricultural practices by implementing appropriate actions to reduce pressures on natural capital, to promote agricultural techniques that reconcile productivity and protection of ecosystems.

Graph 49 : Causes of environmental change and share of anthropogenic causes



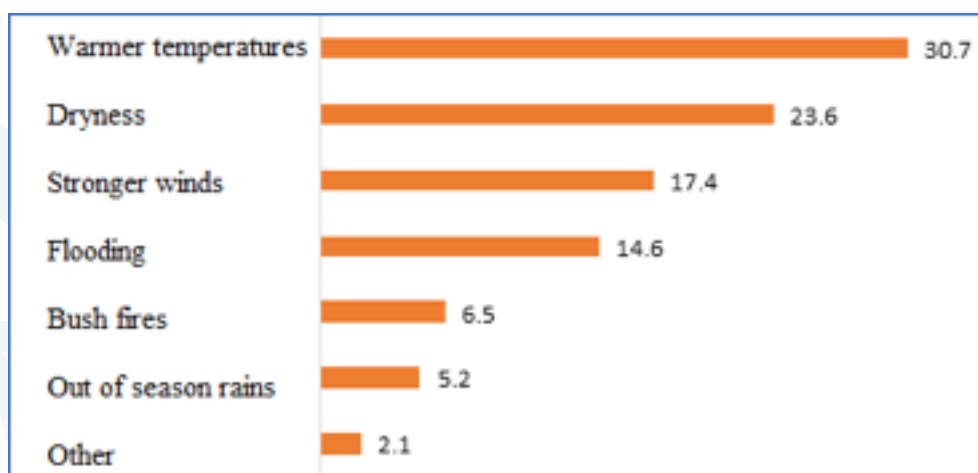
Climate change is perceived in different ways by the people we interviewed in Niamey. Most of them perceive it as a decrease in rainfall (32.84%). This is followed by an increase in socio-economic problems (26.63%) and a reduction in forests (24.56%). However, 12.43% perceive it as an increase in rainfall.

Graph 50 : Perception of climate change (%)



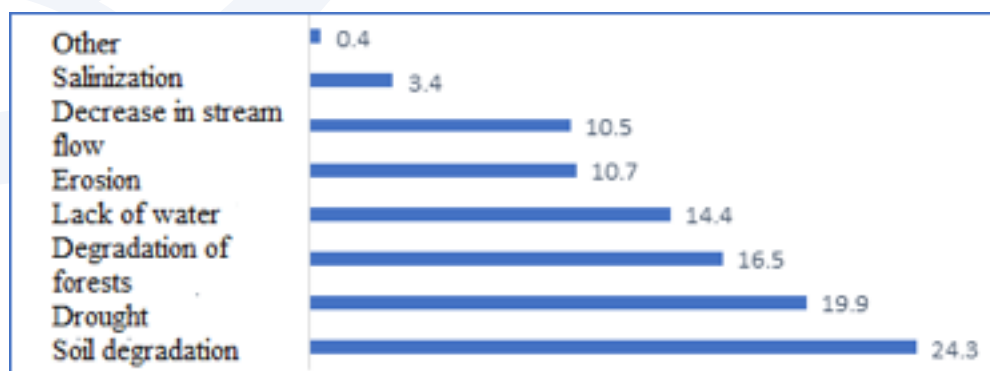
The most frequent climatic event, according to respondents in Niamey, is the rise in temperature with 30.65%. Drought comes second with 23.64%. High winds were recorded for 17.4% and floods for 14.55%. In addition, 6.49% noted bush fires and 5.19% unseasonal rainfall.

Graph 51 : Climatic events (%)



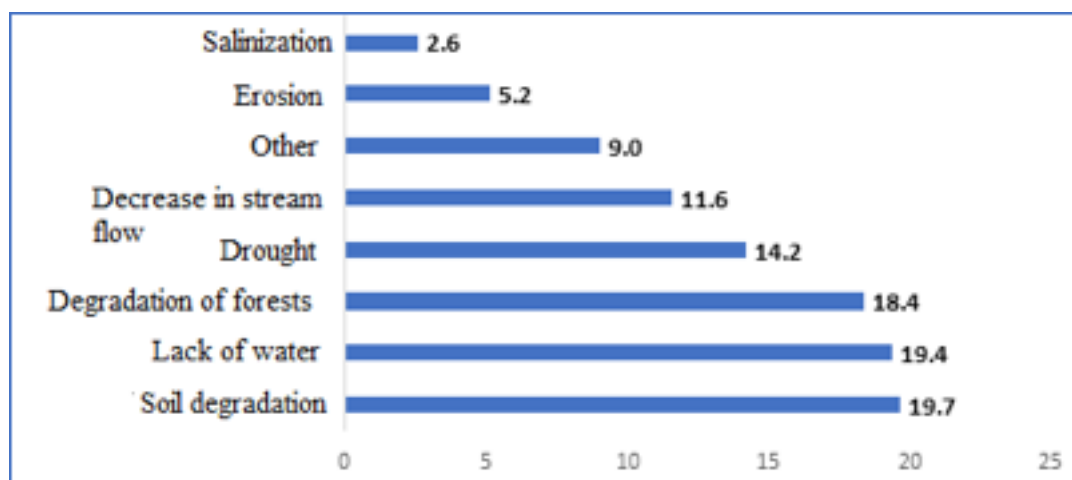
The environmental problems encountered in the localities of origin are diverse. Indeed, one person out of four insists on soil degradation, others indicate drought (19.87%) or forest degradation (16.53%) or lack of water (14.44%). On the other hand, 10.67% consider that the environmental problems in their locality of origin are erosion (10.7%), the decrease in the flow of water (10.5%) or salinization (3.4%).

Graph 52 : Environmental problems in home communities (%)



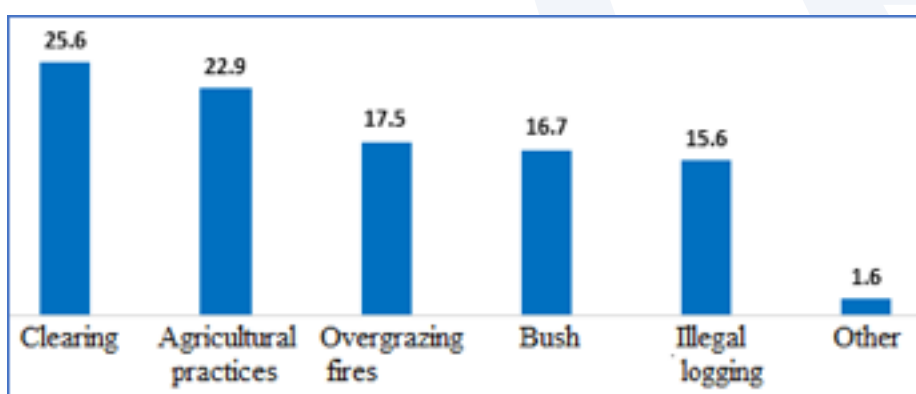
As for the environmental problems encountered in Niamey, for respondents in the Nigerien capital, soil degradation (19.68%) and lack of water (19.35%) are the most frequently cited problems, while 11.61% of individuals indicate a decrease in river flows, followed by forest degradation (18.39%), drought (14.19%), erosion (5.16%) and salinization (2.58%).

Graph 53 : Environmental problems in Niamey (%)



Internal migrants interviewed in Niamey were asked to give their opinion on the main anthropogenic causes of environmental degradation. For them, land clearing is the main anthropogenic cause of environmental degradation. One person out of four points to this practice as responsible for environmental degradation. Then follow agricultural practices (22.91%), overgrazing (17.52%) and bush fires (16.71%). Clandestine exploitation is mentioned by 15.63% of the individuals interviewed. Land clearing is accentuated by demographic pressure and land degradation.

Graph 54 : Anthropogenic causes of environmental degradation (%)

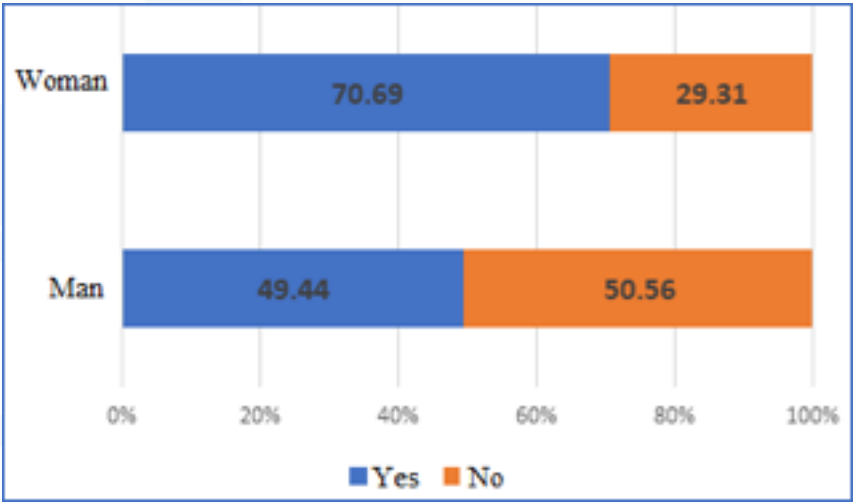


More than eight out of ten people say that climate change has had an impact on their activities. According to them, the impacts range from difficult living conditions (62.59%) to loss of activities (12.49%), a decrease in production (53.06%) and a decrease in cultivable land (42.18%).

Moreover, the impacts of climate change are not felt in the same way by men and women. Women are more likely to declare that their socio-economic activities are impacted by climate change. They are 70.69% to share this opinion against 49.44% for men. The differentiated impacts according to gender are due to the fact that women's socio-economic activities are more dependent on natural resources (agriculture) in addition to their

activities in the domestic space for which they are also dependent on natural resources (water and energy wood supply). Women working in agriculture often find themselves facing more difficult constraints due to the poor land where they practice their activities and the obstacles related to the arduous efforts they must make to carry out their activities.

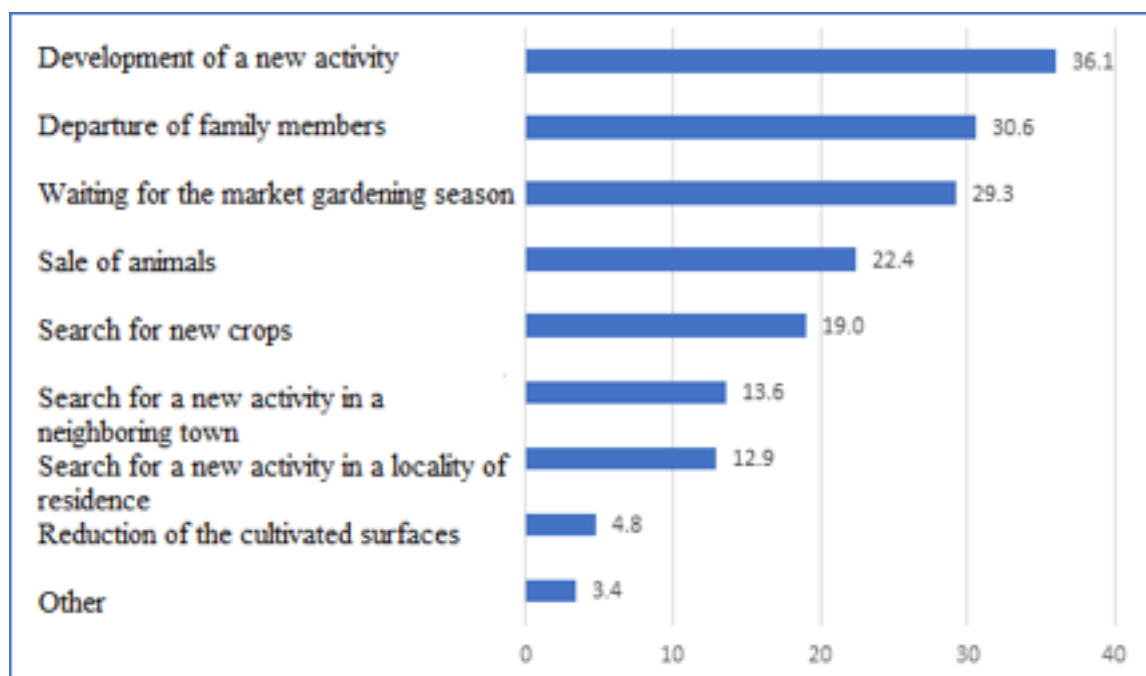
Graph 55: Overall impacts of climate change on the socio-economic activities of men and women (%)



For the internal migrants interviewed in Niamey, the populations are not powerless in the face of climate change. They are trying to adapt to this new reality, which has several harsh consequences.

Overall, 58.50% of the respondents stated that they have adapted to climate change either by developing a new activity (36.05% of the adaptations mentioned) or by migrating a family member (30.61%), or by seeking a new activity or developing market gardening (29.25%) or selling animals (22.45%).

Graph 56 : Resilience action against environmental change (%)

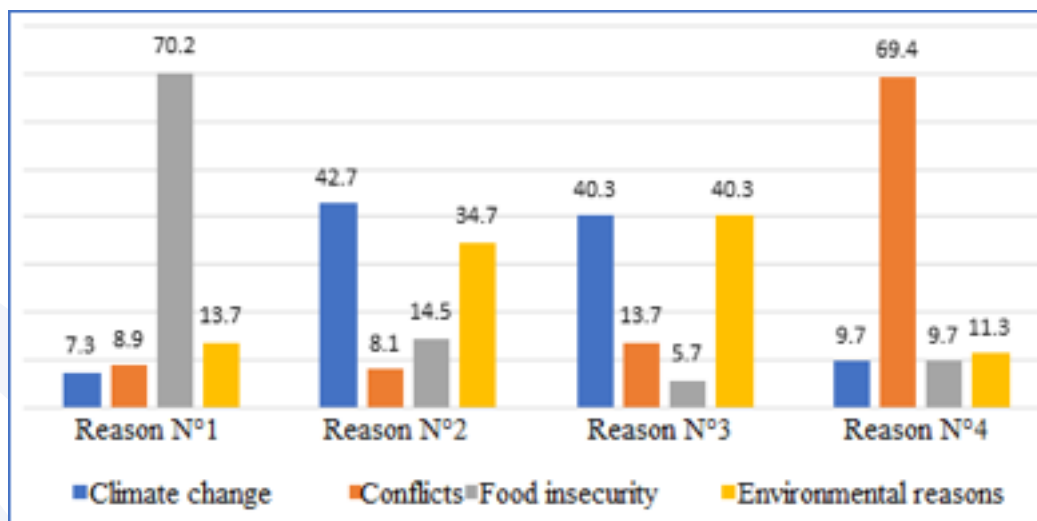


As the chart below highlights, migration of family members is one of the main coping strategies according to the internal migrants interviewed in Niamey. This highlights the centrality of migration within Nigerien households. Migration has always been the first resort in the face of socio-economic shocks such as drought, crop failure, locust invasion, etc. It would not be surprising, therefore, if migration were to be the first resort in the face of such shocks. It would not be surprising, therefore, if internal mobility were fully linked to factors related to environmental degradation and climate change.

2.2.3 The role of environmental degradation and climate change in internal mobility

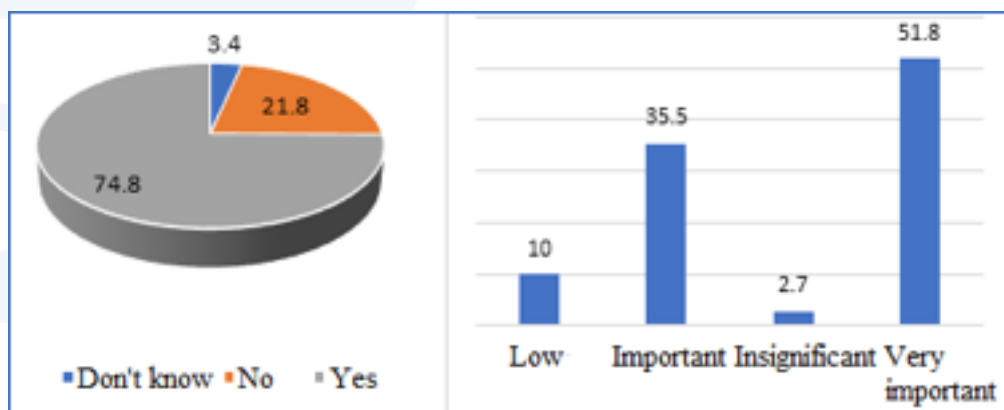
The order of importance of the different reasons for migration from the countryside to the cities shows that the main reason is food insecurity, according to seven out of ten migrants. It is followed by climate change for 42.7% of migrants and environmental conditions for 40.3% of the sample. As for conflicts, they are ranked as the least important reason by seven out of ten migrants.

Graph 57 : Main reasons for migration to cities



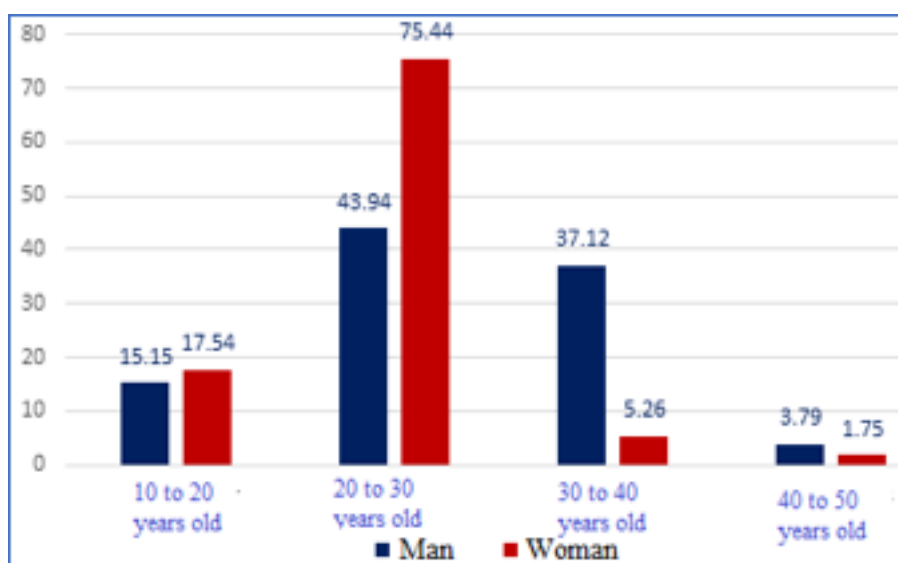
The majority of migrants, three out of four, say that environmental issues played a role in their migration. Among them, more than half (51.8%) consider this role to be very important. Moreover, 35.5% of them think that the role played by environmental problems in their migration is important.

Graph 58 : Opinion on the role of environmental factors and their importance in internal mobility (%)



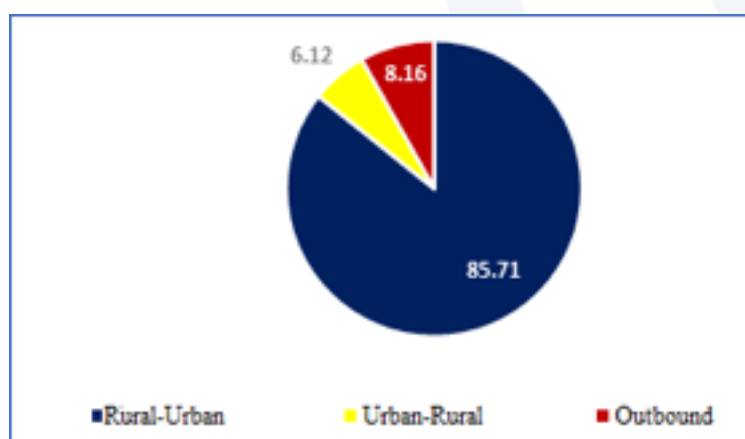
For the respondents, most of the women who leave are between 20 and 30 years old (according to three out of four respondents), followed by those under 20 (17.54%). 5.26% think that female migrants are those between 30 and 40 years old. Finally, a small proportion (1.75%) opts for those over 40. As far as men are concerned, 43.94% of the respondents think that men in the 20-30 age group are the ones leaving. 37.12% indicate men in the 30-40 age group. Only 3.79% mention men over 40 years old.

Graph 59 : Age range of men and women leaving (%)



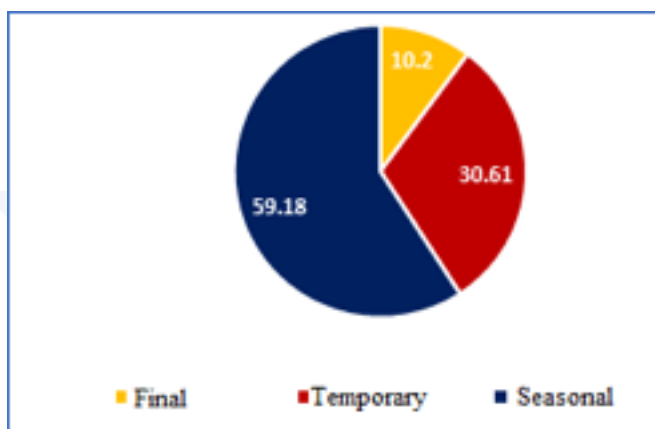
Overall, rural-urban migration is the most common form of migration. Indeed, 85.71% think that migrants leave rural areas for urban areas. On the other hand, for 6.12% of the respondents, the movements are from urban areas to rural localities. On the other hand, 8.16% think that migration to foreign countries is the most common.

Graph 60 : Form of mobility of migrants (%)



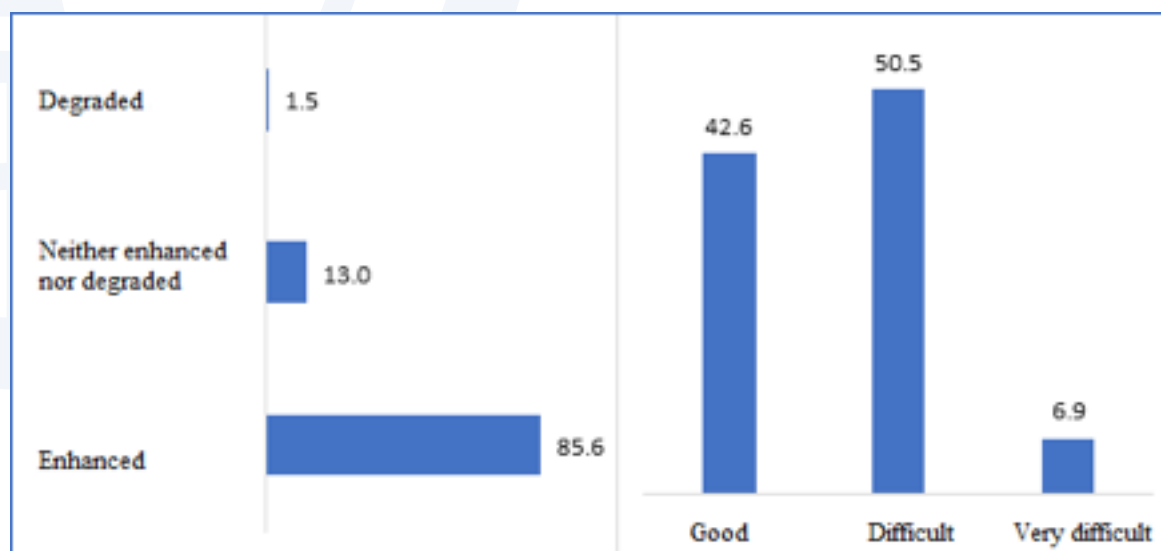
Most migration is seasonal for 59.18% of respondents. On the other hand, 39.61% think that migration is temporary and 10.2% that it is permanent.

Graph 61 : Duration of migration (%)



The vast majority of migrants, 85.6%, believe that their socioeconomic situation has improved by migrating to Niamey. As for the environmental conditions of their place of residence in Niamey, nearly six out of ten migrants consider them to be difficult, even very difficult.

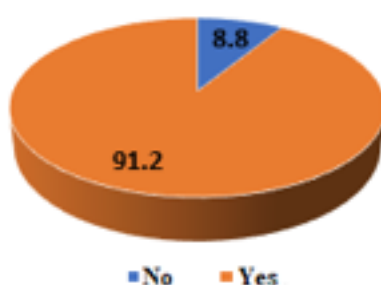
Graph 62 : Opinion of internal migrants on the evolution of their socio-economic situation and their environmental conditions in Niamey (%)



The environmental problems to which they are most exposed are: heat (92.5%), insalubrity (74.8%) and a little less flooding (34%) and sand winds (34.7%).

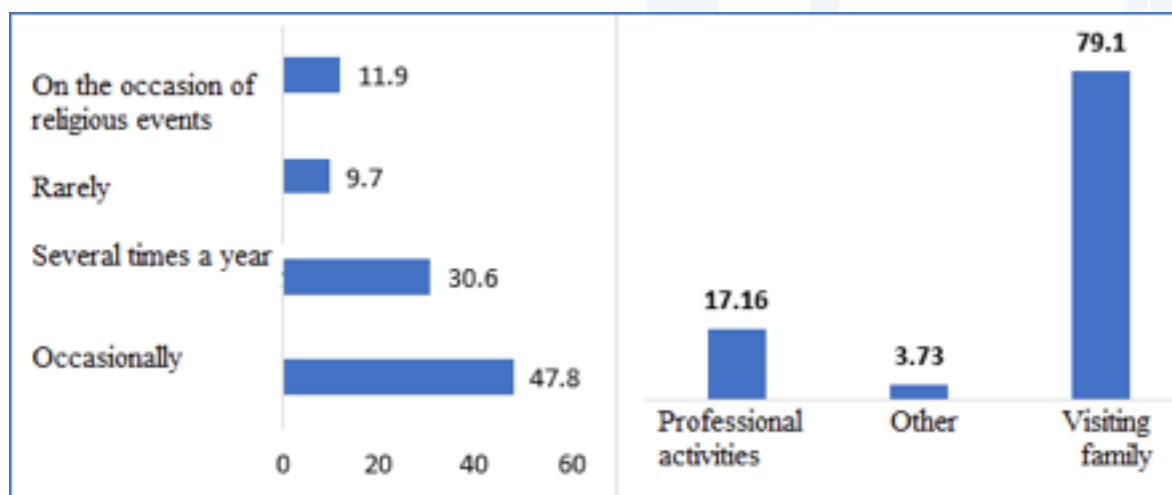
Nearly all migrants reported returning to their locality of origin. They represent nine out of ten migrants surveyed.

Graph 63 : Return to the locality of origin (%)



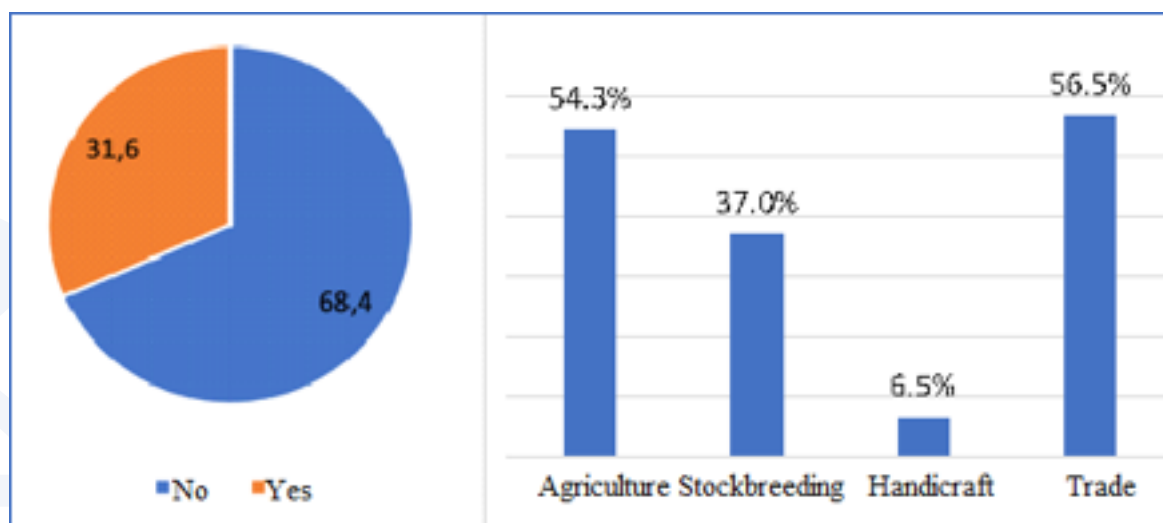
In terms of frequency, the majority return occasionally (47.8%). However, three out of ten migrants return several times a year to their place of origin and 12% on the occasion of religious events. As for the reasons, nearly eight out of ten migrants say they return to visit family, while 17.2% of them return for professional activities.

Graph 64 : Frequency of return to the locality of origin and reasons for return (%)



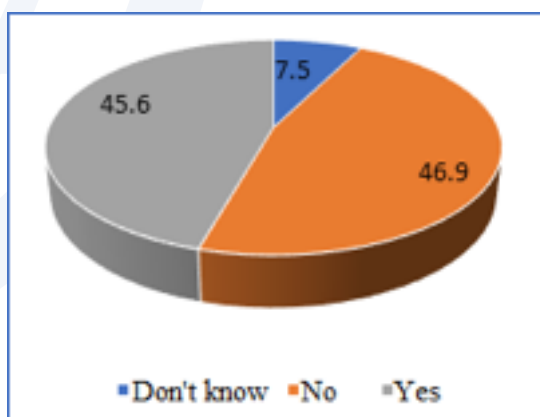
The majority of migrants have not tried to develop a project in their home community. They represent nearly seven out of ten of them. Among those who have tried, the main investment sectors are agriculture (54.3%), trade (56.5%) and livestock (37%).

Graph 65 : Attempt to develop a project in the locality of origin and the area of investment (%)



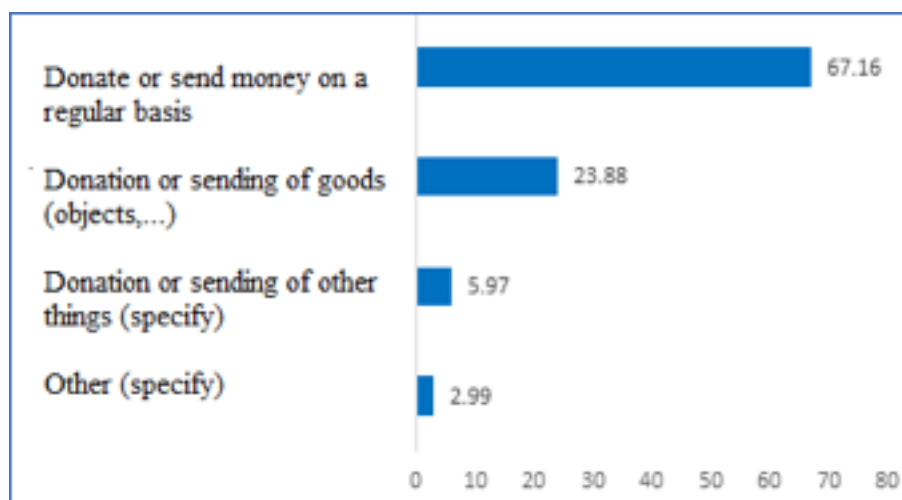
The majority of migrants do not wish to return permanently to their locality of origin with a proportion of 47%. However, 45.6% wish to do so while 7.5% are undecided.

Graph 66 : Desire to return to home community (%)



Migrants keep their ties to their families. In fact, almost all the respondents indicated that they help their families. Most of the time, this assistance consists of regular remittances (67.16% of respondents). The next most common form of assistance was the sending of goods (23.88%).

Graph 67 : Types of aid (%)



Overall, the survey of migrants in Niamey shed light on their perceptions of the environmental and climatic changes prevailing in their localities of origin and in their areas of residence in Niamey. The survey data revealed an awareness of the negative consequences in their localities of origin, in terms of aggravated socio-economic problems, including food insecurity, harsh living conditions and the lack of professional and economic prospects in rural areas.

Migrants put forward economic reasons for moving to Niamey, where they hope to find ways to improve their economic situation and help their relatives cope with the vulnerability of their villages of origin through self-help activities. Although more women are "confined to immobility", more and more of them are now migrating. This growing phenomenon has been seen as one of the most symptomatic of the upheavals caused by climate change and environmental degradation. This situation poses significant gender issues in both the places of departure and destination

2.3. MECC NEXUS AND GENDER ISSUES IN NIGER

The consequences of climate change have contrasting impacts on women and men in Niger, especially in rural areas where women face an overlap of vulnerabilities against a backdrop of economic and social inequalities reinforced by cultural norms and religious prescriptions. Environmental degradation and climate change amplify these inequalities. In order to understand the roots of these inequalities and to identify ways to build resilience, we have systematically favored an approach that allows us to relay the voices of women and other vulnerable groups, their perceptions of how their lives and activities are impacted by environmental disruption and climate change.

Environmental degradation and climate change can generate trade-offs that benefit men because of social norms and religious prescriptions governing gender status and roles that are more favorable to men: men as providers of resources and income and women responsible for domestic tasks and confined to the domestic sphere. "When men are in difficult situations, it is normal that women are also in bad conditions. Because their lives depend on men's lives," said a woman during a FGD in Gallé in the Tahoua region.

Girls' capacity to respond to disasters is thus diminished because the skills and knowledge needed to survive disasters are taught more to boys than to girls. In addition, extreme weather events such as droughts, floods, high winds and bush fires also generate stress and frustration that can impact community and family relations, which can lead to gender-based violence. The precariousness of living conditions imposed by climate change leads households to reorganize their health and education practices and to reallocate their resources in ways that may disadvantage girls and women. For example, the consequences of climate change, through its impact on family incomes, can lead to girls dropping out of school and early marriage. The scarcity of natural resources is likely to increase women's working hours, make their living conditions more precarious and accentuate inequalities to their detriment.

In Niger, the responsibility for unpaid care falls considerably on women. The time and effort devoted to cooking, health and assistance to family members, cleaning, and domestic chores such as finding water and wood products for cooking fall on women because of the prevalence of gender norms. This translates into an extremely large amount of work time for women. In a context where men migrate, this time may be even greater as women may be forced to combine unpaid caregiving responsibilities with physically demanding domestic and field work to make up for the absence of men.

In rural Niger, women are responsible for household activities such as collecting wood, preparing meals, and fetching water; all of which take up several hours of their time each day. This can have negative consequences on girls' schooling and reduce women's time for income-generating activities that can help supplement household income. Economic constraints and socio-cultural prescriptions that prevent women from accessing land resources, from engaging in paid employment, and from migrating make it more difficult for them to engage in productive activities and, for those who do, the sectors they invest in are more dependent on natural resources and therefore on climatic hazards.

Climate change and environmental degradation are perceived as amplifying the difficulties in carrying out activities of a domestic nature, particularly those that rely on the use of natural resources (water and energy wood supply). The accomplishment of these tasks becomes more difficult in the context of climate change, as confirmed by these excerpts from speeches collected during various FGDs.

Box 11 : Increased responsibilities and tasks for rural women in the context of climate change

"It is the women who suffer more than the men. Because the latter can leave the house without leaving anything for the family [...].

It is the women who suffer more because they are the ones who have to take care of many things. Washing the children, doing the laundry, and even talking about what to eat, when the husband goes out, it is possible that they are already in charge of the children before the husband comes because he doesn't have the thing available in advance. She manages with the children [...].

The women are in many difficult situations that the husbands do not go through. Being at home, they are the ones who prepare when the husband brings something to prepare. They are the ones who take care of the children. If the child is sick, the wife cannot sleep, which is not the case with the husband who can sleep snoring. Three quarters of the women take care of the home more than the men, regardless of the man's standard of living. Children often go to their mothers. Some parents can go for years without being able to sit with their children."

FGD in Roubassa, Illéla, Tahoua region

"It is the women who are facing a lot of problems regarding these climate changes. Today, even if the man doesn't have anything, he will have his eyes on his wife. Nowadays, it is the women who "do even the marriage" because they manage as best they can, have a considerable contribution in the household. Apart from farm work, men don't do much for the family and we all know that agriculture doesn't give like it used to. Even in case of need, if the child goes to the father's house, the latter will redirect him to his mother. The clothing of the children, the feeding of the household, the small ways to feed the household are the responsibility of the woman. She is the one who needs the most support [...].

Women suffer enormously from this situation because they are the ones who manage to keep the household in balance. Today, even at the edge of the tarmac, they are the ones who display products in order to provide for the needs of the household because today if the child needs soap, clothing, food, if the father doesn't have any, it's up to us to do it. If our husband doesn't have it, it's up to us to do it. So, it is the women who suffer more from this situation [...]. Even the search for wood for the kitchen, it is the woman who does it. Even the solicitations related to the children's school, it is the woman, otherwise the child will not study".

FGD in Adallab, Tchirozérine, Agadez region

Box 12 : The migration of men, an amplifying effect of the constraints experienced by women

"The women are in a difficult situation because sometimes they are the ones who have to manage to feed their children. Because the husband can leave on an exodus and spend three to four months without sending anything. So the wife has to do everything to feed the children while waiting for the husband to send something. There are women who are not even in good boxes. Because the men can go four years without taking over their constructions. Even if they are made of banco, they have to be rebuilt from time to time, especially in the case of huts" [...].

"The women are in bad conditions because sometimes they are the ones who take care of themselves and their children that their husbands have left behind after they leave for the exodus. When the husband leaves the wife while she is pregnant, she does not eat well. The pregnant woman is always told to add a little cowpea to her sauce. Unfortunately, the food itself is lacking, especially the cowpea. She will therefore be satisfied with the sauce and salt alone. This is what she will eat in the evening before going to sleep. Sometimes the woman has to ask the neighbors for bran to make her evening meal. Because the husband can spend five to six months or even a year before coming home. During all this time, he neglects the wife. And it is after his return that he will manifest his power as head of the family. Men really have problems. Whatever situation we are in, the woman suffers more than the man" [...].

"Generally, men who want to go into exodus are not in peace when they think of the precarious situation in which they risk leaving their wives. If you leave a woman and her children when she can't afford to buy soap or food, you will never have a clear conscience [...].

"In migration it is the women who suffer. For example, she is married for two or three months, her husband leaves for the exodus to find the means of consumption for the household, she is there while he is in exodus for two or three years without seeing him. Will she feel well? Will her parents feel good? Not at all. This is a problem for women, and there are men who get married in their host countries while the woman is there with her parents. As the other one said, if the harvest is good, eight out of ten go home, but if it is not good, less than one out of ten go home. That's another problem, and there are some who can't even prepare, their husbands aren't there" [...].

FGD in Gao, Filingué, Tillabéri region

"Men leave huge difficulties for women. Sometimes they leave you even with a pregnancy and send nothing for the follow-up. For the ceremony, if you were lucky, they send you the baptism money a year later. Sometimes, some women are also forced to migrate or do domestic work to survive, while some activities are not even enough for you to buy gari" [...].

[...] "And some of them come back with diseases like tuberculosis. Everything they could get is finally spent on treatment. You went out to look for something to survive and in the end you come back with a disease, sometimes infecting your wife."

FGD in Simiri, Ouallam, Tillabéri region

Box 13 : Women's migration, a phenomenon that is growing under the effects of environmental degradation and climate change?

"Previously the migration of women is not known here. No women go on exodus. We had never seen that. All the rest and the millet harvested during the rainy season allow us to provide for everyone until the next season. But now that the rains are no longer good, even the women are emigrating. As the man himself is no longer able to provide for his wife, he feels obliged to let her go."

FGD Sargagui Garba, Loga, Dosso region

"You know, in the beginning, migration was a human affair. This is not the case today. Men and women alike, everyone leaves [...]. The place of the woman was at home. This is no longer the case today. We are now in a time when almost everyone leaves to migrate in search of livelihoods "

FGD in Gao, Flingué, Tillabéri

Overall, women in rural Niger are affected by climate change and environmental degradation in multiple ways :

- This has been made more difficult and often more painful by the scarcity of resources such as water and wood due to the depletion of wood resources, droughts, deterioration of land, etc., all of which contribute to greater precariousness in households and communities. The hardening of life greatly affects women within domestic spaces. The analysis of the FGDs shows that many women attribute the increase in male migration to their inability to find the minimum necessary for family survival in the villages ;
- In addition, many of the FGDs blame the increased migration of men on their inability to find the minimum necessary to ensure the survival of their families in the villages, and they find themselves with increased responsibilities on top of those that are already heavy due to the migration of men. The "absence" of men has a multiplier effect on the tasks incumbent on women, which can even be productive activities ;
- by migrating in their turn. This migration of women, which takes several forms (seasonal migration, rural exodus, departure for foreign countries), is even perceived by several interviewees as one of the most emblematic changes of climate change and environmental degradation in rural Niger. In some localities, such as Kantché, Magaria and Loga, this phenomenon has become more widespread and has led to social consequences that have been interpreted in different ways. The majority of female migrants head for urban centers.

Globally, men and women experience the effects of environmental/climate change differently. Lack of equity in the distribution of power and resources, poor access to inputs, equipment and information, while their responsibilities in household management increase, in the face of early depletion of food and scarcity of vital resources such as water and energy, mean that the burden is not shared equally. In a context of land shrinkage and demographic growth, women find themselves in a position of double vulnerability, due to unequal access to resources and their increasing responsibility for household management.

As for men, migration is at the heart of women's adaptation practices, but the configuration of migration dynamics and the roles played by the environment and climate change reveal discontinuities at the regional level, depending on the extent of environmental upheavals, the acuteness of the socio-economic precariousness prevailing in the localities of departure, the historicity of migration dynamics and their social anchoring, but also the sustainability of the endogenous responses of local populations to the multiple vulnerabilities they face.

2.4. ENVIRONMENTAL DEGRADATION AND CLIMATE CHANGE AS CATALYSTS FOR MIGRATION: REGIONAL VARIABILITY IN LINKAGES, DYNAMICS AND FLOWS

The impacts of climate change are multifaceted in Niger. All socio-economic sectors are at risk. The effects of climate disruption are felt in all regions of the country with overall constraints that can be summarized through challenges such as the recurrence of extreme climatic events against a backdrop of increased human activity.

The extent and intensity of vulnerabilities associated with climate change are not expressed in a uniform manner in Niger. As a result, the place given to migration in the face of environmental upheaval is not homogeneous between regions and, even within a region, contrasts are recorded in terms of the place attributed to migration as a response to environmental degradation and climate change.

In all regions of Niger, some of the changes linked to environmental degradation and climate change have been perceptible for decades and sometimes follow processes that can be slow and progressive (drought, desertification, land degradation, etc.). Others, more recent, are attributed to the consequences of global warming and can manifest themselves in a sudden and abrupt manner (floods, violent winds, bush fires, etc.), depending on the areas concerned. Whatever the diversity of these processes, their impact on ecosystems and communities is significant.

This impact is manifested in particular through the loss of habitats, the loss of crop land, the continued decline in agricultural soil productivity and the resulting decrease in agricultural yields that lead to recurrent food shortages, the disappearance of vegetation cover that exposes soils to water and wind erosion, while at the same time aggravating the energy wood crisis as well as water supply difficulties.

Niger's regions are therefore, to varying degrees, areas of mobility with varied causes and forms (internal migrations, international migrations, emigrations and immigrations). Mobility has thus always made it possible to maintain the balance between the population and the possibilities of the environment and to cope with the socio-economic difficulties that the populations were facing. However, mobility are a function of the types of environmental change, which can take the form of extreme and sudden events or continuous and slow degradation, which influence the forms and extent of these mobility.

In particular, the quantitative survey of rural households highlighted the roles attributed to environmental factors in migration. The graph below highlights the dominant role of the environmental factor in mobility in each of the six regions where the survey was conducted. The main reasons for people leaving as a result of environmental changes are lack of availability of natural resources for livelihoods (42%), more frequent droughts (21.4%), lack of livelihood opportunities (20.6%), and large fluctuations in rainfall preventing livelihood activities (15.8%). It should be noted that all of these reasons revolve around livelihoods.

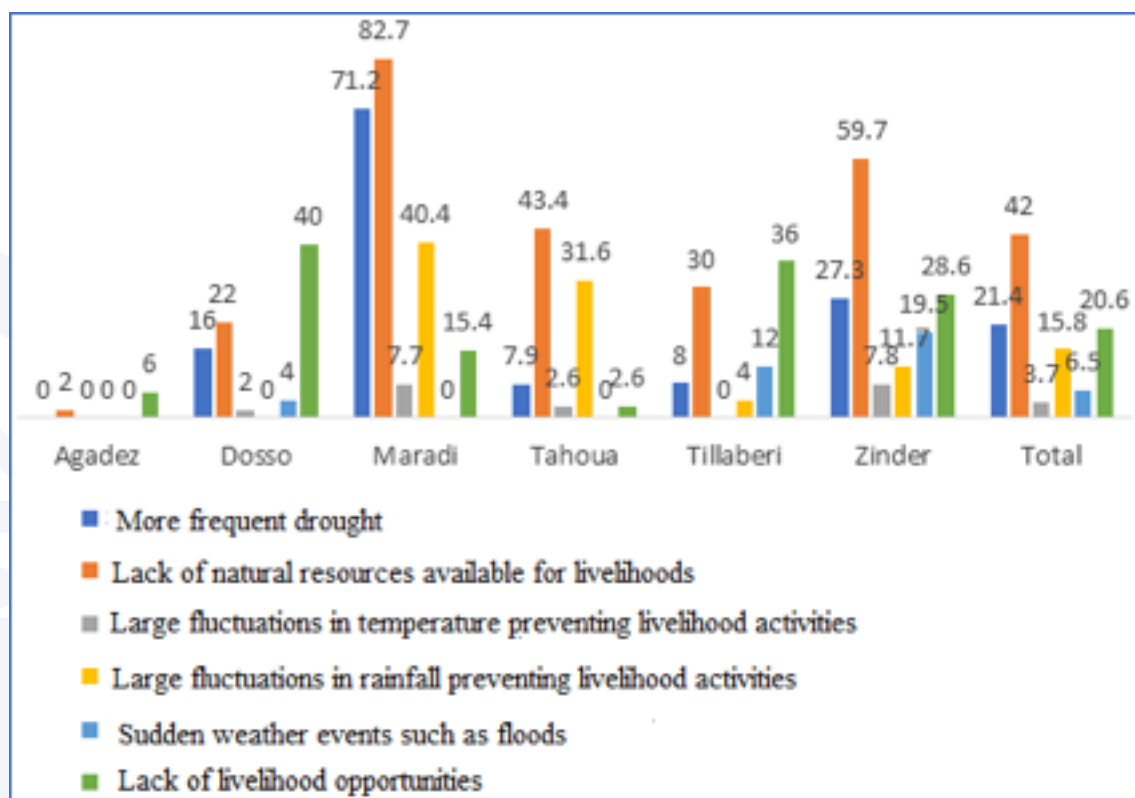
The lack of natural resources to develop subsistence activities is everywhere the main reason given for migration. This term refers mainly to the lack of resources to develop agricultural activities. It may refer to the lack of land or, where land is available, its level of degradation. It can also refer to the lack of fodder resources for livestock production. The lack of availability of natural resources is more evident in regions with an agro-pastoral vocation such as Maradi, Zinder and Tahoua, which are also important departure areas for internal and external migrants.

The second reason that stands out is the more frequent droughts. It is cited by 21.4% of respondents, although there are significant regional variations, which show the importance of this factor especially in agricultural regions such as Maradi (71.2%), Zinder (27.3%) and Dosso (16%). Large fluctuations in temperature as well as sudden climatic events such as floods are also considered factors in migration. Nationally, 3.5 percent and 6.5 percent of the reasons for migration are cited, respectively, with Tillabéri and Zinder standing out from the other regions in terms of the role of flooding as a driver of forced displacement. These two regions are the ones where flooding receives the highest percentage of responses, 12% and 19.5% respectively.

Floods are devastating for the population because they cause loss of human and animal life, destruction of habitat, food and land for cultivation. Because of their recurrence and destructive power, floods are among the sudden-onset climatic events that most highlight the close links between climate change and migration in Niger. They generate forced displacements and their management requires the implementation of planned relocation and disaster risk management actions that test Niger's public authorities every year.

Sudden events lead to sudden massive migratory movements, even if they are not always planned. In such situations, the consequences of environmental and particularly climatic phenomena on displacement are sudden and large proportions of the population leave, with the environment and even climate change clearly the direct cause. Slow changes, on the other hand, result in a gradual deterioration in the living conditions of the populations and give rise to individual and progressive movements that can, in turn, lead to family migration. In this case, droughts, land degradation, erosion and the advance of the desert are the main examples of these phenomena in the different regions of Niger.

Graph 68 : Regional singularities of the MECC nexus (%)



The mobility inherent in the consequences of environmental change are generally internal. They take place essentially within Niger, from one region to another, from the countryside to the cities. They are more rural than urban and thus fuel the rural exodus. Most of these movements are short term (circular, temporary, seasonal). Long-term and/or permanent mobility is rarer. The duration and forms of mobility also vary according to gender, with seasonal or temporary and circular mobility being more widely practiced by men than by women, who tend to stay longer in the places of arrival. International migration exists and is directed toward other African countries, mainly those bordering Niger, and toward coastal African countries.

Environmental change, and climate change in particular, acts above all as a factor in aggravating household poverty and food insecurity, as well as increasing underemployment, youth unemployment and accentuating the difficulties encountered by women. It destroys or weakens the already precarious balance of domestic economies and exacerbates the contextual vulnerability of households facing numerous difficulties (poverty, demographic growth, reduction of cultivable and grazing areas, obsolescence of agricultural equipment, problems of access to inputs and equipment, etc.). These are all factors that combine to create a feeling of "generalized disruption" as highlighted by the qualitative data. As a result, leaving becomes the last resort when all alternative strategies (crop diversification, diversification of sources of income and professional retraining on the spot, among others) are exhausted. Migration appears as a real safety net.

In the end, mobility, whether for women or men, is mainly a family and community matter insofar as it is often the families that designate the people who have to leave in order to find the alternative income necessary for household survival. The resources derived from migration, however paltry, thus strengthen the families, the main beneficiaries, in their position, by improving their livelihoods. In this respect, mobility plays the role of a regulating factor between population growth and the decline in natural resources. By going to seek resources elsewhere, migrants participate in reducing the pressure on the few resources available.

Table 8 : Synoptic overview of environmental vulnerabilities and migration dynamics in the eight regions of Niger

Region	Manifestations of environmental degradation and climate change and their consequences	Outstanding characteristics of migration dynamics (profiles, motivations, mobile and "immobile" groups, destinations)
Dosso	<ul style="list-style-type: none"> • Decrease in soil fertility • Invasion of ponds by aquatic plants • Advanced degradation of classified forests • Recurrent conflicts between farmers and herders • Strong advance of the agricultural front • Aging of plant species 	<p>Age of the rural exodus phenomenon</p> <p>Amplification of the phenomenon by the degradation of the environment and climate change</p> <p>Large-scale migration of women, men and young people: Main places of destination :</p> <ul style="list-style-type: none"> • Niamey • Dosso • Maradi • Tahoua • Mali • Burkina • Nigeria • Benin • Togo • Côte d'Ivoire • Ghana <p>International migration is not important for women. It is mainly a matter for men.</p> <p>Insistence in the verbatim on the social consequences of migration (divorce, loss of values)</p>
Maradi	<p>Demographic pressure</p> <p>Strong advance of the agricultural front</p> <p>Degradation of ecological niches leading to the disappearance of wildlife</p> <p>Abusive mowing of grass</p> <p>Invasion of undesirable plants</p> <p>Bush fires in the southern and central parts of the region</p> <p>Animal pressure in fallback areas</p>	<p>In addition to environmental upheavals and the consequences of climate change, there is growing insecurity in the southern part of the country, along the Niger-Nigeria border, and conflicts over the exploitation of natural resources (land).</p> <p>Important source of migrants (men, youth, women)</p> <p>Main destination: Niamey and other urban centers, Nigeria and other border countries</p> <p>Place of reception of internal (cities) and external migrants from Nigeria</p> <p>Influx of refugees due to the deteriorating security situation</p> <p>Environmental pressures caused by the presence of refugee populations and increased conflicts over natural resources</p>

Niamey	<p>Strong urbanization of the rural part</p> <p>Lack of legal status of green spaces</p> <p>Illegal occupation of wooded sites</p> <p>Strong pollution by garbage and plastic bags</p> <p>Lack of maintenance and protection of plantations</p> <p>Securing of spaces</p> <p>Development of quarries</p> <p>Silting of the Niger River</p> <p>Devastating floods</p>	<p>Extent of forced displacement caused by flooding each winter season</p> <p>Main destination for internal mobility</p> <p>Place of settlement of migrants from the West African sub-region</p> <p>Impacts on environmental resources due to heavy urbanization</p> <p>Increase in anthropic actions on ecosystems</p>
Tahoua	<p>Demographic pressure</p> <p>Rise of the agricultural front in pastoral areas</p> <p>Enclosure of lowland forest formations</p> <p>Proliferation of invasive plants</p> <p>Conflicts related to natural resource management</p> <p>Frequency of bush fires</p> <p>Land encroachment and strong progression of <i>koris</i></p>	<p>Deep historical roots of migration in this region</p> <p>Area of large-scale departure more marked during extreme climatic events such as droughts</p> <p>Agricultural and pastoral activities strongly affected by environmental degradation and climate change</p> <p>Profiles of the people who leave: young people and men</p> <p>Extent and duration of female migration in this region</p> <p>Vulnerability of women accentuated by climate change, with more women (with children) leaving for Niamey and border countries</p> <p>Massive rural exodus of young people main destinations:</p> <ul style="list-style-type: none"> • Niamey • Côte d'Ivoire • Libye • Nigeria • Algérie • Mali
Tillabéri	<p>Abusive clearing for the extension of crops</p> <p>Silting of the river and invasion of water points by proliferating plants</p> <p>Formation and development of ravines</p> <p>Backward movement of the agricultural front towards the North</p> <p>Strong degradation of ecosystems and loss of biodiversity</p> <p>Overexploitation of forest massifs for energy wood</p>	<p>Intermingling of environmental and security factors</p> <p>Place of departure of migrants towards urban centers and abroad (Algeria, Libya, Mali)</p> <p>Area of influx of refugees</p> <p>Forced displacement due to flooding</p> <p>Area of transhumance</p> <p>Host area for migrants attracted by opportunities related to gold panning</p>
Zinder	<p>Frequency of bush fires</p> <p>Extensive nature of livestock and pastoral pressure</p> <p>Demographic pressure on crop lands and forests</p> <p>Lowering of the water table</p> <p>Aging of gum tree stands</p> <p>Silting up of ponds, basins and cultivated land</p> <p>Conflicts between local actors for the management of natural resources</p> <p>Narrowing of passage corridors</p>	<p>Historical roots of migration</p> <p>Tradition of migration to urban centers and abroad</p> <p>Women's migration is increasing and is seen as a "marker" of climate change</p>

Agadez	Desert Frequency of bush fires Overgrazing and wind erosion Abusive mowing of grasslands Inaccessibility of the areas most affected by desertification Abusive wood cutting and anarchic clearing Extent of silting	Historical crossroads in terms of mobility in the Saharan space Important transit zone "Hotspot" for irregular migration Environmental impact linked to the presence of migrants in transit Entanglement of environmental, socio-economic and geopolitical factors (collapse of the Libyan state)
Diffa	Bush fires Invasion of aquatic plants Recurrent droughts and advance of the dune front Uncontrolled abusive cutting of trees Clearing with burning Divagation of livestock Silting up of grazing areas, cultivated lands and infrastructures Aging of gum trees	Large number of displaced persons due to the security situation in particular Intermingling environmental, security and socio-economic causes Environmental challenges related to the presence of thousands of refugees (access to natural resources for subsistence activities)

Source : Documentary synthesis and qualitative data analysis (focus groups and individual interviews)

In the present study, Niamey seems to be the favorite destination, followed by certain localities such as Maradi and Zinder, regardless of the site of origin. Precariousness is a central element in the reasons for migration and is intimately linked to environmental degradation and climate change. This is what has contributed to the rural exodus having a deep social and historical anchorage in migration systems in Niger. The considerable improvement in living conditions in rural areas could help reduce the social, economic and environmental costs of such mobility.

To achieve this, it is important to build the resilience of rural populations by supporting their own initiatives and endogenous practices to adapt to environmental degradation and climate change. The responses of the public authorities, which must be commensurate with the challenges, require that stakeholders (government, local communities, civil society organizations, development partners, etc.) coordinate their actions in order to achieve a planned adaptation that is capable of taking into account in the short, medium and long term the close links between migration, the environment and climate change in the Nigerien context.

These interventions should aim to strengthen the resilience of populations as it unfolds through their innovative practices and endogenous initiatives in response to climate change and environmental degradation.

2.5. “ONLY THE OWNER OF A HOUSE KNOWS WHERE THE HOLE IN THE ROOF IS “. INNOVATIVE PRACTICES AND ENDOGENOUS INITIATIVES IN RESPONSE TO THE CHALLENGES OF THE MECC NEXUS

Even though throughout the field surveys, the people we met showed an inclination to describe in the most realistic terms possible the multiple consequences of environmental degradation and climate change on their living conditions. They highlighted the central role of migration in the resilience dynamics of rural households. But the survey data can hardly be confined to these dimensions alone.

The respondents also highlighted the many innovative initiatives and endogenous practices that they are developing to implement adaptation actions in the face of what they describe as "generalized disruption" induced or amplified by climate change and environmental degradation. These are, for example, cultivation practices and changes in certain productive and domestic activities to adapt to "unpredictable rainfall", land degradation, depletion of wood resources, recurrent heat waves, chronic food insecurity, etc.

We have here as many actions that can serve as receptacles for future interventions to support the resilience dynamics of the Nigerien populations. Despite the scale and intensity of the constraints, the Nigerien people have shown remarkable dignity and resilience. They have accumulated knowledge and local processes to survive in a hostile environment, especially because of its aridity. These are all valuable elements for providing appropriate support to rural populations in particular, who have developed what could be called a "culture of resilience", as described by the Departmental Director of the Environment of Tessaoua :

"We have experienced devastating droughts, dramatic famines, destructive floods, locust invasions that have left nothing in place, but we have coped. We have risen. We have faced adversity" [...]. So in any case, even if you migrate there, you don't know what you're going to find. You might as well stay where you are and face adversity and take the solutions that are there [...]. We are attached to the land, as they say. The land of attachment, even the man is attached. In Hausa there is an adage that says so.

The data used to report on endogenous initiatives for resilience to climate change and environmental degradation comes from the analysis of the verbatim of focus groups and semi-structured interviews conducted mainly with resource persons at the level of the territorial administration, local authorities, technical services of the Nigerien State at the regional and departmental levels and civil society organizations. We also drew on reference documents on public policy in Niger in the areas of the environment, sustainable development, climate change adaptation and mitigation, the fight against desertification, the restoration of degraded lands, etc.

However, attention is focused on the actions and proposals for action formulated by local populations, especially by women, because as one man pointed out during the focus group in Sargagui: "only the owner of a house knows where his roof has a hole in it". It is therefore necessary to start from the needs of the populations, their own initiatives but also their capacity to act in order to define the means and interventions likely to contribute to the strengthening of the resilience of the populations to climate change and environmental degradation. It is also fundamental to promote a gender-based approach in order to identify the most relevant actions for women, youth and other vulnerable groups while articulating them to their socio-economic roles and productive activities and orienting them towards the removal of barriers to their social and economic participation.

In the table below, we review the main actions and proposals for action resulting from the field survey.

Table 9 : Summary of innovative practices, endogenous initiatives and proposals for action on climate change and environmental degradation

Initiative Practice Proposal	Description from the verbatim reports
Classified land clearing	"In each bush, we save one or two shrubs and cut the rest. And we do this every year. As the bushes grow, more are saved. So the field will always be thick and protect the soil from the winds. But if the field is deserted, the wind blows everything away."
Natural soil fertilization	"Some people transport humus to their fields on carts, on foot or on donkeys to enrich their fields."
Creation of half-moons, long benches	"We start on the very hard ground on slopes. I do the holes from the top to the bottom of the hill. I make a hole here and the next one I'll make by shifting it slightly. That way the rainwater that comes in here, continues on to here. That was how I did it that year. I don't even know how much it was. It stops the water and the debris."
"Agriculture with motorcycle"	Innovation introduced by a returning migrant "The plow connected to the motorcycle and you do agriculture [...]. The people who have been in migration, even if they don't bring money, they bring an activity that is beneficial here".
« Zais »	"We can make the zais and sow plants in them, the rains will water them and by the next hot season, they will be strong enough to survive for good."
Goose breeding in areas where this activity was not known before	"For example, I saw a young man who came back from Libya who is breeding geese, long-necked ducks. This has allowed that now almost, in all the courts you will see the geese".
Camel breeding	"Camel farming is the easiest farming. Whether there is straw or not, there are these trees, the spinach there. Loga is a very forested area. Climate change is impoverishing it, so we must adapt. In terms of livestock, that of the camel, goats, small ruminants there. Why the camel? Because you only have to give her water and she feeds herself. And the milk of the camel, you see in Niamey how it is marketed. It is becoming part of everyone's habits now."
Valorization, transformation and marketing of local products	"We need help to process our products and sell them better. The state must help us to always have the best price."
Adoption of environmentally friendly production practices	"We really need to create the conditions for people to produce in an environmentally friendly way. Because it's not about producing like that but really in a way to have a look at the environment, not to degrade the resources but rather to make sure that these resources are created and developed".

Development of market gardening in localities where potential exists (lowlands, waterways, retention basins)	<p>"On the ponds that are permanent, we can put the conditions for people to produce. Where there are possibilities to make spreading sills, we can do it. It is a system that allows us to retain water upstream and improve the water table, and there we make catch basins to allow people to produce."</p> <p>"Every rainy season, we say to ourselves that the water there causes a flood, but this water can be retained somewhere where it will be used at least for six months during the dry season. Where we can do off-season work. This is possible. These ponds are from south to north. All we have to do is go north of Tessaoua and create a kind of reservoir where all this water will be released and used. This will solve the problem of flooding and secondly, it will increase economic activity by doing off-season work."</p> <p>"It will be enough to invest in agriculture and create the conditions so that during the dry season, people can carry out their economic activities in the market gardening sites, through all the agricultural projects that can ensure that the able-bodied are there."</p>
Soil recovery	<p>"There are already people digging these little holes in their fields. They make them on dry land and they put manure in them. They sow seeds in them. At the end of the rainy season, they are very satisfied."</p>
Creation of commercial circuits allowing a protection of the producers	<p>"It is the government that must mobilize in this sense, considering for example the production of cowpeas. We bazaar our productions at 10 or 15 thousand during the harvests. But today the bag costs 37 thousand francs. If only the government would pay 25,000 and sell it to us today at 30,000 francs, that would be fine. And you know that the government can pay and resell to the poor without looking for profit" [...].</p> <p>"But today foreign countries are buying it. While specifying that the Nigerian variety is the best compared to that of countries like Ghana, Nigeria and Mali. That's what they pay for. But if the government gets involved by expressing its willingness to pay for the products, even if it does not buy, the speculators will pay a better price to the producers."</p>
Directing the benefits of migration towards the development of productive activities	<p>"Migrants should continue to support their families or buy materials to encourage the work we do at home. And not to buy big pants or phones of 100 thousand or 80 thousand and put in the pocket to listen. We ask them to think of their parents who have supported them. Without them, they would not be what they are today. Let them think that one day they will be like them. Everyone wants their home, their village or their country to be ranked first."</p> <p>"There are migrants who do their best to help the village. We have people from the village who have built wells for the villagers, which have greatly benefited us by reducing our suffering from water."</p>
Cow dung as energy instead of firewood	<p>"The cow's purse has many virtues that the breeders know well. It is used as energy for cooking. It is also used to protect habitats,"</p>
Cattle fattening	<p>"We need help to get into cattle fattening, which has a lot of potential. As agriculture does not allow us to have what we used to have, we need to develop other activities and fattening is an alternative to explore."</p>

Promote the development of income-generating activities, especially for women	"Irrigated agriculture and vocational training are alternatives to keep youth and women from moving. If the woman has an income-generating activity, she can sometimes help her husband to support the family".
Rotation crop	"Rotation to protect the soil and to increase yields. It's a fairly old practice."
More appropriate legislation and practices to encourage reforestation	"You see over here, there is a lot of trees. But here, the reason why we hold back from the trees is because of the water and forestry agents. You plant your trees and when you touch one of its branches, they tax you 5000 F. So how are we going to plant the trees again? I had a field in which I had planted no less than 30 acacia trees. But as soon as you cut a single branch, you will be arrested."
To promote artisanal activities and outlets for productions	Revaluation of trades that have disappeared, such as weavers and shoemakers
"Agricultural transhumance".	"Agricultural transhumance also depends on the variety of seeds. We go elsewhere to cultivate what cannot be cultivated here. For example, late millet can be grown here, but it is better to grow it elsewhere. There are products that need to be grown here, but other products are more productive here. So, we practice this transhumance to increase the agricultural yield."
Awareness and sustainable land management	"First of all, it is necessary to carry out awareness actions. It is necessary to implement sustainable land management practices. It is also necessary to initiate para-agricultural activities such as training in IGAs (income generating activities); the realization of spreading sills and mini dams with the support of the State and certain partners who work in sustainable land management, water mobilization and also to secure them. These actions can help to keep young people in the area."

Source.: Summary of focus groups and individual interviews

The analysis of the FGDs with women and the interviews with leaders of women's groups have made it possible to highlight a set of proposals that could serve as levers for supporting women's resilience dynamics, given the socio-economic role played by women, especially in a context of high male mobility. The support of initiatives could take several forms among which :

- support for the restoration of degraded land;
- support for market gardening in the lowlands;
- the introduction of cooking technologies that allow for significant savings in wood energy, which is essential to reduce deforestation and the destruction of plant formations;
- the promotion of agro-ecological activities centered on the principles of fertilization based on organic inputs (e.g. manure), protection by permanent cover (cover with living or dead plant material), water conservation, development of complementarities between agriculture and livestock, etc.;
- the promotion of reforestation activities centered on species that combine economic profitability and environmental protection;
- the promotion of small-scale development in the lowlands and of water retention systems with an ecological dimension to enable the development of market gardening in the dry season;
- the promotion of poultry farming and the breeding of adapted species but with a view to sustainable development

- the promotion of improved well systems and support for water control through infrastructures of an appropriate size, which are essential for the development of agriculture beyond the rainy season;
- the generalization of "green manure" (animal manure; composts, etc.);
- the development of community woods. For example, support to women's groups could be conditional on the development of a community reforestation component;
- the popularization of methods for the recovery of domestic waste (sorting, recovery and recycling);
- the establishment of biogas units through waste-to-energy operations (cow dung), the reuse of organic waste as cooking gas, the recycling of waste and the reuse of residues in agriculture, particularly market gardening;
- Support and capitalization of endogenous initiatives (drilling of wells, development of small rural boreholes using solar energy);
- the promotion of solar energy development.

We have here a diversity of endogenous proposals that can serve as a basis for projects that could be implemented to support community resilience to environmental degradation and climate change in Niger. These proposals are in line with the perspectives favored by the Nigerien authorities, which emphasize the fight against desertification, the restoration of degraded land, the promotion of rural water supply, the introduction of appropriate technological innovations, the fight against poverty, etc.

For some of the people interviewed, the solutions must be locally based in order to truly speak of resilience dynamics. For them, migration should not be at the center of this resilience, but rather the actions carried out by the people who have stayed behind and who are trying to cope with the adversities linked to environmental degradation and climate change. The following words from the Departmental Director of Civil Status, Migration and Refugees of Loga summarize this discourse.

"Migration? No, it's not an adaptation because it means that the person is fleeing. But you talk about resilience. I'm at home, that's the change. How am I going to resist that? But as soon as there's an exodus, it's a leak. We no longer have resilience. We are fleeing the situation. But stabilizing them here, having a livelihood. That is resilience against climate change. And that is what we want.."

The populations we met emphasized the urgency of fighting against climate change, but above all of involving them in this fight by supporting their own resilience dynamics. Developing rural localities, improving living conditions, encouraging the emergence of sustainable dynamics of women's empowerment, promoting income-generating activities but with a focus on the preservation of natural resources, supporting women in viable and ecologically sustainable economic projects, etc., are all avenues to be explored in order to improve the resilience of rural households to climate change and environmental degradation.

Conclusion

The main objective of this study was to analyze the links between the Migration, Environment and Climate Change (MECC) nexus in Niger. Using a methodological approach based on a questionnaire survey of 355 rural households and a quantitative survey of 147 internal migrants in Niamey, as well as 14 focus groups and 24 individual interviews with local populations and institutional and community actors, the study analyzed the impacts of climate change on migration. It also highlighted the multiple faces of environmental degradation in Niger and the diverse and visible impacts of climate change on ecosystems, activities and social, economic, ecological and institutional dynamics in areas marked by their real vulnerability to climate risks.

Niger is now presented as a "hotspot" for climate change. The data from our surveys, despite their limited scope, give an empirical outline to this vulnerability by relaying the perceptions of local populations on climate change, its effects on their lives and by reporting on the adaptation practices they deploy. The results of the study confirm that environmental degradation and climate change play an important role in migration dynamics. They also show an awareness of the reality of climate change and the extent of environmental degradation.

Several "empirical markers" attest, in the eyes of the populations, to the evidence of climate change, which is synonymous for them with a "generalized disruption" generating more uncertainties and constraints. Several dimensions have been presented as emblematic of environmental and climatic changes. They are related to the disruption of the rainfall cycle, the recurrence of droughts, the accentuation of heat episodes, the frequency of devastating floods, the denudation of landscapes, the impoverishment of the soil, etc. The majority of respondents agree on the negative consequences of these changes, which are more pronounced in rural areas.

Environmental and climatic changes contribute to a precariousness of living conditions by undermining the foundations of rural economies. By affecting agriculture, livestock, fishing and contributing to further land degradation, these changes go hand in hand with an increased precariousness of living conditions for rural households in a context where the public authorities have difficulty in responding effectively to their basic needs in the areas of food security, education, health, communication channels, security, access to sufficient and stable income, etc. In response to this situation, migration has emerged as a means of adaptation to environmental degradation and climate change.

The study highlighted the multiple impacts of environmental degradation and climate change on women. With production activities heavily dependent on natural resources as well as responsibility for unpaid care (cooking, education, health and assistance to family members, cleaning, domestic chores such as finding water and wood products for cooking, etc.), women are seeing these burdens increase, especially in a context where men are forced to migrate to find ways to ensure survival in rural localities. This is why it is essential to put women at the heart of programs and projects to build resilience to environmental degradation and climate change.

The internal migrants interviewed in Niamey did not immediately recognize environmental degradation and climate change as predominant factors in their migration, focusing instead on the search for new socio-economic opportunities in the capital or the deterioration of their socio-economic and professional situation in their locality of origin. However, behind these motives lie direct and indirect links with the environment and climate change. This situation illustrates the difficulty of isolating environmental factors from other factors (economic, social, institutional, political, cultural, security, etc.) in the analysis of the MECC nexus.

The socio-economic situation thus remains a key driver of internal and external migration, but environmental degradation contributes to this migration, especially when the source of family income depends on the primary sector. The consequences of environmental degradation and climate change are therefore added to structural

and cyclical constraints in rural localities vulnerable to climate change in Niger. Migration dynamics highlight an aggregation effect of environmental, climatic, socio-economic factors, etc. in their explanation and development. As for the role of migration as a practice of adaptation to climate and environmental change, we noted a near-consensus in the responses of those surveyed. Emigration is considered a strategy for adapting to environmental degradation and climate change because it allows the populations affected by these constraints to obtain other income for subsistence.

Implementing actions in response to migration dynamics is tantamount to promoting development processes that are resilient to climate change. The promotion of development activities adapted to climate change and taking into account gender dynamics is essential in the localities of departure to be able to act on internal and external mobility. To implement sustainable solutions, actions have been identified in this study. They are linked to the need to promote development actions centered, among other things, on the valorization of local resources, the support of innovative practices and endogenous initiatives of adaptation to environmental upheavals, the fight against food insecurity, and the improvement of living conditions, all in articulation with the priorities of the Nigerien public authorities in the areas of the environment, sustainable development, migration, the restoration of degraded land, the fight against desertification and the fight against poverty.





Drilling in the desert, Assamaka, 2019 / Credit IOM

Recommendations

At the end of this baseline study on the MECC nexus in Niger, several recommendations can be made. They concern both adaptation to environmental change and the reduction of the risk of environmental disasters. These recommendations aim to support and promote the adaptation of populations to environmental changes, but also to manage and anticipate current and future transformations.

To strengthen the resilience of Niger's territories and communities to environmental and climatic risks, it is necessary to consider several series of measures that have as a common denominator the significant improvement of the living conditions of the populations and the development of economic and professional opportunities in the areas of departure and reception.

a) Recommendations to the State of Niger and its deconcentrated and decentralized structures :

1. Implement intensive programs to improve the living environment, particularly in rural areas. Access to drinking water and energy, improved health and education conditions, food security, optimal opening up of rural localities, and the promotion of socioeconomic activities linked to urban and rural markets would have direct effects on migration dynamics;
2. Substantially strengthen the research capacity and data collection system on the MECC nexus by building the capacity of universities, government institutions, research centers and civil society, etc., to produce studies and knowledge on the MECC nexus, promote empirical research to document the various dimensions of these linkages and serve as a basis for policies, programs and projects in this area;
3. Integrating the MECC nexus into policy and planning documents. Given the current and future importance of this nexus, it is essential to take it into account in public policy documents at both the national and territorial levels. The effort to integrate the MECC nexus must also concern strategic documents in the field of the environment and migration. It should also be extended to other strategic sectors (agriculture, forestry, housing, livestock, water, decentralization, land use planning, social policy, sanitation, disaster risk reduction, etc.) because of the impact of migration dynamics on these sectors. When they are revised, public policy documents such as Niger's National Migration Policy and National Border Management Policy should be given a place commensurate with the importance of the issues and challenges related to the MECC nexus in Niger;
4. Strengthen the policy, legal, decision-making and institutional frameworks for MECC through the establishment of mechanisms and strategies for anticipation, prevention and management of risks and disasters related to sudden and slow onset events in Niger, as well as planned relocation. It is essential to strengthen the capacities of governmental and territorial actors in charge of these issues while ensuring better institutional coordination;
5. Ensure that the gender approach (taking into account inequalities based on gender relations and aiming to correct them) is effectively taken into account at all important decision-making stages (local, regional, national and international levels), in the development, planning, implementation, monitoring and evaluation of programs, policies and actions in the area of the MECC nexus;

6. Valuing local knowledge and endogenous initiatives to fight against environmental degradation and climate change. Nigerien populations have always demonstrated great resilience to environmental shocks, particularly droughts, by developing adaptive practices based on their endogenous knowledge and their own know-how to, for example, restore degraded land, fight against erosion and adapt to the unpredictability of rain cycles. This endogenous know-how and knowledge should thus serve as the basis for government interventions to strengthen the resilience of populations to the vulnerabilities induced and/or amplified by climate change;
7. Capitalize on and strengthen endogenous initiatives to combat climate change, in particular those carried out by women and youth through the development of projects that reconcile economic profitability and ecological viability through, for example, the development of agro-ecological practices, arboriculture, integrated community farms, animal husbandry, processing of agricultural products, fish farming, marketing, etc;
8. Support women's initiatives for the establishment of village nurseries and community market gardens through technical and logistical support and institutional support (linking with partners in Niger and abroad to share experiences, knowledge and practices);
9. To support the actions of women and youth in promoting initiatives in the field of the green economy. These projects, which may concern the recycling of domestic waste, innovations in the field of social economy, handicrafts, processing of agricultural products, etc., could thus serve as a model effect to demonstrate to women and young people tempted by migration the locally available potentialities and the socio-economic opportunities they can lead to;
10. Promote solar energy or, failing that, improved stoves in rural areas to reduce pressure on natural resources, especially those used as the main source of energy by households to prepare meals;
11. Promote the development of solid value chains around non-timber forest products (e.g. natural fruits) through technical (especially in the area of processing) and commercial capacity building of women's groups active in the development of these resources, which are now in high demand in the sub-region and on the world market;
12. Support the development of ecological projects for the recovery, reuse and recycling of household waste;
13. Develop a territorialized framework for guiding interventions by increasing the involvement of structures in charge of land use planning and local authorities in order to achieve a territorialization of the management of issues and challenges related to the MECC nexus in the various regions of Niger. The planning process at the national and territorial levels should henceforth be "sensitive to the MECC nexus";
14. Develop the primary sectors, in particular agriculture and livestock, to make rural areas attractive and thus contribute to curbing migration flows to the cities. Agricultural activity will continue to be the driving force of Niger's economy for a long time to come and the main provider of food and income. This study has shown that one of the essential conditions for the adaptation and resilience of the communities concerned is the promotion of agricultural and pastoral activities capable of ensuring food security and providing decent and sustainable

incomes for the populations to meet their needs. Thus, promoting climate change resilient agriculture and livestock would clearly contribute to influencing migration dynamics in the different regions of Niger;

15. Take advantage of financing mechanisms in the development of the green economy, sustainable finance, sustainable development, and international cooperation to implement development policies and strategies with an ecological dimension in the localities most affected by environmental degradation in Niger;
16. Define appropriate frameworks and mechanisms for managing conflicts related to natural resources. Climate change has the direct effect of multiplying these types of conflicts due to the exacerbation of competition caused by the scarcity of natural resources. This would make it possible to avoid the security and socio-economic dimensions being added to environmental factors in migration dynamics;
17. Implement programs and projects to combat environmental degradation and climate change. Niger has numerous legislative texts, strategic documents and action plans in the area of climate change that are relatively ambitious and in line with its international commitments and current challenges. It is often the actual implementation that is the main obstacle. Niger has, through the CNEDD, a structure with recognized expertise on all issues related to the environment, sustainable development, etc. It has produced several quality documents proposing a fine analysis of the issues and identifying courses of action to reduce environmental vulnerabilities, the implementation of which could greatly contribute to curbing the harmful effects of environmental degradation and climate change and strengthening the resilience of vulnerable communities. To this end, it is essential that sustained attention be given to migration issues in future documents to be developed in the field of environment and sustainable development. It is essential that what could be called a "MECC reflex" be established, consisting of systematically taking into account issues related to migration, the environment and climate change in each revision process of a political, institutional and legal document;
18. Intensify sub-regional cooperation in the area of MECC, especially since the challenges cannot be confined to the national level because mobility takes place essentially within the West African sub-region, but also because of the transboundary nature of climate change and environmental degradation. MECC policies, programs and projects would benefit from an approach based on stronger coordination of initiatives. This cooperation should also involve harmonizing national legislation and policies on the environment, natural resource management, migration, etc. The sub-regional organizations of which Niger is a member, such as ECOWAS, WAEMU, CILSS, the Niger Basin Authority (NBA), the Great Green Wall (GGW), etc., should thus serve as frameworks for the implementation of these initiatives, which should be supported by technical and financial partners.

b) Recommendations to the IOM :

1. Intensify efforts to integrate the MECC nexus into policy processes in Niger, the Sahel and West Africa, contributing to a better institutional recognition of the singularities of environmental and climate change related migration and the need to develop appropriate responses to the new challenges it brings;
2. Support the development of the capacity of practitioners and policy makers in Niger to manage, in practice, the complex linkages between migration, environment and climate change;
3. Support efforts to improve data and knowledge on the linkages of the MECC nexus through further research with a particular focus on case studies, disaster-related displacement and forced displacement, and the identification of relevant indicators. Gender impact on women and gender analysis will be central to the data and knowledge generation processes aimed at better understanding to act for greater community resilience;
4. Support the strengthening of coherence and institutional capacities in the areas of migration, climate change and the environment, through the production of data and knowledge, the exchange of good practices and the development of expertise in West and Central Africa;
5. Support the development and consolidation of partnerships to improve cooperation and understanding of the MECC at all levels (government, civil society, private sector, universities, etc.);
6. Implement, in partnership with the Nigerien government and local authorities, projects to strengthen the resilience of rural communities to climate change based on the results of the study and a mapping of the initial zones. These projects should aim to support endogenous initiatives to adapt to environmental degradation and climate change with a particular focus on experiences that can create green jobs;
7. Support case studies based on a sub-regional and regional approach to better inform and harmonize sub-regional and regional policies and strategies on climate change and migration.
8. Increase the visibility of issues related to the MECC nexus in order to promote a balanced approach to human mobility, the environment and climate change, while respecting human rights.

c) Recommendations to international organizations and development agencies :

1. Support processes aimed at integrating the MECC nexus into their policies and strategies in favor of the Nigerien State by taking into account the issues and challenges related to environmental migration and their current and future impacts at the sub-regional, regional and continental levels;
2. Contribute to the development of data and knowledge on the MECC nexus by providing appropriate support to increase the capacity of government institutions and research structures in this area. This support could take the form of setting up research programs and surveys to obtain detailed evidence on the multiple dimensions of migration linked to the environment and climate change, with a particular focus on forced displacement, but also the facilitation of partnerships between Nigerien institutions and those of countries that are sufficiently equipped to manage these types of displacement;
3. To support governmental efforts in the fight against climate change and environmental degradation, while ensuring better coordination of actions to avoid redundancy and duplication in interventions;
4. Support Niger (State and local authorities) in its efforts to integrate climate migration into development policies and plans. It is essential that national government agencies integrate the climate migration dimension into all aspects of public action. To ensure the resilience and development prospects of all stakeholders, actions must be taken at each phase of migration: before, during and after. Government agencies and local authorities need guidance, technical assistance and capacity building to develop national and local laws, policies and strategies consistent with sub-regional, regional, continental and international frameworks related to the MECC nexus;
5. Support the strengthening of capacities, skills and expertise of the deconcentrated services of the Nigerien State, local authorities, the academic and research community and civil society organizations on the MECC nexus through support for the production of knowledge and data to better highlight the singularities of environment and climate change related migration in the Nigerien context. It is important to support research structures currently active in the field of migration to integrate the MECC nexus into their research agenda, to develop research programs in this field and to establish scientific collaborations at the sub-regional, regional, continental and international levels;
6. To support the realization of development projects making it possible to reinforce the resilience of rural and urban populations in the face of climate change by linking them to national priorities, particularly in the fields of combating desertification and restoring degraded land;
7. Contribute to the implementation of adaptation and mitigation measures as defined in Niger's new Nationally Determined Contribution (NDC) document;
8. Support the development of sustainable finance through the promotion of socially and environmentally responsible investments, particularly in highly degraded mining areas where the environmental costs associated with resource exploitation must be taken into account and mechanisms must be put in place to finance actions to mitigate environmental damage;

9. Support the development of the green economy and the valorization of the potential offered by the blue economy (Niger River, rivers, lakes, groundwater, ponds, etc.) through the promotion of activities allowing the development of value chains around the resources of this niche (e.g., fish farming, processing of fish products, etc.) which offers important economic opportunities for rural Nigerien households. This support could be provided through the development of a "sustainable fisheries" program, which offers important economic opportunities for rural Nigerien households, but production practices must be based on resilience and sustainability in a perspective of reconciling socio-economic profitability and preservation of resources and the eco-system. This support could be done through the contribution to the financing of pilot projects in the fields of the green and blue economy with a sustained attention to projects targeting women's organizations and youth.

d) Recommendations to civil society organizations and populations :

1. Implement actions based on the integration of adaptation to environmental degradation and climate change into local development planning and the implementation of concrete actions to benefit communities, especially the most vulnerable;
2. Scale up climate change resilience efforts by increasing endogenous adaptation initiatives;
3. Seize the opportunities available in the field of climate finance and the green economy, which are currently niches for financing the implementation of projects based on reconciling economic profitability and sustainable development;
4. Reduce actions that contribute to environmental degradation because concern for environmental protection should not be limited to prosperous countries. Populations must be made more aware of the role of human actions in environmental degradation and thus be led to develop actions to reduce their pressure on natural resources by providing them with sustainable and accessible alternatives;
5. To develop interventions in the field of environmental education and awareness campaigns oriented towards the protection of the environment, the improvement of the living environment and the revitalization of rural areas in particular.

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