

# THE ROLE OF CAPACITY DEVELOPMENT IN INTERNATIONAL COOPERATION PROJECTS: EVIDENCE FROM THE IGAD REGION

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#### **Abstract**

La regione Igad è considerata una delle più vulnerabili sia alla variabilità climatica naturale sia ai cambiamenti climatici. Inoltre, la vulnerabilità delle popolazioni locali è aggravata da altri fattori critici come l'instabilità sociale e politica e le precarie condizioni economiche. Pertanto, è fondamentale sviluppare un approccio olistico, volto sia a ridurre la vulnerabilità sia ad aumentare le capacità istituzionali e organizzative per la gestione del rischio. Questo contributo presenta una parte delle attività realizzate nell'ambito di un progetto di sviluppo internazionale incentrato sulla riduzione del rischio di sfollamento da alluvione nella regione Igad. Le relative attività si basano su un approccio di capacity development. Nel progetto è stato scelto un agent-based-model per testare l'impatto delle politiche in materia di sfollamento e informare i responsabili politici grazie a un processo reiterativo.

The Igad region is considered one of the most vulnerable to both natural climate variability and climate change. Moreover, local people's vulnerability is compounded by other critical factors such as social and political instability, poor economic conditions. Thus, it is fundamental to develop a holistic approach, aimed both at reducing vulnerability and increasing institutional and organizational capacities to manage risk. This contribution presents part of the activities implemented within an international project focused on flood displacement risk reduction in the Igad region. Related activities are based on a capacity development approach. In the project, an agent-based model was chosen for testing the impact of policies on human displacement and informing policy-makers thanks to a reiterative process.

## **Keywords**

Capacity development, Vulnerability, Risk reduction, Disaster displacement, Climate change.

#### Introduction

The Intergovernmental Authority on Development (Igad) - an organization bringing together several countries of the Horn of Africa - is based in a region considered as one of the most vulnerable to both natural climate variability and climate change, phenomena that induce an increase in the frequency and intensity of extreme events (Ipcc, 2019a; 2019b; 2022). Livelihoods and incomes of people in the region are mainly linked to agriculture, furthermore, the area is often subjected to conflict, political instability, and humanitarian crises. Mobility within Igad is also extremely relevant, mainly due to intense floods and consequent loss of livelihood. The risk of being displaced



does not just depend on the intensity of extreme events, but on a complex combination of cultural, social, economic, political and environmental factors, which affect the level of people's vulnerability (Brenn et al., 2022; Igad, 2022). The focus on specific contexts on a local geographical scale is a key factor for a better and more valuable understanding of interactions between the above-mentioned factors.

It is therefore of paramount importance to adopt a holistic and trans-disciplinary approach, aimed both at reducing this vulnerability and increasing institutional and organizational capacities to manage risk in a timely manner. This implies the need to systematize knowledge and skills from different sectors and actors that can strengthen local capacities to understand and respond to these complex phenomena. In this regard, the capacity development approach comes to our aid, offering an international cooperation approach that responds to these needs.

This contribution aims to present some relevant activities and findings from a development project carried out in the Igad region implemented by the Platform on Disaster Displacement (Pdd) and Cima Research Foundation (Cima), whose recipients are the Intergovernmental Authority on Development (Igad) and the Igad Climate Prediction and Applications Centre (Icpac)<sup>1</sup>.

The article will explore how and why Capacity Development has been pivotal for addressing the above-mentioned complexities concerning extreme events and mobility in the area considered in the project. This contribution will show how scenarios obtained using an agent-based model (Abm) can inform stakeholders about the implementation of context-specific policies and strategies.

The first part of the article is devoted to a rapid overview of development cooperation approaches, considering the transition from Development Aid to Capacity Building and Capacity Development. The following section focuses firstly on the Igad region, then on the capacity development project implemented in this context; finally, a focus on the Abm, considering its relations with Capacity Development. The contribution ends with a concise conclusion.

#### **Approaches to development cooperation**

From Development Aid to Capacity Building

Capacity development is considered an essential instrument of development cooperation, a long-term process for complex changes in behavior patterns, knowledge, motivation, and capacity at global, national, and local levels. It is defined as:

"The process by which people, organizations, and society systematically stimulate and develop their capacities over time to achieve social and economic goals. It is a concept that extends the term of capacity-building to encompass all aspects of creating and sustaining capacity growth over time. It involves learning and various types of training, but also

<sup>&</sup>lt;sup>1</sup> https://migrationnetwork.un.org/sites/g/files/tmzbdl416/files/resources\_files/regional\_igad\_1.pdf.



continuous efforts to develop institutions, political awareness, financial resources, technology systems, and the wider enabling environment" (Unga, 2016).

Before the concept of capacity development arose in the late 1990s, different approaches had been applied in development cooperation (Figure 1).



Figure 1 – Different approaches to development cooperation over time

The concept of development aid, which goes back to the colonial era at the turn of the twentieth century, refers to *funds lent or granted by developed countries to developing countries*, in order to invest in development. Critical authors of this approach mention that this type of aid could result in *creating dependence on foreign aid* and, in addition, when funds run out, it is likely that projects will end too (Undp, 2009).

Another type of development cooperation is known as technical assistance, characterized by the fact that foreign experts go into a certain country to operate their own projects, which they expect to yield similar results to those seen in developed countries. In this case, projects are not always connected with local goals and priorities, and they may create dependence on foreign experts (Undp, 2009).

Technical cooperation, on the other end, gives greater emphasis on training and transferring knowledge and it's based on national priorities and policies. In this case, local expertise is enhanced, and local needs are considered, but being as it is often driven by outside forces, local institutions often miss the opportunity to develop their own capacities. Technical cooperation had often not made a lasting impact on local institutions and communities (Undp, 2009). Both technical assistance and technical cooperation are linked to the capacity-building approach, which implies a process that tends to support the initial stages of building or creating capacities, based on the assumption that there are no existing capacities to start from (Undp, 2008). In fact, the word "building" suggests a process starting with a plain surface and involving the erection of a completely new structure.

## The capacity development approach

The concept of capacity development took hold in the late 1990s, defining a new development paradigm, which includes the concept of capacity building and goes beyond, towards an endogenous and sustainable process of change. While capacity building implies building something new, not directly involving local actors and assuming that there are no existing capacities to start from, capacity development is a process starting from local actors themselves, considering their



existing capacities and needs. Implementers have the role of supporting and facilitating the process, but the ownership, commitment, and desire for change must be at the local level. Even if there are no capacities to start from, the process and the activities must be based on real needs at the local level and actors who wish to develop their capacities have to be directly involved. People, communities, and institutions can realize their full potential when the means of development are home-grown, long-term, generated, and managed by recipients, with the support of the implanting partners.

The capacity development approach has shown to produce impacts, due to genuine knowledge sharing between implementers and local actors, active cooperation, exchange of ideas, and trust. It leads to a change of perspective, from a top-down to a bottom-up and partnership approach, reinforcing people, communities, and local institutions.

The capacity development concept has three dimensions: four core issues, three capacity levels or points of entry, and two capacity types (Undp, 2009; Undrr, 2018, Section II).

The core issues are the domains in which most of the change in capacity happens:

- i) Institutional arrangements, i.e., policies, practices, and systems that allow for the functioning of an organization or group.
- ii) Leadership is the ability to influence, inspire and motivate others to achieve or go beyond their goals.
- iii) Knowledge refers to the creation and spreading of information and expertise, through formal methods, such as education and training, but also through direct life experience and on-the-job training.
- iv) Accountability refers to the fact that organizations and systems can monitor, learn, self-regulate, and adjust their behavior in interaction with those to whom they are accountable.

According to international experts and organizations, the three levels of capacity are the individual level, the organizational level, and the enabling environment level (Figure 2) (Undp, 2009; Undrr, 2018, Section II).

The first concerns the individual and his wealth of knowledge, skills, and experiences, which can be improved through training, education, or experience. The second refers to the internal structure of an organization, policies, and procedures, that determine its effectiveness and that can be strengthened with *ad hoc* strategies. The third is the broad context, the social system, which includes the institutional and legislative framework, rules, policies, and social norms. Not all the levels described above need to be considered for every project, as the project goal could be focused on strengthening just one or two of them. Ideally, capacity development should have an impact on



all three levels, directly or indirectly, in order to trigger a deep and sustainable change in the whole society.



Figure 2 – The three levels of capacity (based on Undp, 2009)

Thirdly, capacities are divided into functional and technical: the latter is associated with a specific area of competence, such as, for instance, disaster risk reduction; the former is related to management capacities needed to formulate, implement and review policies, strategies, programs, and projects (i.e. the capacity to engage stakeholders, to assess a situation and to define a vision, ability to formulate policies and strategies, to budget, manage and implement and to evaluate a specific project action). Functional capacities are not associated with a specific area of competence, but they are cross-cutting every project.

The capacity development approach is more and more requested and followed in international cooperation, including in the context of disaster risk reduction. Real and sustainable change, adaptation, disaster risk management, and reduction need knowledge that goes beyond the competence of experts alone and that values indigenous and local culture, social learning, and communication narrative (Lejano, Haque, Berkes, 2021). These elements are the basis of a coproduction approach, bringing together different knowledge and experiences in implementing projects, in order to jointly develop new, combined, and relevant methodologies and tools. A coproduction approach enhances local beneficiaries' autonomy and ownership at the local level.

The implementation of a capacity development approach is more and more common in the Disaster Risk Reduction domain, including in contexts severely affected by climate change and environmental extreme events. The African continent, and in particular the Igad region, are considered to be ideal for research considering the vulnerabilities and difficulties in the management of climate- and weather-related phenomena (Wbg, 2011).



### A capacity development project in the Igad region

The Igad region

The Intergovernmental Authority on Development (Igad) is one of the eight Regional Economic Communities (Recs) recognized by the African Union (Au) and it is composed of eight African Countries from the Horn of Africa, Nile Valley, and the African Great Lakes. The Member States are Djibouti, Ethiopia, Kenya, Somalia, South Sudan, Sudan, and Uganda<sup>2</sup>. The region includes areas of economic growth, political stability, and investment, on the one hand, and areas prone to conflict, political instability, humanitarian crises, and major environmental disasters on the other (Wbg, 2021). Floods, droughts, and cyclones are the most frequent and intense disasters affecting the region (Em-Dat database).

The Igad occupies an area of 5.2 million km<sup>2</sup>. 70% of it is Arid or Semi-Arid Land (Asal), receiving less than 600 mm of rainfall each year. The remaining 30% is characterized by different climatic regions and ecosystems, including rainforests, cool highlands, and swamp areas. Data shows that about 46% of the land is unproductive or marginal, 28% is occupied by permanent pastures, 19% by forests, and 7% by farmlands.<sup>3</sup>

The region is inhabited by more than 230 million people and the average population annual growth rate is about 2.3%<sup>4</sup>. Population density varies a lot across the region, depending on environmental, social, and economic elements, and it is particularly high in urban areas. About 57% of the whole population is employed in the agricultural sector, making their livelihood more directly dependent on natural resources and environmental change; 33% is employed in services; only 10% is employed in the industry sector<sup>5</sup>.

The Igad region is considered one of the most vulnerable to both natural climate variability and climate change, phenomena that induce an increase in the frequency and intensity of extreme events. Both sudden-onset extreme events, such as floods and cyclones, and slow-onset extreme events, such as droughts, are frequent and intense, affecting agricultural production, economic growth, and living conditions (Fao, 2019). The loss of the house and livelihood after an extreme event, and the loss of access to critical facilities in the longer term increase the probability of affected people to be displaced and looking for another place to live in (Brenn et al., 2022). The term disaster displacement refers to

a situation where people are forced to flee their homes or places of habitual residence due to a disaster or in order to avoid the impact of an immediate and foreseeable natural hazard. Forced displacements generally result from the fact that affected persons are exposed to a

<sup>&</sup>lt;sup>2</sup> Igad, <a href="https://igad.int">https://igad.int</a>

<sup>&</sup>lt;sup>3</sup> Idem.

<sup>&</sup>lt;sup>4</sup> Data were retrieved from the World Bank Database.

<sup>&</sup>lt;sup>5</sup> Idem.



natural hazard in situations where they are too vulnerable and lack the capacity to face its impacts (Nansen Initiative, 2015).

In the Igad region, forced displacement is a relevant and challenging issue, which has increased in terms of volume in the last years (Figure 3), due to a combination of political, socioeconomic, and environmental factors, including conflicts, environmental degradation, climate change, disasters, and poverty (Igad, 2021). Disasters, such as intense floods and droughts are causing extensive damage to people's livelihoods and affecting living conditions.

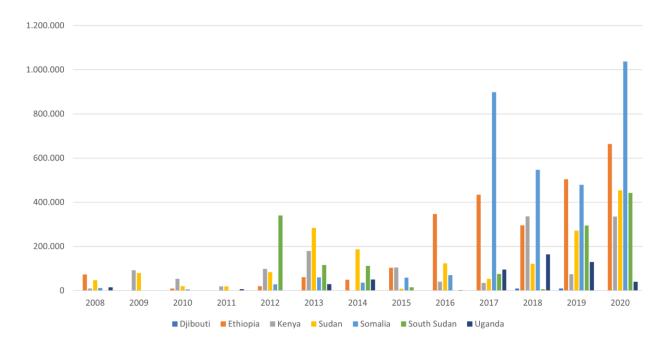


Figure 4 - New displacements associated with disasters in the Igad region (number of cases)<sup>6</sup>.

Mobility decisions do not just depend on the intensity of extreme events and environmental drivers but on a complex combination of social, economic, political, and environmental factors, which play a decisive role in affecting people's behavior. In addition to these drivers, personal characteristics, such as culture, wealth, and education, and external factors, namely obstacles and facilitators, have to be taken into account (Foresight, 2011).

A mathematical equation is used to estimate the risk of disaster displacement, as follows:

#### $Disaster\ Risk = Hazard\ x\ Exposure\ x\ Vulnerability$

The equation considers disaster risk to be the result of the multiplication of three components: hazard, which is the *phenomenon that may cause loss of life, injury, or other health impacts, property damage, social and economic disruption or environmental degradation*; exposure, defined

<sup>&</sup>lt;sup>6</sup> Data for Djibouti are available from 2018. Data for South Sudan are available from 2012. Data were retrieved from the Idmc database, <a href="https://www.internal-displacement.org/database/displacement-data">https://www.internal-displacement.org/database/displacement-data</a>



as the situation of people, infrastructure, housing, production capacities and other tangible human assets located in hazard-prone areas; and vulnerability, which refers to the conditions determined by physical, social, economic and environmental factors or processes, which increase the susceptibility of a community to the impact of hazards<sup>7</sup>.

The current approach for assessing vulnerability to disaster displacement takes into account only the housing component, considering people living in a house damaged over a certain threshold to be displaced. This component is crucial, considering that people losing access to their house need to find another shelter, either temporarily or permanently. However, other elements need to be considered in the vulnerability assessment, in order to have a better understanding of the problem and to assess the risk of being displaced more accurately. In addition to the housing component, livelihoods and access to critical facilities should be considered too, together with people's characteristics, experience, and risk perception.

It is therefore of paramount importance to adopt a holistic and trans-disciplinary approach, aiming at both reducing vulnerabilities in the context of extreme events and increasing institutional and organizational capacities to manage risk in a timely manner.

Developing a partnership in the region

A joint programme – Addressing Drivers and Facilitating Safe, Orderly and Regular Migration in the Contexts of Disasters and Climate Change in the Igad Region – has started in 2021, under the leadership of the United Nations<sup>8</sup>. It seeks to minimize the adverse drivers and structural factors that compel people to leave their country of origin, while also facilitating safe, orderly, and regular migration in the context of disasters, climate change and environmental degradation in the Igad region.

The programme is composed of four different pillars, each one addressing a specific challenge of human mobility in the context of disasters, the adverse effects of climate change and environmental degradation in the region: 1. *Data and Knowledge*; 2. *National and Regional Policy Framework*; 3. *Disaster Displacement Preparedness*; 4. *Regular Migration Pathways*.

Pillar I, which is the focus of this contribution, intends to respond to the need to generate better data to better map, understand, predict, and address migration movements and the risk of displacement in the Igad region, in compliance with the *Global Compact for Migration* (2018). The project activities are inspired by several Sustainable Development Goals of the 2030 Agenda for Sustainable Development. A non-exhaustive list of them follows:

<sup>&</sup>lt;sup>7</sup> Italics from Undrr Terminology, https://www.undrr.org/terminology.

<sup>&</sup>lt;sup>8</sup> International Labour Organization (IIo); International Organization for Migration (Iom); United Nations High Commissioner for Refugees (Unhcr); United Nations Office for Project Services (Unops) with Platform on Disaster Displacement (Pdd).



SDGs Goal	Target				
1 - No poverty	5	a			
2 - No hunger	2	4			
10 - Reduced inequalities	7				
11 - Sustainable cities and communities	5	b			
13 - Climate action	1	2	3	a	b
16 - Peace, justice and strong institutions	6	7			
17 - Partnership for the goals	6	7	9	16	

Table 1 - Some of the Sdgs related to the project

The expected outcome is that national governments in the region have enhanced access to quality data and evidence on disaster displacement risk and on other forms of human mobility. National governments will be able to understand and use the tools, data, and models developed during the project, in compliance with the capacity development approach.

Pillar I of the Joint Programme includes different but interrelated activities aiming at better understanding the impact of disasters on human mobility, as a basis for implementing measures for reducing and managing displacement risk, at the local, national, and regional levels. Cima is the implementing partner, in collaboration with Pdd, Igad, and Icpac.

Output 1 is related to the development of methodologies and models to assess disaster displacement risk in the region, focusing on slow-onset events, namely floods and cyclones. In this context, the aforementioned disaster displacement risk equation was enriched by Cima, including additional elements in the new approach for assessing vulnerability (Figure 4). In this improved methodology, three components are considered in assessing the impact of disasters. The first one relates to the direct impact on houses, providing an estimate of the number of people who need to leave their homes or places of habitual residence. The second one considers the direct impact of a disaster on people's sources of livelihood, in particular in terms of loss of livestock, loss of crops, and income loss. The third one includes the indirect impacts of disasters on critical facilities and services, which are meant to affect people's mobility choices in the long term. People would need to find another location not only if they are directly affected by a disaster in the short-term, for example due to the loss of a house or livelihood, but also if they can no longer access critical infrastructure, such as educational and health facilities.

The new approach was applied to develop disaster displacement risk profiles for the Igad region, at the national and district levels, using a probabilistic model. The final risk profiles are expected to be used by policymakers to better define strategies for reducing risks and allocating resources in the region.













Flooded house

Loss of livestock

Loss of crops

Income loss

Indirect damages

Figure 4 - Additional elements in the new vulnerability approach developed by Cima.

Output 2 is related to the collection of relevant data in the Igad region and the development of a decision-making model to simulate people's behavior in different policy scenarios, in order to test the impact of policies and strategies on human displacement in the context of flood events. The choice to develop a decision-making model originated from the fact that there was still a poor understanding of the impact of sudden-onset events on displacement, and that there was a lack of understanding of the impact of policies and strategies on displacement in the region.

As it was already mentioned, disaster displacement is the result of a combination of different factors. The model implemented under this output intends to go beyond, including additional qualitative elements to the analysis, that have a role in people's decision-making process, namely risk perception, past experience, personal characteristics, and human interactions.

An agent-based model (Abm) is being developed, which is a computational model for simulating the actions and interactions of autonomous agent, in order to understand their impacts on the system as a whole (Gilbert, 2008). This methodology gives the possibility to model complex systems and heterogenous populations; to include qualitative elements in the analysis; to consider local characteristics; and to support decision-making. In our case, the aim is to understand the role of the aforementioned additional elements in the displacement dynamic. Furthermore, it simulates people's behaviors, and tests the impact of policies and strategies in a selected geographical context, in terms of displacement risk and disaster risk reduction. The Abm is thought to be a decision-making support tool because it will help to identify the priority measures to be implemented in the local context under consideration.

Output 3 states that Igad and Icpac will have enhanced capacities on the links between displacement and sudden-onset disasters in the region and on the use of developed methodologies and data for better assessing, managing, and reducing the risks related to disaster displacement. This last output is not intended to be separated from the others. Indeed, all the project activities are designed and implemented following a capacity development approach, which includes co-production, continuous discussions between partners, and sharing of methodologies and materials that can be used autonomously by involved stakeholders in the future.

Agent-based model and capacity development



The agent-based model under output 1.2 is not implemented in the whole Igad region, nor at the national or district level. The model is developed in a specific geographical context, that is a small bounded area inside one of the Igad Member States. The methodology will be ready to be applied in different other contexts in the region, after the conclusion of this project. The goal is to consider the specificities of the territory, the actual situation in which people are living in, residents' characteristics, experiences, and expectations in the context of flood and displacement.

Considering that each context is different, there cannot be a one-size-fits-all solution to the problem. Not only each Country is different from the others, from a political, social, economic, and environmental perspective, but also each village or city has its own peculiarities. In addition, the population living in each area is always heterogeneous, due to the fact that people have different cultures, behaviors, perceptions, expectations, and characteristics, such as economic status, educational level, properties, background, and adaptive capacity. These elements have an impact on mobility decisions in the context of flood events and need to be considered (Kniveton D., 2011). Even policies and strategies to deal with flood and displacement risks have to follow the abovementioned approach, not forgetting to consider local geographical and environmental aspects, culture, and political characteristics.

The agent-based model is developed to take into account these heterogeneous characteristics, modeling their impact on people's decision-making processes. It was designed to be context-specific and local-based, with the purpose of simulating how people would behave in different policy scenarios.

This Abm needed first-hand data collected in the pilot areas. The choice of the villages in which to conduct the research was made jointly by project partners, involving external organizations and authorities. The process started with a workshop, in which possible pilot areas were discussed. In that context, the Nile basin in Sudan was selected as the first pilot area for implementing the Abm. After the workshop, stakeholders in the field and Sudanese authorities were involved to identify the specific villages to focus on and where to collect data. The final choice of the pilot areas was jointly made, taking into account local experience and knowledge.

Data collection was carried out through semi-structured interviews and questionnaires. In the first case, representatives of Sudanese institutions and organizations were interviewed to better understand the flood and displacement situation in the area; policies already implemented; needs, and possible additional policies to reduce the flood and displacement risks. In the second case, a questionnaire was administered to a statistically significant sample of the population in the pilot areas, in order to collect not only data about households' characteristics (e.g., size and composition,



income, properties, access to goods and services), but also about their experience concerning past flood events and displacement; and their risk perception.

Data collected in the field from local institutions and populations were then used to inform the Abm and build the behavioral rules that govern the model's functioning. The resulting final scenarios will be used to inform local actors, who are expected to lead the desired change in society through policy implementation.

In this sense, the agent-based model could be an iterative tool for capacity enhancement and development at the local level. In the first phase of implementation, actual knowledge, experiences, and needs are integrated into the model and are used to characterize the agents and their behaviors. The obtained policy scenarios will foster change in the society under consideration, for example in terms of increased risk perception, reduced vulnerability, and displacement management. A second implementation of the Abm in the same area could represent the new situation and thus give a better understanding of the actual effectiveness of implemented policies. In conclusion, we can affirm that continuously updating the model with new data could trigger a virtuous circle of capacity development, involving institutions, local leaders, and the whole population, reducing displacement risk vulnerability and enhancing resilience.

### **Conclusion**

The process leading to the design and implementation of the Abm as well as its results are the consequence of a strong partnership, that has been strengthened over time. This partnership, which is in compliance with Sustainable Development Goal 17, is providing the parties involved - State and non-State actors; European and African researchers - an opportunity to combine skills and experiences in addressing the challenges represented by displacement in the context of disasters and climate change.



#### List of acronyms

Abm Agent-based model

Asal Arid or Semi-Arid Land

Au African Union

Cima Centro Internazionale in Monitoraggio Ambientale

Fao Food and Agriculture Organization

Icpac IGAD Climate Prediction & Applications Centre
Igad Intergovernmental Authority on Development

Ipcc Intergovernmental Panel on Climate Change

Pdd Platform on Disaster Displacement
Recs Regional Economic Communities
Sdgs Sustainable Development Goals

Undp United Nations Development Programme

Undrr United Nations Office for Disaster Risk Reduction

Unga Un General Assembly
Wbg World Bank Group

#### **Bibliography**

Brenn L., Mäkelä N., Panizza E., Amdihun A., Rudari R. (March 2022), "Developing partnership in the Igad region", Forced Migration Review, 69.

Fao (2021), "The impact of disasters and crises on agriculture and food security", Rome.

Foresight (2011), "Migration and Global Environmental Change. Final Project Report", The Government Office for Science, London.

Gilbert N. (2008), "Agent-based models", Sage Publications.

"Global Compact for Migration" (2018), adopted under the Unfccc.

Igad (2022), "Regional climate change strategy and action plan (2023-2030)".

Igad (2021), "Igad Migration Statistics Report".

Ipcc, Wgii (2022), "Impacts, Adaptation and Vulnerability".

Ipcc (2019a), Special Report, "Climate Change and Land".

Ipcc (2019b), Special Report, "Global Warming of 1.5°C".

Kniveton D., Smith C., Wood S. (2011), "Agent-based model simulations of future changes in migration flows for Burkina Faso", Global Environmental Change, 21S, pp. 34 – 40.

Lejano R.P, Haque C.E., Berkes F. (2021), "Co-production of risk knowledge and improvement of risk communication: a three-legged stool", International Journal of Disaster Risk Reduction, 64.



The Nansen Initiative (2015), "Global Consultation, Conference Report".

United Nations (2015), "The 2030 Agenda for Sustainable Development".

United Nations General Assembly (Unga) (2017), "Report of the open-ended intergovernmental expert working group on indicators and terminology relating to disaster risk reduction" (A/71/644), p. 12.

Undp (2009), "Capacity development: a Undp primer".

Undp (2008), "Capacity development – Practice note".

Undrr (2018), "Strategic approach to capacity development for implementation of the Sendai Framework for Disaster Risk Reduction".

World Bank Group - Wbg (2021), "Africa's pulse: an analysis of issues shaping Africa's economic future".