



(RESEARCH ARTICLE)



STRATEGIES AND LIMITATIONS OF FLOOD RISK REDUCTION BY NGOS IN THE MUNICIPALITY OF SÔ-AVA

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ABSTRACT

A plethora of NGOs have supported grassroots communities in Benin for several decades through interventions in natural risk management. This study aims to analyse the strategies developed by NGOs to reduce flood risk, as well as their limitations, in the municipality of Sô-Ava.

The methodological approach combined documentary research, direct observation and field surveys of 384 households. Results were analysed using the SWOT model.

The findings show that NGOs in the municipality of Sô-Ava intervene in several areas, namely education, water supply, health and sanitation. These interventions are materialised through infrastructure and equipment in each of these areas. Indeed, 35.87% of surveyed households report having benefited from NGO actions, 49.21% report having received technical support, 21.61% material support, and 29.16% financial assistance. However, these NGOs face various constraints that hinder their actions, including limited funding, a shortage of qualified staff, and a lack of coordination and solidarity among themselves.

In view of these problems, intervention by the State and its development partners, through capacity building and strengthening of the institutional framework, is essential.

Keywords: Municipality Of Sô-Ava, NGO Contribution, Reduction, Flood Risk.

1 INTRODUCTION

Natural hazards (floods, earthquakes, landslides, volcanic eruptions, etc.) occur today with increasing frequency across the globe, constantly threatening human life and causing immense material damage that hampers development efforts (Solofonirina, 2011, p.13). Since the 2001 assessments, extreme climatic phenomena have increased in frequency and intensity, particularly in Africa (IPCC, 2007, p.14). The progressive and unplanned occupation of floodplains in recent decades has created zones that are highly vulnerable, both for the population and for the various human settlements. In Benin, and particularly in the commune of Sô-Ava, flooding is linked to the hydrological dynamics driven by the flood

pulses of the Ouémé valley. According to Houédanou (2013, p.29), early high water levels followed by excessive overflow catch crops before maturity, disrupting or even halting economic activities. Under these conditions, NGOs are perceived as an alternative in the face of the difficulties encountered by vulnerable populations. Non-Governmental Organizations (NGOs) thus appear as key actors complementing government action through intervention strategies that are as diverse as they are varied (Yèyèvi and Tougan, 2008, p.9). For several years, a number of national and international NGOs have been operating in the municipality of Sô-Ava, focusing on the well-being of the population, particularly disaster victims, through a multitude of actions. However, these NGOs face enormous difficulties in carrying out their various functions.

1.1 Presentation of the Study Area

The municipality of Sô-Ava lies between 6°24' and 6°39' north latitude and between 2°21' and 2°31' east longitude. It is bordered to the north by the communes of Zè, Dangbo and Adjohoun, to the south by the municipality of Cotonou, to the east by the municipality of Aguégués, and to the west by the municipality of Abomey-Calavi (Figure 1).

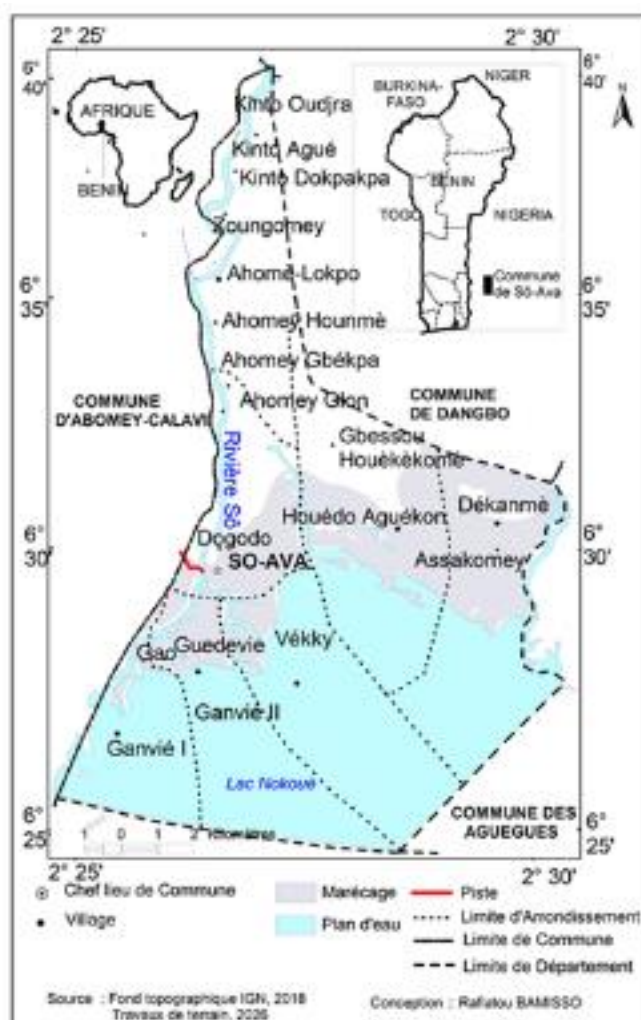


Figure 1: Geographic location of the municipality of Sô-Ava

Covering an area of 218 km², the municipality of Sô-Ava is crossed by the Sô River and comprises 7 districts (arrondissements): Sô-Ava, Vekky, Houédo-Aguékou, Dékanmè, Ganvié I, Ganvié II and Ahomey-Lokpo.

2 METHODOLOGICAL APPROACH

Several institutions were visited, in particular the Town Hall and the Ministry in charge of decentralisation. Documents relevant to the topic were consulted at INSTaD and in the libraries of the UAC, providing information that was supplemented by field work, including statistical data on the municipality NGOs, their numbers, activities, and areas and strategies of intervention. Direct observation made it possible to understand the behaviour of the various stakeholders (NGO officials, town hall staff, beneficiaries), as well as the achievements, improvements and constraints associated with implementing these actions. Interviews made it possible to engage with populations benefiting from the actions of

NGOs and associations. Questionnaire surveys were administered to the heads of the various NGOs active in the commune, to health and school officials, and to households and beneficiary women's groups. Regarding data collection tools, these included a questionnaire designed to gather population perceptions of NGO interventions in flood risk management in the municipality; a digital camera for photographing NGO achievements aimed at combating flood risk in the municipality; and a GPS device for recording coordinates.

3. RESULTS

2.1 Socio-economic Effects of NGO Interventions in the Municipality of Sô-Ava

NGO achievements in the municipality of Sô-Ava can be observed in the fields of education, health, culture, the economy, water supply and basic sanitation.

2.1.1 Positive Social Impacts of NGO Actions

2.1.1.1 In the Field of Education

As the municipality of Sô-Ava is landlocked, students and teaching staff travel to their schools under very difficult conditions, with particular risks during flood periods (September-October). Likewise, overcrowded classes (70 to 90 students) and the shortage of classrooms and furniture pose further difficulties for those involved in the school system. In response, NGOs have translated the objectives of development projects and programmes into action by building classroom modules on stilts and footbridges connecting buildings in the event of flooding of school grounds in the municipality of Sô-Ava (Figure 2).



Photo credit: Bamiiso, September 2025

Figure 2: Classroom module built by the NGO Sonagnon in Ganvié I (1) and Vekky (2) on stilts, with footbridges connecting the teaching blocks to cope with rising water levels.

Table 1: Distribution of the number of classroom modules built by the town hall in collaboration with the municipality NGOs

Districts	Number of classroom modules (offices and stores)	NGO	Remarks
Ahomey-Lokpo	10	GSADE ONG, Aurore	2 under completion
Dékanmey	3	Eclaireur	2 under way
Sô-Ava	7	Aurore, Le Réveil	7 under way
Ganvié I	4	Sonagnon, ADVOCACY	3 under way
Ganvié II	4	AJEP Hwénusu	1 under way
Vekky	5	GSADE ONG, Femmes ONG	2 under way
Houédo-Aguékon	8	Le Réveil, ADVOCACY, La Paix	2 under way
Total	40		17 under way

Source: Sô-Ava Town Hall, 2025, and field work, August 2025

Owing to the relatively limited budgets of NGOs, infrastructure is built in partnership with the town hall through a flat-rate contribution, such as transporting construction materials to the infrastructure sites and supplying lagoon sand,

among other inputs. Table 1 summarises the number of classroom modules built in the municipality by NGOs over the period 2010-2023.

Table 1 shows that a substantial number of classroom modules (40 in total) were built to ease the burden on the population in schooling their children during floods. However, several modules that were started are still under completion in various localities over the period 2018-2023. The district of Ahomey-Lokpo therefore remains the best equipped with infrastructure (10 classroom modules, 2 of which are under construction), owing to the considerable distance between villages. Conversely, in the district of Sô-Ava, none of the 7 modules initiated has yet been completed. This can be explained by several factors: slow progress of works, low participation by the population, lack of monitoring, administrative bottlenecks, misappropriation of funds, and other technical issues specific to the firms responsible for the works.

2.1.1.2 NGO Interventions in the Health Sector in the Municipality of Sô-Ava

In the municipality of Sô-Ava, NGOs are building health centres on stilts with footbridges, with the support of development partners, for the well-being of the population (Table 2).

Table 2: Distribution of health infrastructure built with NGO support

Districts/Villages	NGO	Number	Types of infrastructure
Ahomey-Lokpo (Lokpo; Kinto)	AERAMR	2	UVS; maternity unit
Sô-Ava	Siloé	1	Chief medical officer's office in the commune's health centre
Houédo-Aguékon (Houédo-Aguékon; Gbessou)	FEDELAC	2	UVS; dispensary
Vekky (Vekky-Daho)	GSADE	1	UVS

Source: Field work, September 2025

Table 2 shows that 6 health centres have been built by NGOs in four districts of the municipality, generally of the UVS (village health unit) type, with dispensaries and, in some cases, a maternity unit.

2.1.1.3 NGO Interventions on the Social Level in the Municipality of Sô-Ava

In the municipality of Sô-Ava, more than 794 children who lost their birth certificates during floods have been assisted by the NGO Regard d'Amour through its child protection and family promotion programme. This NGO periodically carries out awareness-raising and outreach campaigns on birth registration and civil status legislation during periods of rising water. In addition, nine (9) NGOs in the commune take advantage of this period of reduced activity to organise functional literacy sessions in national languages, so as to reinforce the skills of Village Savings and Credit Associations.

Furthermore, to reduce flood-related risks, volunteers from the Benin Red Cross in general, and those of the local Sô-Ava committee in particular, mobilise to raise population awareness of protective measures, through the provision of hygiene products, food aid, and support for communities in accessing drinking water in order to prevent waterborne diseases and even drowning (Figure 3).



Photo credit: Bamisso, September 2025

Figure 3: Donations from the Benin Red Cross to the population affected by flooding

Figure 3 shows a marker installed at Ahomey-Gblon (1) and another at Dogodo (2), in the district of Sô-Ava, by the National Civil Protection Agency with support from VNG International. According to 100% of the population surveyed, the different colours indicate the water level: green means 'all is well', yellow means 'water is coming', orange means 'water is here', and red means 'danger'.

2.1.2 Effects of NGO Interventions on the Living Environment of the Population of Sô-Ava

NGOs operating in the municipality of Sô-Ava, both local and international, contribute to the construction of water supply and sanitation infrastructure.

2.1.2.1 Drinking Water Supply for the Population of the Municipality of Sô-Ava

Significant actions have been undertaken by NGOs operating in the commune of Sô-Ava in the area of drinking water supply. Boreholes have been built in particular, given the geological and pedological context of the study area.

NGOs are making commendable efforts in the drinking water supply sector, such as the NGO Emmaüs International (Figure 4).



Photo credit: Bamisso, August 2024

Figure 4: Water towers built by the NGO Emmaüs International in Ganvié I (1) and Vekky (2)

Image (1) of Figure 4 shows a water tower under construction in Ganvié I, and image (2) shows a functioning water tower in Vekky, both built by the NGO Emmaüs. With this infrastructure, the populations of these localities are served and have their drinking water needs met.

2.1.2.2 Hygiene and Sanitation in the Municipality of Sô-Ava

In the hygiene and sanitation sub-sector, NGOs have contributed to the construction of flood-adapted latrines (Figure 5) in various districts of the municipality of Sô-Ava. These include, in particular, the NGOs UJSM, Le Regard, BC-ONG, AJES, Emmaüs and GSADE.



Photo credit: Bamisso, August 2024

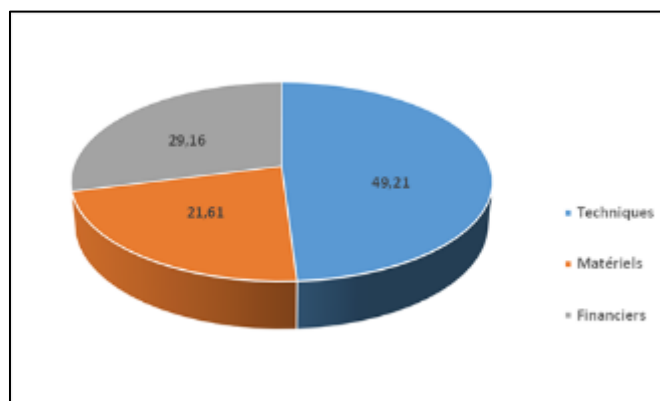
Figure 5: Latrines built by the NGO ARCADE in Ganvié II (1) and by the NGO CREPA in Ganvié I (2)

Image (1) shows an eight-unit ECOSAN-type latrine module built by the NGO ARCADE in partnership with the NGO GSADE in the district of Ganvié II. The ECOSAN type separates urine from fecal matter for subsequent use in flood-recession agriculture. Image (2), meanwhile, shows a facility designed for the storage and disposal of excreta, particularly during flood periods.

2.1.3 Economic Impacts of NGO Interventions in the Municipality of Sô-Ava

2.1.3.1 Technical Support and Microcredit to the Population of the Municipality of Sô-Ava

In the municipality of Sô-Ava, 35.87% of surveyed households report having benefited from NGO support, particularly through the distribution of microcredit to the poorest. This proportion of beneficiaries is relatively low compared with the total number of households in the municipality. In practice, households assisted by NGOs receive technical, material and financial support, as shown in Figure 6.



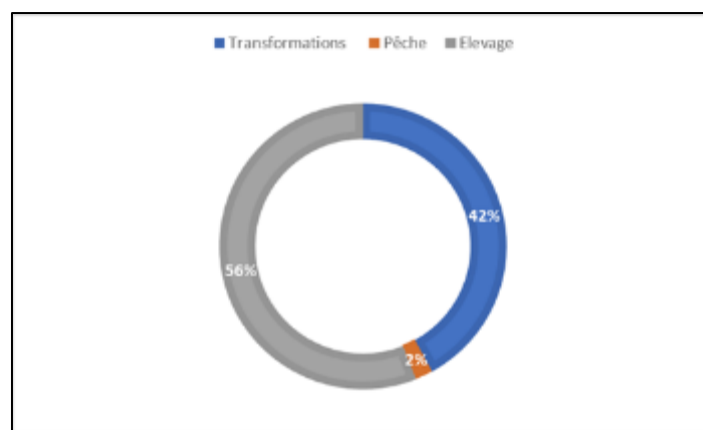
Source: Field work, June 2023

Figure 6: Proportion of households by type of support received

Figure 6 shows that technical support accounts for 49.21% of NGO contributions to households in the commune. This support covers training on the use of agricultural inputs during the flood-recession period, the use of non-prohibited fishing gear, and sanitation of the living environment. By comparison, 21.61% of households received material support, while 29.16% received financial assistance from the commune's NGOs. Within this latter category, support mainly takes the form of microcredit, given that most NGOs have limited funding and operate on the basis of member contributions and donations. It should nevertheless be noted that the influence of this support is particularly visible in households through the initiatives of women's groups.

2.1.3.2 Support for Local Development Initiatives: The Case of Women's Groups

In order to alleviate the hardship experienced by the population during floods, NGOs in the municipality of Sô-Ava provide support to women's groups (Figure 7).



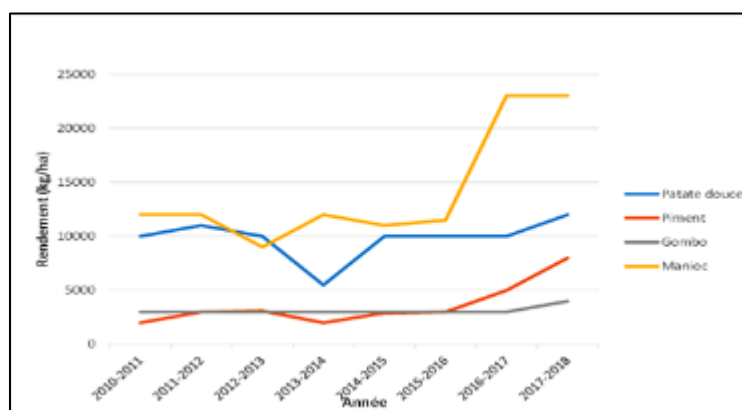
Source: Field work, July 2024

Figure 7: Financial support provided by NGOs in the municipality of Sô-Ava to women's groups in certain areas of activity

Some NGOs support women's groups (WG) in three main activities: raising poultry (ducks) and small livestock (sheep, lagoon cattle breeds); processing agricultural products (peanuts [*Arachis hypogaea*] into peanut oil or cakes; soybeans [*Glycine max*] into soy cheese, etc.); and fishing once floodwaters recede.

2.1.4 Capacity Building at Various Levels and the Importance of NGO Actions

NGO actions in the agricultural sector are implemented through three components. Under the component supporting improved productivity, priority is given to training producers on changes to production systems once floodwaters recede from their beds. Training covers techniques for selecting cassava cuttings and soybean seeds, as well as basic lowland development and soil restoration techniques. These now enable producers to overcome the difficulties associated with low yields (Figure 8).



Source of data: ATDA Atlantique/Littoral, 2023

Figure 8: Yields of selected crops in the municipality of Sô-Ava linked to NGO contribution

Analysis of this figure shows that the crops considered (*Ipomoea batatas*, *Manihot esculenta*, *Abelmoschus esculentus* and *Capsicum annuum*) experienced low yields from 2010 to 2016, with respective peaks of 11,000 kg/ha, 3,000 kg/ha, 3,000 kg/ha and 12,000 kg/ha, followed by a yield increase from 2016 to 2018 to 12,000 kg/ha, 8,000 kg/ha, 4,000 kg/ha and 23,000 kg/ha. This increase in yield is linked to NGO actions. With regard to fishing activities, 46% of NGOs, in collaboration with the fisheries department, build the capacity of fishermen, fishmongers and oyster farmers to conserve the aquatic ecosystem through the development of environmentally friendly activities.

2.2 Constraints Limiting NGO Actions in the Municipality of Sô-Ava

2.2.1 Financial Difficulties

Considerable financial difficulties hinder NGOs from achieving their objectives, depending on their sources of funding (membership contributions, subsidies, donations).

These include: administrative red tape or a lack of rigour in tracking allocated funds; the inability of officials to recruit qualified staff; the inability to acquire adequate equipment; and the low rate of implementation of the projects and programmes undertaken.

2.2.2 Technical and Organizational Difficulties

These include: illiteracy among the population, who are often not informed of or involved in project design; poor knowledge of the geographic location of beneficiary communities and groups within the commune; non-compliance with consultation sessions and capacity-building activities for women's groups; and overlapping meeting schedules with those of other NGOs in the municipality.

2.2.3 Difficulties Coordinating NGO Activities

These include: non-participation of populations in the implementation of certain projects owing to repeated negative experiences with other NGOs working in the same field; reluctance among some populations benefiting from NGO actions; and the proliferation of local development associations with no concrete action on the ground, which increases the loss of credibility of NGOs among the population and, consequently, the population's declining interest in their actions.

2.2.4 Difficulties in NGO Interventions in the Municipality of Sô-Ava

The main difficulties can be summarised as follows: insufficient materials and equipment provided to target groups; insufficient socio-community infrastructure in the municipality of Sô-Ava; insufficient training sessions for the population; and lack of consultation between NGO officials and beneficiary populations prior to project implementation, among others.

Beyond these weaknesses, the SWOT analysis model was used to determine the internal and external factors linked to the contribution of NGOs to improving the living conditions of the population of the commune of Sô-Ava (Table 3).

Table 3: SWOT model applied to the contribution of NGOs in the municipality of Sô-Ava

	Positive factors	Negative factors
Internal factors	Strengths	Weaknesses
	- Favourable climatic conditions; - Presence of a diversity of NGOs; - Large population of the commune of Sô-Ava.	- Insufficient materials and equipment for target groups; - Insufficient socio-community infrastructure; - Low level of training and information; - Lack of project monitoring and evaluation.
External factors	Opportunities	Threats
	- Existence and possibility of cooperation among NGOs; - Existence of a favourable legal framework; - Technical and financial support from international organisations.	- Deterioration of population health; - Absence of/delays in funding; - Rising poverty indicators.

Source: SWOT analysis model applied to NGO actions in the commune of Sô-Ava

Analysis of the table shows that NGOs operating in the municipality of Sô-Ava have various opportunities, including the existence and possibility of cooperation among NGOs, and the existence of a legal framework reflected in public-private partnerships. Regarding internal factors, it should be noted that favourable conditions exist for the creation of NGOs. The combination of all these factors has made it possible to formulate strategies reflected in: strengthening the capacities of NGOs operating in the municipality; and improving the institutional framework to secure technical and financial support, among others.

In light of these strategies, solution-oriented approaches have been formulated to enhance the effectiveness of NGOs in their contribution to reducing flood risk in the municipality of Sô-Ava.

3 DISCUSSION

This study identified the various NGO interventions in natural risk management across several fields of activity in the municipality of Sô-Ava. These interventions have had positive impacts, enabling the local population to meet their basic needs. This confirms the work of Yèyèvi and Tougan (2008, p.32), who argue that the proliferation of NGOs stems from their desire to establish direct partnerships with grassroots populations so that the problems they face can be better targeted and appropriate solutions found. Through NGOs, the population of the municipality of Sô-Ava has benefited from the construction of infrastructure adapted to the local context, as well as various forms of assistance. These results corroborate those of Fangnon (2011, p.43), who found that NGOs assist 25.4% of households, of which 75% received technical support, 29.69% material support, and 4.02% financial support. However, according to this author, this support did not significantly improve households' living and working conditions: only 28.74% saw their conditions slightly improve, a pattern also observed among the population of the commune of Sô-Ava, some of whom do not benefit from NGO actions at all. These NGOs consequently face numerous difficulties in their various interventions, confirming the findings of Abilé (2010, p.52), who considers that the diversity of existing NGOs does not necessarily translate into interventions in areas corresponding to the Millennium Development Goals (MDGs). In this respect, it falls to the State and its development partners to strengthen these grassroots structures by adopting new strategies that genuinely contribute to poverty reduction and efficient natural risk management.

4 CONCLUSION

In the municipality of Sô-Ava, several NGOs are involved in reducing flood risk. To this end, they adopt various strategies that help populations improve their living conditions. In practice, this support takes the form of material, technical and financial assistance, generally materialised through the construction of basic socio-community infrastructure (schools, classroom modules, latrines, health centres, and water supply and sanitation facilities).

NGOs also focus on education and the economy (53.57%) in their community-level interventions. Moreover, NGO support has improved the income levels of women's groups; however, the population's overall living conditions remain modest. The difficulties faced by the various NGOs operating in the municipality of Sô-Ava limit and weaken their actions. It is therefore essential that these NGOs' strategies be genuinely embedded in the municipality development process, and that they develop concerted actions on the ground while further involving the grassroots population.

STATEMENTS ON COMPLIANCE WITH ETHICAL STANDARDS

Disclosure of conflict of interest

The author declares no conflict of interest regarding this manuscript.

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