



Government and Non-Governmental Organisation Led Agricultural Development Projects and the Accumulation of Social and Economic Capitals in Mezam, Cameroon

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Authors' contributions

This work was carried out in collaboration among all authors. Author NN designed the study, performed the statistical analysis, wrote the protocol, and wrote the first draft of the manuscript. Authors BRA and MFf managed the analyses and discussions of the study. Author RAB managed the literature searches and structured the article. All authors read and approved the final manuscript.

Article Information

DOI: 10.9734/AJAEES/2024/v42i22365

Open Peer Review History:

This journal follows the Advanced Open Peer Review policy. Identity of the Reviewers, Editor(s) and additional Reviewers, peer review comments, different versions of the manuscript, comments of the editors, etc are available here: <https://www.sdiarticle5.com/review-history/112638>

Original Research Article

Received: 27/11/2023

Accepted: 01/02/2024

Published: 02/02/2024

ABSTRACT

Government (GO) and Non-governmental organizations (NGOs) undertake agricultural development projects especially in Sub-Saharan Africa where agriculture-dependent livelihoods are predominant. Agricultural development has been accompanied by a theoretical debate vis-à-vis

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who is best placed to steer the process. Unfortunately, empirical evidence to refute or ramify the theoretical contestations are extremely limited. This article contributes to the literature by comparatively analyzing the effects of GO) and NGO-led agricultural development projects on social and economic capitals in Cameroon. Mixed methods were applied on stakeholders of four selected GO-led and four NGO-led development projects in Mezam division in the North West region of Cameroon, chosen due to its long history of having both GO and NGO-led agricultural development projects. A structured questionnaire was used to collect quantitative data from randomly selected 180 beneficiaries, including 90 from GO and 90 from NGO projects, and 120 project staff that is 15 (2 top, 5 middle and 8 lower management) per retained organization. Recall was applied to construct before-after comparisons with interviewees, in the absence of baseline information. In-depth interviews and observations were done with selected project staff and beneficiaries, respectively. Quantitative data was analyzed using SPSS version 25.0, while qualitative data was analyzed using content analysis. Results show significant increase in the growth of social and economic benefits for respondents from both GO and NGO-led projects ($p < 0.05$), though higher for NGO-led projects. The study concludes that agricultural development by both organizational types can enhance social and economic development. Further studies are needed to ramify these results. Comparative analyses between project staff and beneficiaries can highlight any differences in them, in terms of perceptive and actual impacts of GO and NGO-led agricultural projects on social and economic capitals. Comprehensive assessments based on all livelihood capitals are recommended to ground these contentions.

Keywords: Government; NGOs; agricultural development projects; social capital; economic capital.

1. INTRODUCTION

The role of Governmental (GO) and Non-Governmental (NGO) development projects in enhancing sustainable livelihoods for communities across the globe cannot be overemphasized. Between 2014 and 2017 for instance, development projects worldwide mobilized approximately US\$ 1,664 billion, of which over 8% (approximately \$ 138.7 billion) benefited African countries, improving the livelihoods of approximately 28% of those below the poverty line [1]. GO and NGO development projects are a form of organized social activity with specific focus (objectives), limited in space and sometimes limited in time aimed at bringing about long-term change [2]. Agricultural development contributes to the broader concept of sustainable development, and rural and urban livelihoods. sustainable agricultural development projects and practices have evolved in congruence with the concept of development over time [3]. In fact, in the 1950s and 1960s, development projects were based on engineering, scientific rationality and top-down approaches, in accordance with the economic thinking of the time, in which science, technology and planning were central instruments for the rational control of nature and society [4]. This vision of development was based on the unlimited availability of natural resources, low wages and ease with which businesses and agriculture in rural areas were set up.

Development interventions did not sufficiently consider the opinions and values of the project beneficiaries-and therefore did not adequately address the needs of beneficiaries [5]. Consequently, development projects did not sufficiently include the social expectations of communities [6]. From 1980 onwards, a progressive change in the paradigm of development was noted. With the consolidation of the Goal-Oriented Project Planning (GOPP) approach in the 1980s particularly by the German Agency for Technical Development-GTZ [7], and due to the large failure to sustain development projects heretofore, beneficiaries such as households, families and whole communities began to play central roles in identifying planning implementing, monitoring and evaluating development projects directed towards them [8]. This new paradigm attracted new actors, particularly NGOs, who joined national governments in promoting participatory (agricultural) development [9,10,11]. Since then, NGOs have remained very active in fostering global (agricultural) development. Governments and NGOs play vital roles in promoting livelihoods and sustainability. They have both recognized the challenges to social and economic sustainability and are beginning to address these issues in public policy discussions. It is imperative to work across organizations in order to address (agricultural) development issues in a global context. According to a Globe Scan poll of experts, the

leading role in achieving sustainability will be played by the businesses (35%), followed by NGOs (30%), and 24% governments [12].

Agricultural development has been prioritized in many developing countries in Asia and Africa, due to its contribution to livelihoods. Up to 70 percent of Africans depend on agriculture, which contributes about 35 percent to the continent's gross domestic product [13]. Developing the agricultural sector therefore has a direct impact on poverty reduction in Africa. Some changes targeted by agricultural development projects in Africa and in other parts of the world include production and productivity increases [14], adaptation and resilience to climate change [15], and sustainability in diverse contexts such as livelihoods as an independent sector [16,17], or in terms of GHGs¹ reductions [18]. The growth in agricultural development projects, and their promotion by GO and NGO actors has raised questions as to who is best placed to enhance highest impacts of agricultural development projects. This article provides an empirical response by comparatively analyzing the impacts of agricultural development projects on social and economic capitals accumulation by beneficiaries in Mezam division of the North West region of Cameroon.

1.1 Background

1.1.1 Statement of the problem

The impacts and sustainability of (agricultural) development projects is increasingly gaining importance in development discourses. Unfortunately, project outcomes generally tend to be less visible long after implementation ends [19]. The efforts devoted by agricultural development agencies to enhance the wellbeing of targeted beneficiaries and their livelihoods can become meaningless if projects are not beneficial and if the benefits are not sustained beyond the implementation period. Group approaches have been used by various development agencies as a means of delivering projects, extension services and assisting rural people to improve their living standards in terms of grants or loans through groups [20]. Agricultural Sustainability strategies such as capacity building, market integration and

cooperatives management have produced suboptimal results [19-21].

An interesting debate with regards to the implementation and sustainability of (agricultural) development projects resolve from the theoretical discourses around implementing organizational form, particularly if state or non-state organizations should drive the development process [22]. A theoretical issue of concern in project-related development efforts has therefore been if the state should continue to be at the epicenter of (agricultural) development or not. Proponents of state-centrism do not see any other option for development, without the strong participation of the state. In other words, the state should be at the epicenter of the development process, defining piloting and shaping development outcomes [16,23]. An opposing narrative has consistently accompanied the discourse for a state-centric development. According to this alternative narrative, development will be sustainable if the role of the state is limited to creating favorable policy environment and correcting market failures. In this case, development actors such as the Market and Non-profit organizations (for instance, NGOs) will promote durable and meaningful development [16]. Based on this school of thought, states remain predatory², as long as they concentrate on rent-seeking, and protecting the interest of a privileged few [23]. While this theoretical debate is on-going, development efforts continue to be undertaken by both state and non-state actors sometimes in parallel, but also in complementary manner.

In Cameroon, the shift from a strong state (government) participation before the structural adjustment programs (SAPs) in the 1990s to a weaker one in favour of a stronger NGO intervention thereafter, re-stimulated this interesting debate [24]. In the current context, one observes the Cameroonian government bouncing back into the development process, by increasingly initiating and leading many development projects³ in a context characterized

¹ Greenhouse gasses are gases with the property of absorbing infrared radiation emitted from the earth's surface and reradiating it back to the earth's surface, thus contributing to the greenhouse effect (Carbon dioxide, methane, water vapor) [18].

² A predatory state often is limited to a state that does not protect private property rights and hinders economic development. It would specify a set of property rights that maximize the revenue of the group in power, regardless of its impact on the wealth of society. It promotes private interests of dominant groups in the state or influential private groups with effective lobbying powers [23].

³ Some of the state-led projects in Cameroon North West region include ACEFA (Programme d'Amelioration de la Compétitivité des Exploitations Familiales Agropastorales), GP-DERUDEP (Grassfield Participatory and Decentralized

by diminishing NGO intervention [20]. In essence, state (GO) and NGO-led development projects operate in parallel. This deviates from the non-profit economic demand theory, which holds that Non-profit Organizations emerge to account for deficits created by failing states and markets [25]. At the same time, and even with activities on the ground propelled by both institutional forms, very little is known as to which of these two major actors possesses the (better) capacity to enhance sustainability or impacts. An *allodoxia*⁴ therefore exists between theoretical orientations and empirical reality with respect to the relationship between institutional form and the outcomes of (agricultural) development projects [23].

Empirical research is needed to stem this knowledge paucity and inform policy decisions in order to better direct increasingly limited resources to the more competent institutional form, capable of enhancing sustainability in development projects, thereby optimizing limited resources. In addition, empirical research can unravel the mystery embedded in the theoretical debate on the role of state and non-state actors in the development process. Unfortunately, empirical efforts to refute or ramify the role of state and non-state actors in development and the sustainability and/or impacts of their efforts until now have not attracted sufficient research attention. The study draws on case studies from Mezam division in the Northwest Region of Cameroon to empirically compare the differential impacts of state (GO-led) and non-state (NGO)-led agricultural development projects⁵. The study sheds light on the empirical relationship between these two organizational forms⁶, and the impacts

Rural Development project), PACA (Projet d'Amélioration de la Compétitivité Agricole), LIFIDEP (Livestock Development Project), PROFALCAM (Platform for the Promotion of Local Flour in Cameroon).

⁴ *Allodoxia* is a concept that is used to describe false beliefs arising from misrecognition [30].

⁵ Development projects are endeavours aimed at reducing rural poverty by improving and increasing production activities through a community-based approach in designing and implementing major components which directly impacts the lives of the poor in the participating regions and districts. These components improve rural infrastructure, investment for the poor, improved agricultural services, better policies, environmental management, support for the implementation and coordination units [26].

⁶ Government organisation is a permanent or semi-permanent organization in the machinery of government responsible for the oversight and administration of specific functions, such as an administration. It may be established by either a national or a state government within a system, created by powers of government and established by

of agricultural development projects executed by both organizational forms in the Northwest Region of Cameroon. In this study, State/Government and Non-State/NGO will be used interchangeably⁷ [26].

1.2 Literature Survey

1.2.1 Role of the State in Development revisited

Max Weber defined a state as a human community that successfully claims the monopoly of the legitimate use of physical force within a given territory. The Weberian approach conceptualizes the state as an institution or set of institutions exercising supreme political authority within a geographically defined territory [27]. This supreme political authority implies a monopoly of "legitimate" pressure, administration over a given territory, and the capacity to capture revenues for the support of state activities [28]. From a slightly different perspective, Greenberg also envisages the state as constituted by the civil and military bureaucracy, the government, or those having formal control over the state apparatus; and the formal and informal rules of the game that structure the form and operation of both apparatus and government [29].

The traditional role of the state as outlined by Anderson [33] consists of seven basic functions

legislation. Non-state is a superordinate concept that encompasses all actors in international relations that are not affiliated to or directed by government. It comprises individuals as well as entities across large range of organizations and institutions on the globe Non-governmental organizations (NGOs) are non-profit entities independent of governmental influence. Sometimes called civil societies, are organized on community, national and international levels to serve a social or political goal [30, 31].

⁷ The sustainability differences is viewed from various perspectives: on the basis of policy development, the State involves in development of new policies to steer and enable sustainability innovation via identifying major sustainability challenges at global, national, regional levels and setting up priority goals with long-term strategies meanwhile the Non-State is involved in the development of partnership approaches in which they fund and attempt to work with other organizations, direct funding through bilateral or multilateral donors, responding to relief work on international emergencies on contractual basis. Based on regulations, all State initiatives are in legislation, administration and enforcement with boundaries set by the international law while all Non-State initiatives are in legislation, administration and enforcement by the rules governing the NGO sector It should be noted that both organizations have the goal of working towards a common interest especially for the benefit of human welfare and a better society. Hence, will frequently been used interchangeably [32].

of government, namely (i) Providing economic infrastructure; (ii) Provision of various collective goods and services; (iii) The resolution and adjustment of group conflicts; (iv) The maintenance of competition; (v) Protection of natural resources; (vi) Minimum access by individuals to the goods and services of the economy; and (vii) Stabilization of the economy [33]. Five fundamental tasks are at the core of every government's mission and are concerned with: (i) Establishing a foundation of law; (ii) Maintaining a non-distortionary policy environment, including macroeconomic stability; (iii) Investing in basic social services and infrastructure; (iv) protecting the vulnerable; and (v) Protecting the environment. It is almost impossible for any state to function as an island in the current era of globalization [34]. There are guidelines, policies, conventions and agreements provided at the global level, which guide the actions of states in both the developed and developing worlds [29]. Hence, the role of the state has changed tremendously especially in the 21st century, with a remarkable shift of attention from government to a governance perspective. For instance, the governance perspective highlights not just the institutional interactions usually associated with public policy making but it emphasizes the relationship of society to governing [30,31]. As a result, governments currently use organisations in the society to implement programs in order to share responsibility with the aim of promoting a development that is sustainable [34].

1.2.2 The Sustainable Livelihood Framework Revisited

For the past few decades, research on rural people's sustainable livelihoods in developing nations has been based on the notion of Livelihood Concept⁸ [35]. Beginning in 1992, this concept deliberated on a number of issues including the sustainable livelihood framework which helps in gaining a thorough understanding of how rural households combine different resources in different environments and ways to achieve certain levels of living and doings [35]. By definition, a livelihood comprises the capabilities, assets (stores⁹, resources, claims

⁸ The concept of livelihood refers to the way people make a living, which is based on capacity, assets and activities". Scoones looks at the concept as the skills, assets (both material and social) and the approaches which will be used by individuals and communities in order to survive". [36, 37].

⁹ In this concept, the term "stores" refers to physically storable assets like food, stocks, and savings.

and access) and activities required for a means of living. A livelihood is sustainable when it can cope with and recover from stress and shocks, maintain or enhance its capabilities and assets provide sustainable livelihood opportunities for the next generation; and which contributes net benefits to other livelihoods at the local and global levels and in the short and long-term [36].

1.2.3 Understanding livelihood capitals and their applications in impact assessments

In spite of criticisms [36,39] the elements of the sustainable livelihoods framework (SLF) have not fundamentally changed from the original conceptualization developed by Scoones in 1998 and UK's Development for International Development in 1999. The livelihoods framework is divided into five components, namely (1) Vulnerability context, (2) different forms of livelihood assets, (3) policies and institutions, (4) livelihood strategies, and (5) livelihood outcomes [37,38]. The goal of SLF was to better understand the application of rural development policy planning and its resulting effects on the sustainability of livelihoods [38]. It provides a map of existing issues and to understand how and why they (influence and shape livelihoods). Thus, while Scoones [37], provides what comprises each component of the framework, DFID, UK [47], claims to offer an understanding of how and why the sustainable livelihood components interact ¹⁰ [37]. The livelihoods paradigm developed by DFID emphasized the functions of markets, institutions, and technology in relation to efforts to combat poverty [47]. According to the framework, it differed slightly from DFID since it was intended to be used by practitioners of rural development as opposed to serving as a framework for directing research [36].

The five key elements that make up the framework for sustainable livelihoods are reviewed in the following sections below.

a) Vulnerability Context: The framework for sustainable livelihoods is used to evaluate people's mitigation methods to deal with a situation; for instance, dealing with the effects of climate change. It is suggested that there are various benefits of knowing vulnerability context in rural development activities. Researchers have suggested that comprehending the context of

¹⁰ For further discussion, see [36, 38, 39, 47].

vulnerability may be useful in assessing people's resilience to external shocks. For instance, Chiwaula and others [40] contend that people's levels of vulnerability affect how well they are able to handle stresses and shocks from the outside world. Additionally, community's level of vulnerability and its level of poverty are related, and that the more vulnerable a group of people are, the poorer they are. The most vulnerable and impoverished households are those with the weakest asset portfolios [40].

Researchers have suggested that a number of external factors in places where people reside put them at risk. Yanuartati [47] reiterates that rural residents are vulnerable because of their periodic and irregular income which is frequently influenced by seasonality, markets, and employment prospects. Thus, environmental factors like trends, shocks, and seasonality frequently have an impact on rural populations [47]. Trends can change people's livelihoods and influence how they adopt strategies to deal with them. For instance, development interventions can encourage poor farmers to increase farm output, technological innovations, strategies to cope with increased population, and policy tendencies. Farmers must adapt to these changes due to the rising demand for agricultural products and the availability of development initiatives [36]. Another type of vulnerability is shock, which refers to unforeseen events like floods or droughts as well as socioeconomic shocks like those brought on by armed conflicts and economic decline. However, rural communities must deal with these vulnerability situations which continuously put them at risk. Their ability will influence how successfully they achieve the implementation of their development projects [41].

b) Livelihood Assets: Livelihood assets are essential for sustainable living. According to multiple studies, the development of assets is connected to wellbeing and a household's capacity to expand output from various businesses (livelihood outcomes) for rural residents. Livelihood assets divide resources that a household has access to into five categories: human, social, natural, physical, and financial assets [36,39]. See Fig. 1.

i. Human Capital: Mensah classifies human capital as a manpower asset that comprises the age distribution, family size, gender composition, number of households, labor force. In a case study on cattle ranching in Indonesia, it was

discovered that inadequate livelihood asset management was caused by low quality human capital including limited education and skills [42,43]. It is measured using the indicator approach. This approach aims to propose an analytical pair-wise comparison approach to ranking indicators of human capital and it's a good source of innovation and strategic renewal. This was captured in the research through a number of variables including mastery of subject matter by project organization, capacity to deliver target-friendly packages, sound organizational and management skills, amount of skilled labour available at community level, capacity building workshops to beneficiaries [43].

ii. Social Capital: Social capital is defined as a networks of relationships among people who live and work in a particular society that enable society to exist and be successful through financial, emotional, physical, and other resources to meet their needs for survival and improvement. Building social capital requires trust and participation among individuals [44]. This study captured social capital through a number of variables including membership in groups and networks, level of trust among organisation and beneficiaries, solidarity among project beneficiaries and staff, knowledge of gender equality, prestige/respect from community members, good policies favouring the promotion of culture and racial inequalities, gender balance, solidarity framework among beneficiaries'/community members, appreciation of livelihood situation. Social capital can maximize the economic advantages for rural residents in non-financial ways. These ideas have to do with how members of a group or community connect or form networks with one another as well as the power dynamics that exist within the community [45]. It can be measured with Organisational Network Analysis (ONA), conducted through surveys. This is important as it establishes future structures that position community members where they can deliver the most impact and serves as a powerful tool to identify isolated individuals or groups and provides effective strategies for reconnecting members. Social capital is crucial for improving community members' livelihoods since it can open up new chances for employment and lead to better livelihood outcomes [46].

iii. Natural Capital: Natural resources have an impact on rural livelihoods, such as water, soil, biodiversity, and environmental services, are referred to as natural capital [36]. Measuring

natural capital can be by the valuation method. This estimate the economic value of the benefits that natural capital provides to humans. The variables used in this study include participation in biodiversity conservation, participation in tree planting, number of trees owned by beneficiaries, activities related to water conservation, Land owned, waste and Soil management practices. These variables are important in this study since it fight against climate change, ensures food security, fight against diseases and yields economic benefits to the communities concerned. Natural resources should not be depleted because rural residents rely heavily on them for their economic activities, particularly those that are connected to the agricultural sector [47]. For instance, it has been noted that cattle farmers who work wetlands earn more money from their herds of cattle than those who work dry ground. This is due to the fact that farmers in wetlands have better access to water, allowing them to cultivate their crops and forages more effectively than farmers in dry land environments. Hence, compared to farmers in dryland areas, farmers can better raise their cattle and have surplus forage that they can sell in the feed market [36].

iv. Physical Capital. Physical capital is the rural livelihoods' supporting infrastructure. It is vital to serve the basic necessities of rural people such as school buildings, government offices, sanitation/healthcare [48]. It is measured by the sum of Total Fixed Asset Purchase Price + capital improvements) – (Accumulated Depreciation + Fixed Asset Liabilities). The variables used in this study are number of infrastructure owned, household equipment, farm equipment, number and/or quality of housing, other physical infrastructure (roads, bridges, etc). these variables were desired to access the means available at the disposal of the communities that can help them participate in social and economic community while providing necessities such as food, shelter, water, transportation. According to Stoian and others [48], constructing bridges between farms or communities and market places can reduce the time and distance that farmers must go to markets, which lowers their transportation expenses for selling their produce [49].

v. Financial/Economic Capital: Due to its greater versatility than the other four categories of capital, financial capital is one of the most significant resources for rural lives in general, and a key outcome of agricultural development projects in particular. It can be easily swapped

for other types of capital, such as the acquisition of physical capital, and has the financial resources needed to expand agricultural investments, ordeal with extreme events [50]. Variables used in the study include engagement in income generating activities by beneficiaries, engagement in savings activities, engagement in credit activities, profits from project-related activities, rate of reliability of transactions with suppliers and retailers, innovative activities that created value, transforming subsistence activities into economic ones, employment opportunities for, overall financial sustainability of beneficiary. The key advantage is that liquid assets may be easily sold and turned into cash when need arises. Liquidity assets considers three dimensions: time, volume, and price. These dimensions capture the spread, depth, and the resiliency of the market. Intra-daily measures of liquidity are relevant for capturing the core features of a market and accounting. It is measured as $\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liability}}$, $\text{Quick Ratio} = \frac{\text{Cash} + \text{Marketable securities} + \text{Accounts receivable}}{\text{Current liabilities}}$ [50]. A summary of livelihood capitals is presented in Fig. 1.

c) Policies and Institutions: Livelihood strategies and outcomes are not just dependent on access to capital assets or constrained by the vulnerability context; they are also transformed by the environment of structures and processes. Structures are the public and private sector organizations that set, implement policy and legislation affecting livelihoods. Policy determining structures cannot be effective in the absence of appropriate institutions and processes through which policies can be implemented [52]. Processes provide incentives that stimulate people to make better choices. One of the main problems the poor and vulnerable face is that the processes which frame their livelihoods may systematically restrict them unless government adopts pro-poor policies that in turn, filter down to legislation and even less formal processes.

d) Livelihood Strategies: Livelihood strategies aim to achieve livelihood outcomes. Decisions on livelihood strategies may invoke natural/non-natural resource based activities, off-farm activities, migration and remittances, pensions and grants, intensification versus diversification, and short-term versus long-term outcomes, some of which may compete [39,51]. One of the many problems of development is that projects and programs, while favoring some, can disfavour some other people for one reason or the other.

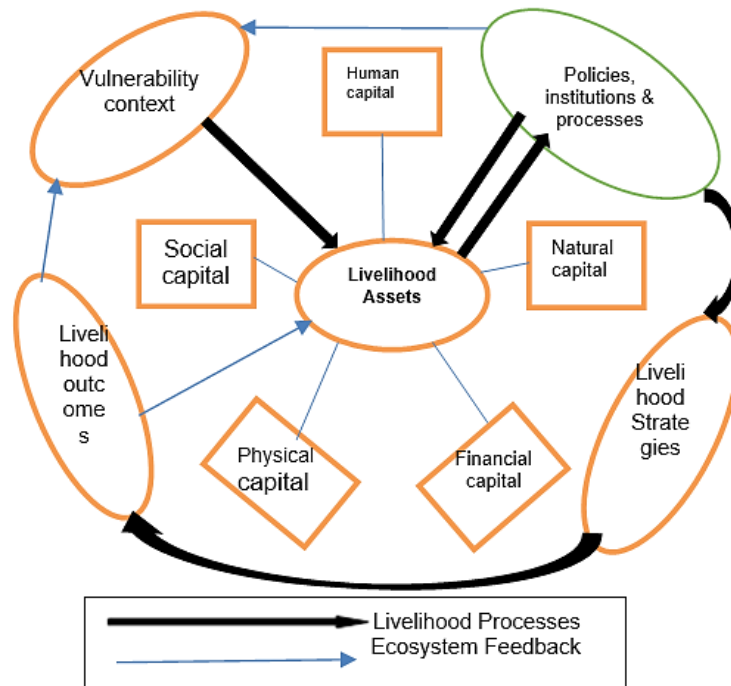


Fig. 1. Livelihood assets and their relationships with other components of the Sustainable Livelihoods Framework

e) Livelihood Outcomes: livelihood outcomes are what individual households and communities can achieve by implementing their livelihood strategies [37]. Potential livelihood outcomes can include more income, increased well-being, reduced vulnerability, improved food security, more sustainable use of the natural resource base, and recovered human dignity from conflict situations [50].

The sustainable livelihoods approach encourages thinking out of the box. It frees development practitioners from conventional approaches that are often restricted to identifying problems and finding solutions but rather invites them to look at contexts and relationships so that development activities can become more process-oriented [50]. It compels them to look for multiple entry points and to move beyond a homogenous “community” view and a narrow sectoral perspective. It represents an important shift away from the focus on project inputs, outputs, and the assumed mechanical links between them. In particular, the sustainable livelihoods approach stresses the importance of understanding institutions by mapping the institutional framework and linking the micro to the macro and the formal to the informal. Therefore, it calls for a new style of policy appraisal that moves from universal prescriptions

to context-specific approaches that allow alternative, local perspectives to reveal themselves in the policy framework.

1.2.4 The Contribution of Donor-Funded Agricultural Projects on social and Economic Capital

Agricultural development projects whether implemented by GO or NGOs contribute to (rural) development in many Sub Saharan African (SSA) countries, where it plays a central role in economic growth, food security and livelihoods. There is growing evidence in SSA suggesting that agricultural development projects are boosting (rural) economies and reducing household and community poverty [53,54,55]. Several studies have demonstrated that development project generate positive impacts on the livelihoods of their beneficiaries, through the accumulation of financial capital (income and savings), the accumulation of social, and economic capitals [16,56,57,20]. In addition to economic capital, social capital through the improvement of health conditions, capacity building, counselling services, increase in meals per day has also improved through agricultural development projects. Though Balgah et al. [16] found no significant difference in the number of meals per day for the beneficiaries of the Biogas

project, they observed a 10% significant increase in the number of times luxury food (meat and or fish) was eaten a week (3 to 4 times per week on average, $p = 0.06$) [16, 61, 53].

Researchers working on the drivers of financial inclusion among cocoa producers in the Southwest Region of Cameroon, proved that there is a positive relationship between benefiting from agricultural projects and income. They furthered that there has been an increase in access to finances and the adoption technologies, up-scaled farm output and farm income, leading to a corresponding increase in net farm profits [58]. The findings of Mudavanhu & Mandizvidza [59], revealed that 18% of the population attained high food security as a result of the donor funded input supply scheme. Findings revealed that before the implementation this scheme in 2008, 75% of the population lived on US\$100 per year and after the implementation of the project, 35% of the population were able to live on US\$300 in 2009. Further, an increase in revenue reflects an increase in savings which promoted household investment. Farmers in Kenya who had adopted the biogas technology, witness an increase in financial savings of about 3000Kenyan Shillings US\$18.81.8 [60].

In Cameroon, it is believed that one of the key aspects of beneficiary livelihoods improved through the implementation of development projects is individual and household incomes of both men and women [16, 20, 53, 55]. Muluh revealed that the mean agricultural and livestock incomes following the implementation of the Investment Fund for Communal and Agricultural Micro-projects (FIMAC 1) loan scheme for beneficiaries in the North West Region of Cameroon increased from US\$213.1 to US\$401 (a difference of US\$187.9, an 88.1% increase) and from US\$96.4 to US\$249.1 (a difference of US\$152.7, a 158% increase), respectively. Balgah in 2018 demonstrate that beneficiaries of the Biogas project implemented by Heifer International in Cameroon (HPI) witnessed an annual increase in household incomes of FCFA54,680 (US\$91.13), and over 40% increase in monthly savings [16]. The above findings lead us to conclude that the adoption and implementation of development projects can be seen as an important means of securing on the economic situation and livelihoods of farmers in rural areas especially in developing countries. Based on these results, it is therefore expected that the agricultural projects implemented by both

the GO and NGOs in Mezam Division would have positive impacts on the livelihoods of the beneficiaries.

2. MATERIALS AND METHODS

2.1 Research Methodology

This section presents the methodological procedures applied in the research process. These include description of the study area, research design, sampling methods and procedures, research instruments, methods of data collection and how results were generated, analyzed and discussed.

2.2 The Scope and Area of Study

This study was carried out in Mezam one of the seven divisions in the Northwest Region of Cameroon. It covers a land surface of 1.841km² with Bamenda as its capital city (Fig. 2). Mezam is located between latitudes 5°20' and 6°15'N and longitudes 09°7' and 10°21'E. It consists of 27 autonomous villages; and it is bounded to the North West by Menchum, Boyo Division to the North East, Momo Division to the West, Ngoketunjia to the East and to the South by the Western Region. It has an estimated 700,000 inhabitants giving a population density of 380.2 inhabitants per km² [62]. Administratively, Mezam is composed of seven subdivisions: Bafut, Bali, Bamenda 1, Bamenda 2, Bamenda 3, Santa and Tubah Sub Divisions [63]. The study area is characterized by a cool temperate-like climate, influenced mainly by mountainous terrain and rugged topography. It is situated at an altitude of between 1,300m to above 2,500m above sea level with an average annual rainfall of about 2,400mm, temperature, ranging between 15°-32°C with an average of about 23.5°C. There are two main seasons; wet/rainy season, which starts in March and ends in October, and dry season from November to February. The harmattan dry air characterizes the dry season [64, 65]. The climatic conditions of the area are favorable for agricultural practices and three types of soils exist in the area namely: volcanic, hydromorphic and feralitic soils. The economy of the region and that of Mezam division in particular is predominantly agricultural.

Over 80% of the rural population depends solely on agriculture, including a strong livestock sub-sector. Food crops include Maize, rice potatoes and beans, Plantains, cocoyams, cassava, yams

are also produced, and many of these are food staples in the region [66, 67, 68]. Besides, there are vast flowing rivers and water bodies (such as river Mezam, lake Awing) that encourage irrigation for off season cultivation and fishing activities. The region is also favoured by the road network system-the ring road (with numerous corridors) linking all the seven divisions from its capital city Bamenda. Timber and other local

materials and products are very much available to facilitate and promote sustainability of agricultural development projects. However, with inadequate financial power, the region has a high-level technical staff provided by the government and NGOs to backstop development efforts and ensure their sustainability [22]. The representation of the region is as shown on Fig. 2.

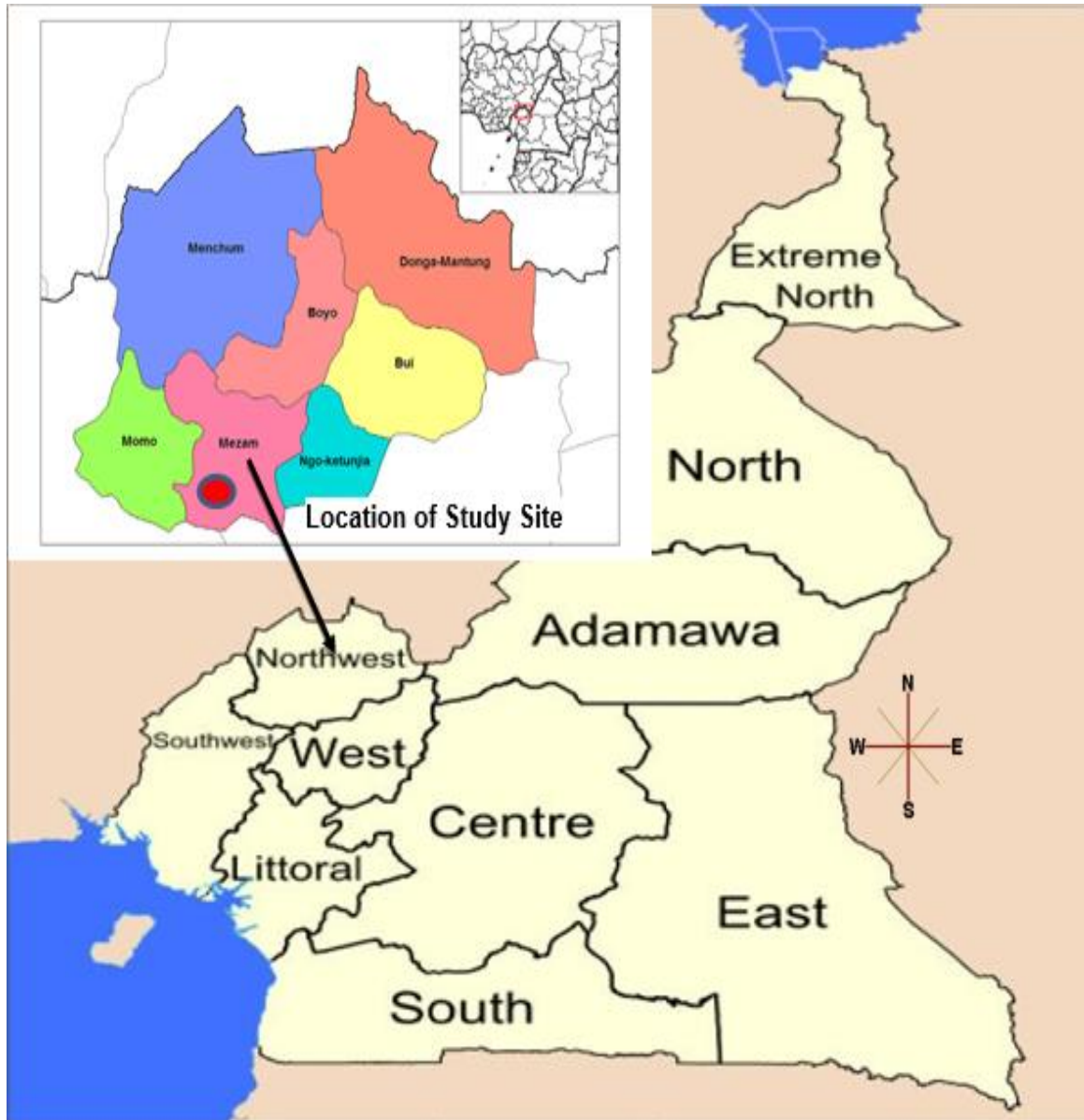


Fig. 2. Map of North West Region Showing Location of Mezam (Study Area)

Source: Adapted from Fogwe [63].

Notes:

1. the red circle in the map represents Mezam Division, the study area.
2. the research covered all the sub divisions of Mezam division, namely Bamenda 1, 2, 3, Tubah, Bafut, Bali and Santa.

Rural populations are largely responsible for agricultural production, thereby guaranteeing household food security GOs and NGOs are promoting agricultural projects¹¹ in order to enhance productive capacities that create employment and livelihoods for the poor. Mezam division is quite interesting for this study, given that it hosts government and non-government organizations, who are involved in providing (agricultural) project related services to the population. It is therefore ideal for a comparative analysis of the sustainability of Government and NGO-led projects [67].

2.3 Research Design

This study employed a mixed methods research design, by combining both quantitative and qualitative research methods, through a cross sectional survey.¹² This offered to the researcher the possibility of collecting quantitative data, and using qualitative methods to gather information which was relevant for interpreting and better understanding results from the quantitative survey. The design was very appropriate for empirically relevant studies, such as the impact of agricultural development projects [70]. The quantitative part of the study applied a structured, pretested questionnaire. This questionnaire was used to collect quantitative data on the socioeconomic characteristics of respondents, and to assess the key features on the impacts of agricultural development projects on beneficiaries. The questionnaire was divided into sections and administered to top, middle and low level managers, and project beneficiaries. The questionnaire was designed for before-and-after comparison in order to capture the changes attributable to the different projects. Qualitative data collection made use of key informant interviews, and field observation of project impacts in the beneficiary communities [71,72]. Secondary data for this study made use of policy documents and unpublished reports from researched organizations, published articles and other documents obtained through guided

¹¹ Agricultural Projects are development efforts that help improve the adequacy and timeliness of input supplies and specialised services to farming, forestry and fisheries as well as help improve the storage, processing and marketing systems of the said product(s) for improved livelihoods of humans [69].

¹² A cross-sectional study is a type of research design in which data is collected from many different individuals at a single point in time. In cross-sectional research, variables are observed without being influenced [70].

literature searches in google scholar, web of science, and science direct.

2.4 Study Population, Sampling Procedures and sample

Multistage sampling approach was adopted for this study, carried out in Mezam division in the North West region of Cameroon. The division was chosen because (1) it has the highest concentration of government and NGO agricultural development organizations in the region, and (2) it is fairly safe for field work compared to other divisions, considering the ongoing socioeconomic crisis in the North West region. The study population – all agricultural development projects with operational coverage within the seven (7) sub divisions in Mezam division – was drawn from a total of 52 development organizations with offices in the study region. In total, 22 organizations met the criteria for selection of the study population, that is (1) the organization must have, or is actively undertaking an agricultural development project, (2) either GO or NGO-led, irrespective of whether they are national or international organizations, and (3) having a head office in Mezam division. The retained (22) organizations were grouped into two for further sampling: 10 NGO and 12 GO-led agricultural development organizations.

The final sample was random. The names of all retained organizations were written on individual pieces of paper and put in separate buckets, and a child was asked to draw four (4) organizations each from each group, one at a time, without replacement. The eight retained organizations¹³ therefore formed the first sample for our study. The targeted interviewees include staff and beneficiaries of the retained development projects. Based on initial visits to these organizations, staff were generally categorized as top, middle and lower management. Top management constituted of the directors/ coordinators of projects and their direct assistants. Middle level management staff

¹³ACEFA (Programme d'Amélioration de la Compétitivité des Exploitations Familiales Agropastorale), AFOP (Programme d'Appui à la Rénovation et au Développement de la Formation Professionnelle dans les Secteurs de l'agriculture, de l'élevage et de la Pêche), ProCISA (Programme Mondial Centres d'Innovations Vertes pour le Secteur d'Agriculture, PADFA (PADFA Programme d'Appui au Développement des Filières Agricole), PIDMA (Projet d'Investissement et de Développement des Marchés Agricole), PROALCAM (Platform for the promotion of Local Flour in Cameroon), SUDAHSER (Sustainable Development and Humanitarian Services).

included chiefs of sections (for instance, gender/development, and monitoring and evaluation officers) in the organizations, who were involved in one way or the other in the studied agricultural development project. Low level staff included extension and field workers actively working directly with beneficiaries. Based on a rapid assessment of project staff in all retained organizations, a ratio of 2:5:8 was adopted for sampling top, middle and low management staff, respectively.

To select beneficiaries, the lists of beneficiaries were obtained from each retained organization. Only those who must have benefited from the activities of the selected projects within the last ten (10) years were retained to participate in the survey. The period of 10 years was assumed to be long enough for good impact assessments. The field staff and section heads facilitated this process in each organization. Final lists of beneficiaries in each of the 7 sub divisions for each organization were therefore established together with the staff. These lists provided the final sampling frame for random selection of beneficiaries in the field. A quick assessment of the final lists indicated that if each organization is to be fairly represented in the sample, it was not possible to sample over 23 beneficiaries per organization. Twenty-three was therefore set as the maximum number per organization. Beneficiaries were randomly selected for each organization without replacement, until the target

(23) was met for each organization. The research design for this study is summarized in Fig. 3.

2.5 Data Collection Instruments

The main data collection instrument for the study was a structured questionnaire. Both qualitative and quantitative data were collected, processed, analyzed and interpreted. This information was based on the socio-economic profile of respondents, understanding the key differences between government-led and NGO driven development projects in Mezam Division, the impacts of development projects on livelihood of beneficiaries and key factors that influence the sustainability of agricultural development projects. Primary data was gathered with the use of questionnaires. This owes to the fact that a pilot study was conducted which aimed at testing for the reliability and validity of the research instruments. The data from the questionnaire also helped us to calculate the coefficients, which in turn help the research, determine the consistency and reliability of the questionnaire for the study of the sustainability of agricultural development programs and the Accumulation of Social and Economic Capitals in Mezam. Adjustments were made on the final version of the questionnaire before wider application. It is also a diagnostic tool for effective data collection and the stakeholders' views/perception on the subject matter [73, 74].

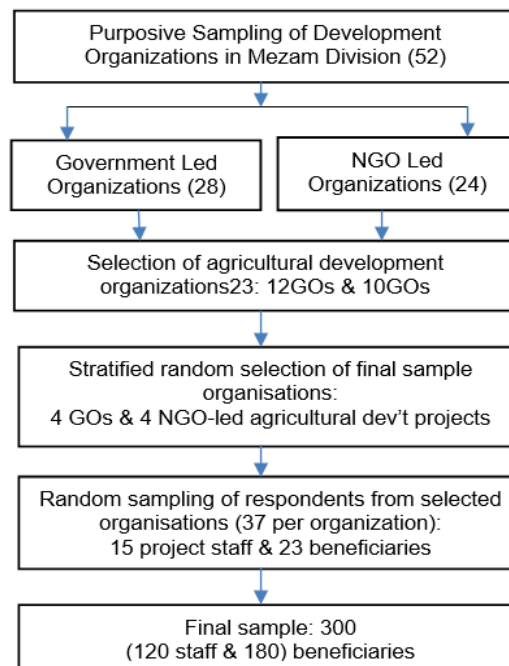


Fig. 3. Research design

The final sample of the study is presented on Table 1.

Table 1. Study sample

SN	Organization	Type	Number of Persons Interviewed			
			Top Management	Middle Management	Lower Management	Beneficiaries
1	ACEFA	GO-Led	2	5	8	23
2	AFOP	GO-Led	2	5	8	23
3	PADFA 2	GO-Led	2	5	8	22
4	PIDMA	GO-Led	2	5	8	22
5	Bamenda Water Project	NGO-Led	2	5	8	22
6	GIZ-ProCISA	NGO-Led	2	5	8	23
7	SUDAHSER	NGO-Led	2	5	8	23
8	PROALCAM	NGO-Led	2	5	8	22
TOTAL			16	40	64	180
			300			

Source: Own field data

2.6 Data Analysis and Presentation

In evaluating the sustainability of Government and NGO-driven agricultural development projects in Mezam Division, data collected was entered and analyzed using the Statistical Package for Social Sciences (SPSS) version 25.0, Excel, XLSTAT. Descriptive statistics (Mean scores, frequencies and percentages) were applied to analyze any key differences between government-led and NGO driven development, with respect to social and economic capitals. The data analyzed has been presented in tables and figures [75].

3. RESULTS AND DISCUSSION

3.1 Presentation of Results

3.1.1 Description of sample population

Analysis of demographic data showed that a majority of the respondents were male (54%), though significantly higher for Government-led project respondents as compared to NGO-led project respondents (over 63% and 53% respectively, $X^2 = 4.415$, $p = 0.036$). The majority of respondents were married (59%), had farming as their main source of livelihood (31%) and had university level of education (63.5%). It was however observed that a significantly higher proportion of the respondents for government-led projects as compared to NGO-led projects were found to be married (close to 67% and 51% respectively, $X^2 = 15.648$, $p = 0.001$). While majority of the respondents of the Government-led projects where civil servants (close to 33%),

a significantly higher proportion of the respondents in the NGO-led projects were farmers (39%, $X^2 = 27.453$, $p = 0.000$). It is also thought that the elites captured mostly observed in government projects due to their superior political powers while most NGOs work in remote areas due to the fact that 1) they are good at reaching and mobilising the poor, 2) empower poor communities to gain control of their lives while strengthening local institutions, 3) efficiently implement projects at lower costs than GO hence, promote sustainable development [76].

Majority of the respondents for both the government-led projects and NGO-led projects had university education; though this is higher for the government-led projects (69% and 56% respectively, $X^2 = 7.105$, $p = 0.065$). Hence, the tendency for NGOs working with the poor are higher, compared to GO working with elites. In this sense, it is likely that GO projects are unconsciously benefiting richer farmers. Only very small proportions (1.2% for the GO-led projects and 2.7% for the NGO-led projects) were found to have no formal education.

Table 2 revealed that the mean sample age was about 37 years (37.22 ± 10.834 years), suggesting that project beneficiaries generally fall within the working age group. The average household size for the entire sample was 5 persons (5 ± 4 persons) while estimated mean monthly income was evaluated at FCFA¹⁴ 117,640 (~US\$ 195.7697). A comparative analysis of the

¹⁴ FCFA refers to *Franc de la Communautaire Financiere D'Afrique*.

government-led and NGO-led projects showed no significant difference in the mean ages of the beneficiaries (38 years and 36 years respectively, $p = 0.159$). Similarly, no significant difference was observed in the average household size for the government-led and NGO-led project beneficiaries (6 persons and 5 persons respectively, $p = 0.672$), though slightly higher for the government-led project beneficiaries. However, the estimated monthly income was significantly higher for the beneficiaries of the government-led projects as compared to those of the NGO-led projects (with a monthly income of FCFA133,380 and FCFA101,580 respectively, a difference of FCFA 31,800, $t = 3.506$, $p = 0.001$). This refers to their total income with including that generated from agricultural activities.

3.1.2 Impact on Social Capital

The beneficiaries were asked to evaluate some social capital aspects that have been improved upon by the projects which they have benefitted from. The mean scores (from 0-4) for the variables are summarized on Table 3. The results generally showed a significant change in the accumulation of social capital by both beneficiaries of the NGO-led projects and Government led projects ($p = 0.000$). For instance, it was observed that there has been a significant increase in membership in social groups and networks by all beneficiaries (a mean score of 1.58/4 before and 2.75/4 respectively, $t = -16.006$, $p = 0.000$). A comparative analysis between the beneficiaries of the NGO-led projects and Government-led projects also showed significant increase in membership in groups and networks after project implementation (a mean score of 1.54 and 1.63, and respectively 2.58 and 2.68 respectively

before and after project implementation respectively, $p = 0.000$). Though slightly higher for beneficiaries of Government-led projects as compared to the NGO-led project beneficiaries, this difference showed no significance ($p > 0.05$). Note that group membership satisfies the need not only to belong, but gain information, knowledge and skills of sustainable management practices and understanding of the social environment. This will help the community achieve their bigger objectives in the short term comparatively.

A significant increase in the level of trust and solidarity among beneficiaries was also reported. This has also translated into increased reciprocity (mutual exchange) between beneficiaries and project staff. More so, results show a significant increase in level of knowledge acquired by project beneficiaries with respect to gender equality (from a mean score of 1.64 to 2.83 on 4 for the entire sample, from 1.67 to 2.86 on 4 for the Government-led beneficiaries, and 1.61 to 2.81 on 4 for the NGO-led beneficiaries, $p = 0.000$). These and the accumulation of other social capital assets is probably the reasons why the beneficiaries gave a high appreciation of their current livelihoods following the implementation of both the Government-led and NGO-led projects (a mean score of 2.79 for ALL categories, up from a mean score of 1.52 on 4 for the entire sample, 1.49 on 4 for the Government-led beneficiaries and 1.55 for the NGO-led beneficiaries before project implementation, $p = 0.000$). Besides, increased trust and solidarity among members is an awareness of shared interests. This creates a psychological sense of group unity. An increase of solidarity will definitely lead to the promotion and development of projects and hence, sustainability.

Table 2. Age, Household Size and Monthly Income of Respondents

Variable	Type of funded project	Mean	Std. Deviation	t-distribution
Age of respondent in years	Sample	37.22	10.834	$t = 1.414$
	Government-led projects	38.11	11.365	$p = 0.159$
	NGO-led projects	36.32	10.232	
Household size	Sample	5	4	$t = 0.422$
	Government-led projects	6	3	$p = 0.672$
	NGO-led projects	5	4	
Estimated monthly income/FCFA	Sample	117,640	78,340	$t = 3.506$
	Government-led projects	133,380	81,590	$p = 0.001$
	NGO-led projects	101,580	71,660	

Source: Own field Data

Table 3. Impact on Social Capital (Mean Scores/4)

Aspect	Organization	Before	After
Membership in groups and networks ***	Sample	1.58	2.75
	GO-led	1.63	2.8
	NGO-led	1.54	2.71
Level of trust among beneficiaries***	Sample	1.59	2.63
	GO-led	1.63	2.68
	NGO-led	1.55	2.58
Solidarity among beneficiaries***	Sample	1.64	2.78
	GO-led	1.69	2.77
	NGO-led	1.59	2.8
Solidarity between beneficiaries and project staff***	Sample	1.55	2.71
	GO-led	1.55	2.66
	NGO-led	1.55	2.77
Reciprocity among beneficiaries***	Sample	1.62	2.74
	GO-led	1.71	2.72
	NGO-led	1.56	2.69
Level of trust between project implementing organizations and beneficiaries***	Sample	1.63	2.82
	GO-led	1.6	2.86
	NGO-led	1.67	2.77
Knowledge of gender equality among beneficiaries***	Sample	1.64	2.83
	GO-led	1.67	2.86
	NGO-led	1.61	2.81
Prestige/ respect from community members***	Sample	1.6	2.86
	GO-led	1.66	2.92
	NGO-led	1.54	2.79
Good policies in the project that favor the promotion of culture and racial inequalities ***	Sample	1.58	2.74
	GO-led	1.52	2.61
	NGO-led	1.64	2.86
Project been positive to gender balance and is ameliorating the poverty situation of the beneficiary communities***	Sample	1.58	2.79
	GO-led	1.57	2.75
	NGO-led	1.59	2.83
Solidarity framework created amongst beneficiaries/community members ***	Sample	1.47	2.62
	GO-led	1.46	2.63
	NGO-led	1.48	2.61
Appreciation of livelihood situation ***	Sample	1.52	2.79
	GO-led	1.49	2.79
	NGO-led	1.55	2.79

Source: Own filed Data

***= Significant at 1%

3.1.3 Impact on economic capital

In addition to social capital accumulation, an analysis of the changes in economic capital of the beneficiaries was conducted both for the NGO-led projects and Government-led projects. The results on Table 4 show significant increase in economic capital accumulation for both groups. Just as was the case with the accumulation of social capital, significant increase in economic capital was observed. For instance, in the engagement of the beneficiaries in income generating activities before and after project implementation though slightly higher for the NGO-led than Government-led beneficiaries (from a mean score of 1.56 to 2.85 on 4 for the

entire sample, 1.61 to 2.74 on 4 for the Government-led beneficiaries, and from a mean score of 1.51 to 2.95 on 4 for the NGO-led beneficiaries, $p = 0.000$). Also, there has been a significant increase in the level of engagement in savings by the beneficiaries following the implementation of the projects (from a mean score of 1.4 to 2.6 on 4 for the entire sample, 1.34 to 2.53 on 4 for the Government-led beneficiaries and 1.45 to 2.66 on 4 for the NGO-led beneficiaries, $p = 0.000$). This is probably related to the fact that employment opportunities for beneficiaries have been increased through project activities. As reported by the beneficiaries, the implementation of the various projects have improved their skills to be able to

transform subsistence activities in to economic ones (from a mean score of 1.23 before project implementation to 2.62 after project implementation for the entire sample, 1.19 before project implementation to 2.46 after project implementation for the Government-led beneficiaries 1.28 before project implementation to 2.77 after project implementation for the NGO-led beneficiaries, p=0.000).

Generally, there has been a significant increase in the financial situations of the beneficiaries following the implementation of the various projects (from a mean score of 1.35 before project implementation to 2.61 after project implementation for the entire sample, from a mean score of 1.29 before project implementation to 2.53 after project implementation for the Government-led

beneficiaries and from a mean score of 1.42 before project implementation to 2.68 after project implementation for the NGO-led beneficiaries, p = 0.000).

As confirmed by a female beneficiary of PIDMA Project in Awing, Santa Sub Division during data collection:

“Though not highly sustainable, some of these projects have come to improve on our financial challenges through an enhancement in our livelihoods. Our cooperatives can now boast of a tractor which has been a source of income generation we never thought of”. Field observation confirmed presence of the tractor”.

Table 4. Impact on economic capital (Mean Scores/4)

Aspect	Organization	Before/4	After/4
Engagement in income generating activities by beneficiary***	Sample	1.56	2.85
	GO-led	1.61	2.74
	NGO-led	1.51	2.95
Engagement in savings activities***	Sample	1.4	2.6
	GO-led	1.34	2.53
	NGO-led	1.45	2.66
Engagement in credit activities***	Sample	1.39	2.62
	GO-led	1.39	2.32
	NGO-led	1.4	2.45
Profits from project-related activities***	Sample	1.38	2.62
	GO-led	1.39	2.61
	NGO-led	1.37	2.62
Rate of reliability of transactions with suppliers and retailers***	Sample	1.39	2.52
	GO-led	1.34	2.42
	NGO-led	1.44	2.61
Innovative activities that created value, promoted new products***	Sample	1.34	2.62
	GO-led	1.28	2.48
	NGO-led	1.39	2.75
Transforming subsistence activities into economic ones***	Sample	1.23	2.62
	GO-led	1.19	2.46
	NGO-led	1.28	2.77
Employment opportunities for beneficiaries***	Sample	1.3	2.73
	GO-led	1.24	2.69
	NGO-led	1.36	2.76
Overall financial sustainability of beneficiary***	Sample	1.35	2.61
	GO-led	1.29	2.53
	NGO-led	1.42	2.68

Source: Own filed data
 ***= Significant at 1%.

3.2 Discussion of Results

3.2.1 Description of sample population

The socio-demographic characteristics of the respondents indicate that the average age of the respondents was 37 years with an average household size of five persons. 53.7% of the sample were male and 42.7% were female. However, population was higher in terms of response in the Government-led projects with the percentage of Male/female being 63.3%/36.7% as opposed to 53%/47% respectively for the NGO-led development projects. The results are not in resonance with previous studies in the region contending that women are the backbone of agriculture [67, 77]. Unfortunately, both GO and NGO projects do not sufficiently target them. This gender discrepancy is probably explained by gender-specific obstacles including inadequate access to land and capital perpetuated by existing patriarchal systems [10], which limit women's access and control to resources needed to benefit from these development projects.

3.2.2 Impact of development project on social capital accumulation

With respect to social capital, the factors under study were robust and highly significant with the mean average score increasing from 1.4/4 before project realization to 1.71/4 after project implementation for the GO-led projects. For NGO-led projects, an increase from 2.58/4 before project implementation to a mean of 2.92/4 after project implementation was recorded. This has created a mean positive difference for the NGO-led projects of 1.21. The existence of this difference can be related to the fact that NGOs are organizations that operate independently of government and most often are involved in a wide range of activities such as social services, advocacy and research. Meanwhile, GOs are typically responsible for providing public services and enforcing laws and regulations. This indicates that the importance of social capital variables under study has been felt by the implementing organization. This is a prerequisite as the social structure is undergoing changes due to the growing income opportunities through the use of natural resources. Significant contributions to global knowledge originated with local people from generation to generation and closely interwoven with people's cultural values. This significant contribution has also increased the level of trust, reciprocity and solidarity among

beneficiaries and staff of implementing organizations ranging from 1.4/4 to 1.71/4 for GO-led to between 2.58 to 2.69 for NGO-led projects. This is important in building a sense of community in organizations, particularly within the crisis context where adverse working conditions prevail. This captures what Buzás & Faragó [78] said- "Organizational adaptation is an imperative especially during crisis situation p. 9". This boils down to the assumption that staff of NGOs enjoy more social capital than those of the GOs because of the increase tolerance of people working together effectively to achieve a common objective while maintaining high degree of trust, shared identity and respecting the norms, values and culture of the community [78].

The implementation also sees a degree of prestige/respect from other community members to the innovative adopters of the projects who are reaping the benefits of the project idea(s) as well as to the implementing organizations [45]. Overall, and based on the mean changes in social capital calculated as the mean difference in all social capital variables before and after project intervention (Mean of 1.16, and 1.18 for GO and NGO-led projects, respectively), no significant difference was registered between the two organizational forms. However, NGOs seem to have a slightly higher impact on social capital compared to GO-led projects. This mirrors contentions of previous studies that participating in agricultural/livelihood training programs often leads to social capital accumulation [56, 79]. In some cases, the accumulation of social capital leads to punctured caste-based discrimination, reduction in gender based violence and early marriage, reduced marginalization and illiteracy especially amongst women and girls that develop the capacity to improve household and communal bonds and reduce welfare losses [80, 81]. This was however, not captured in this research but can be interesting in future research.

3.2.3 Impact on economic capital accumulation

Changes in economic capital was captured using a number of variables including: engagement in income generating activities, engagement in savings, engagement in credit activities, profits generated from project-related activities, rate of reliability of transactions with suppliers/retailers, beneficiary employment opportunities, transforming subsistence activities into economic ones. The results show significant increase in

economic capital accumulation for both groups with an average mean impact difference of 1.11 on 4. This has led to an engagement in income generating activities by beneficiaries with increased income, profits and savings as end products. Therefore, participating in both GO and NGO-driven agricultural programs allowed beneficiaries to acquire and implement more skills and capacity that allowed them to generate more income or profits. Overall, and based on the mean changes in economic calculated as the mean difference in all economic capital variables before and after project intervention (Mean change of 1.19, and 1.29 for GO and NGO-led projects, respectively), no significant difference was observed. NGO projects however had slightly higher impacts on economic capital compared to GO-led projects.

As one of the field staff from an NGO said during the key informant interviews:

“Our project beneficiaries have expanded and/or intensified their activities. Many of them now own accounts in local financial institutions and report an increase in farm investments and savings”.

This statement was confirmed through observations in the field, and casual conversations with beneficiaries. Our study results tie with that of Riddley [82] and Pasa [79], who reported an increase in income earnings for over 76% and 100% of their beneficiaries respectively, after project interventions. This increase in income is expected to increase annual savings and allow the beneficiaries to consistently direct financial resources to basic necessities for their families, including better nutrition, medicines, educational opportunities. For cases in Cameroon, visit [16, 53, 55, 82, 83].

Participating in agricultural livelihood programs thus seems to be a key component in increasing access to finances for beneficiaries especially through the adoption of improved agricultural technologies, up-scaled farm output and farm income, leading to a corresponding increase in net farm profits, reduced poverty and sustained livelihoods [84]. This is of interest to the community as it is a source of employment opportunity to a majority of the population especially the youths. This scenario is same as postulated by Tambi [67], who reported that about 40% of the world population live below the National Poverty line and spend about one third of their income on food [67]. This increase in

income generating activities has some degree of business relations within the division that has led to an increase reliability of economic transactions with suppliers and retailers since the economic dormancy period is undergoing breakage. GO and NGO play a major complementary role in that they institute policy development, regulation, facilitation and internal sustainability management through setting goals, driving change, and leading by example [85]. They differ in that policy levels, the GO develop new policies to steer and enable sustainable innovations while the NGO develop partnership approaches in which they fund and work with other organizations, direct funding through donors, responding to relief work on international emergencies. Based on regulations, all GO initiatives are initiated with decrees and enforced by legal institutions same as the NGO. Management of GO is by the corporate social responsibility of the state as an economic actor while the NGOs collaborates with government and society in order to achieve sustainability policy objectives [32].

4. CONCLUSION

This study has examined the comparative contribution of agricultural development projects in Mezam Division, using primary data from 300 respondents of eight agricultural projects from four (4) governmental Led and four (4) non-governmental led organizations. The study focused on analyzing the changes in social and economic capitals accumulation, attributable to each organizational form, and the differences between the organizations. The overall findings of this study show that agricultural projects implemented by both GO and the NGO-led organizations have positive impacts on social and economic capital accumulation for beneficiaries, though slightly higher for NGO-led projects as compared to GO-led projects. This study concludes that there were significant improvements in the social, and economic assets of beneficiaries who participated in both NGO-led and GO-led agricultural development projects in the study site. Agricultural development projects training programs play an imperative role in facilitating farmers to overcome social and financial, constraints in Mezam, in the North West region of Cameroon. However, women who are the backbone of agricultural production in the study region were less targeted by GO-led projects. This might have long term implications on the sustainability of agricultural development efforts, unless measures are taken to better

include the main agricultural stakeholders-women in future projects. The results seem to suggest that the organizational form does not matter. What matters, or factors that explain differences when they exist should be researched. We recognize that our study is an isolated one. Thus, while it eases the theoretical tension between the role of Governments and NGOs in the (agricultural) development process.

Further studies are needed to ground our results. Future research in the study site should include more organizations and beneficiaries to be of more use to development policy at least in the study area. Disaggregating the analysis by staff and beneficiaries can illuminate differences in assessment of the impact of GO and NGO-led projects on social and economic capitals in the study region.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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