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Impact of Mega-Agricultural Projects, Searching the Silver Lining in Cameroon

Ngochembo Gaston Gwemelang [1]*, Mbouh Vera Bekebang [2]

[1]Researcher; Department of Agribusiness Technology in the College of Technology of the University of Bamenda

[2]Researcher; AgriDynamic research and innovation center Ndop, Cameroon

https://orcid.org/0000-0001-8546-5226

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Abstract

Purpose: Large-scale projects have created significant positive impacts in different countries around the world. Such impact is less common in Africa and Cameroon's agricultural sector in particular. This study was designed to investigate such impact due to the renewed interest in such projects, whereas, there is a slow rate of development of the agricultural sector in Cameroon.

Methodology*:* We examined the experience of actors in the sector and analysed qualitative responses to a survey examining the possible impact of some completed major large-scale projects in Ngoketunjia of the North West Region and the Noun of the Western Region. A total of 45 experts were interviewed and 400 farmers provided answers to survey questions probing 'silver linings' they may have experienced from large-scale projects. We analysed these qualitative responses using a thematic analysis approach.

Findings*:* Respondents identified a silver lining under two themes social and economic. Socially, skills and knowledge improvement were observed to have improved while access to social facilities (electricity, health, water, schools), as well as integration and interactions amongst villagers, were less visible. Therefore the claim that large-scale agricultural projects led to social impact might be a faulty one as the silver lining in this dimension cannot be directly attributed to such projects. Under the economic domain silver lining was observed in access to employable opportunities, market, and finance access as well as value added to raw materials. However, no silver lining was observed in income-generating activities and production volume increments.

Unique Contribution to Theory, Practice, and Policy: Major impact disruptions were linked to project design and delays that affected the budget, supply shortages, and efficiency. To create the desired impact, we recommend that, large-scale projects should proactively focus on impact-driven project components as well as reschedule activities to minimize delays, penalties, and cost overruns.

Keywords: *Megaprojects, Agriculture, Silver Lining, Project-Delay, Western Cameroon.*

1. Introduction

Megaprojects require a great deal of planning, coordination, and collaboration through established project management processes, strong team effort, and involvement of multiple stakeholders. These projects can greatly contribute to national growth, wealth creation, and poverty reduction. However, their management is, often, challenging for government officials and project managers because project objectives are not identified (Kwak et al., 2014), formal project management processes are not in place (Patanakul, 2014),and costs and benefits are difficult to justify and measure (Zwikael&Smyrk, 2012). Cameroon, having opened its economy in the 1980s by becoming a member of the World Trade Organization (WTO) altering trade policies to comply with multilateral rules, but not pursuing the reform process religiously and vigorously, is now paying a price on the economic and especially agricultural development front (Ball, 2016). Prior to complying with WTO rules, Cameroon possessed food sovereignty (Ball, 2016) and today the agricultural sector is threatened with increasing population growth, land scarcity, climate change degrading ecosystems, and underinvestment in agricultural research, infrastructure, and technology irrespective of numerous mega-agricultural projects implemented since the 1980s (Stein & Kalina, 2021)Mega-agricultural projects are characterised by long durations, large budgets, multiple stakeholders, and plenty of uncertainties that make them difficult to plan, implement, and manage effectively. Stakeholders of such projects are now under increasing pressure to meet public needs within more restricted budgets (Chih & Zwikael, 2015) given limited justification of previous projects' impacts. Facing these limitations, the application and performance of project management in agricultural projects in Cameroon has been historically poor as seen in increasing inequality and poverty in rural areas where agriculture is practiced. Many such projects are extended for over 12 months, failing to meet their objectives, wasting taxpayers' money, or are abruptly terminated while planning or implementation (Gyapong, 2020). Primary funding for such projects comes from constituent loans and grants from international donors and to a lesser extent from taxpayers in Cameroon (MINFI, 2023). Including uncertainties in the implementation under which the value proposition of projects may need to be revisited and possibly changed, the management processes for opportunities therein are concerned with the discovery, selection, and exploitation to discover potential silver linings in such projects (Manno, 2011). Mega-agricultural projects are therefore often scrutinized and criticized by the general public, which exacerbates the image of the government and other implementing stakeholders irrespective of possible impacts or silver lining (Guyalo et al., 2022). This research investigated possible silver linings in the context of the expected impact of mega agricultural projects. In this study, a megaproject is defined as a project that has a planned budget of over $100M. Some of these projects can also be classified as "large scale or megaprojects", defined by the United States Federal Highway Administration, as *"projects that cost more than $1 billion, or projects of a significant cost that attracts a high level of public attention or political interests because of substantial direct and indirect impacts on the community environment and budget"* (Capka, 2004).

While many studies have been conducted to investigate the impact of megaprojects, this study differs from others in various ways. First, it addresses a fundamental question of *"what impact of agriculture and rural development can be attributed to large-scale agricultural projects?* Because project management approaches should be utilized contingently to the project impacts (Shenhar & Dvir, 2007), a better understanding of fundamental characteristics of mega-agricultural projects can benefit both researchers and practitioners to further refine project management approaches to achieve the desired impact. Second, this study investigated the impact of completed large-scale agricultural projects in the North West and West regions of Cameroon especially projects that are sponsored by donors (the World Bank and International Fund of Agricultural Development; IFAD) in collaboration with government and beneficiaries. The investigation addressed the often overlooked perceptions of local people in megaprojects implemented in the agricultural sector. The key findings of this study can help policymakers, donors, and project managers implement a more tailored management approach to mega-agricultural projects. This research also contributes to the theory by highlighting the challenges and opportunities related to applying and implementing project management principles in mega-agricultural projects, as well as raising research propositions.

2. Literature Review

2.1. The need for mega agricultural projects in Cameroon

Agriculture exists as one of the chief sectors in Cameroon's economy and plays a central role in achieving development but its growth rate lag behind non-African developing countries, even though there is great potential. Of its $100.64 billion in gross domestic product (GDP), the agricultural sector accounts for about 22% (MINFI, 2023). Sixty-two percent of the Cameroonian population is employed by agriculture (Gbetnkom, & Khan, 2020). Exports of agricultural goods totalled $635 million, while imports totalled $1.1 billion, yielding a trade deficit of $ 431 million CFA in 2017 (MINFI, 2023). Out of its 475,000 square kilometers of physical area, 15% is arable land, available in four ecological zones with fertile soils, and Cameroon has the probability of food sovereignty (Ball, 2016). Prior to the 1980s, Cameroon possessed food sovereignty which was better than that of Turkey and Singapore; however, in the 1980s, most West African countries joined the WTO and had to alter trade policies to comply with multilateral rules, for the interests of the economic powers of the Global North (Ball, 2016; Gbetnkom & Khan, 2020). With the liberalization of markets came the end of protectionist policies and the self-sufficiency of Cameroon. Following the global economic crisis of 1985 and 1986, the government of Cameroon recognized the importance of small farming as a guarantor of food security and emphasized its development (Stein &Kalina, 2021). Despite this recognition and investment in large-scale agricultural projects, Cameroon has not regained food sovereignty and remains import-dependent (Gbetnkom & Khan, 2020, MINFI, 2023). Threats to local small-scale agriculture today that enhance dependency on imports include population growth, land scarcity, climate change, degrading ecosystems, and underinvestment in agricultural research, infrastructure, and technology (Stein & Kalina, 2021; Gbetnkom & Khan, 2020). With over 30 ongoing large-scale

projects that cost over $1.65 billion (one trillion FCFA) per year (CAPEF, 2023; MINADER 2022), this demonstrates the Cameroon government's commitment to developing its agricultural sector through the initiation and implementation of megaprojects to deal with current threats. Whilst many mega-agricultural projects are geared towards `improving' the agriculture sector, they are usually initiated and financed by the state as well as international development partners, with top-down technocratic planning practices (Kennedy, 2015). The logic on which many megaprojects are built is collective benefits for the rural and urban dwellers; for example food security for all, electricity for everybody, road access, etc. Flyvbjerg (2014) argued that policymakers are attracted to megaprojects for four reasons; (1) technology transfers, pushing the boundaries for what technology can do (2) economic sublime where business people and trade unions benefit from profits and jobs created by megaprojects (3) political interest in which politicians rip benefits for themselves, and (4) aesthetic sublime where designers and people gain pleasure from good design of infrastructures. The renewed interest in megaprojects is globalisation which is associated with social growth, economic dynamics, sustainability, and competitiveness (Balkyte & Tvaronavičiene, 2010).

2.2. Impact of mega-agricultural projects: searching for the silver lining

Most governments in developing nations including Cameroon are using mega-agricultural projects to scale up rural areas' development and competitiveness, requiring integration of agricultural projects with other infrastructural development components such as road networks, and in return, attract investments (Witte & Spit, 2019). These megaprojects touch on multiple stakeholders, possibly leading to all kinds of changes in adjacent areas (Erkul et al., 2016). However, the attempt to scale- up rural area development and make it competitive sometimes fails to consider the needs of the affected citizens during the megaproject development (Brussel et al., 2019). The development of large-scale agricultural projects, whether new or upgrading existing ones, is presumed to have a range of impacts on the population, rural life, economic status, and environment (Manno, 2011; Kennedy, 2015; Witte &Spit, 2019). The impacts may be both positive and negative depending on stakeholder’s expectations and experiences with the project (Sutherland et al., 2015). Studies have shown that due to the availability of land at low cost and nearness to jobs in cities, rural areas have become the destination for mega agricultural development projects (Sutherland et al., 2015; Witte and Spit, 2019). Such projects have been found to improve poverty status, food security, and mobility enhancing accessibility to jobs, as well as an increasing market for agricultural goods and services (Engström & Hajdu, 2019; Hamann & Sneyd, 2021; He et al., 2021; Abesha et al., 2022). It has also been presumed that mega-agricultural projects reduction in import and low capital flight, and improve the living conditions of those living near such projects through possibilities for social development, economic opportunities, and enhancement of the welfare of communities (Harwood, 2020). They were also seen to have the power to promote interactions among commodities value chains, especially those who are engaged in the lower section of the value chains (Doan & Oduro, 2012). Additionally, large-scale agricultural projects also tend to lead to active land-use changes in many developing

nations, specifically, the linking up of the rural to urban environments with more interaction between them, and with more relationship that permits cohesion and coherence (Ika et al., 2012; Engström & Hajdu, 2019). These positive impacts may change autonomously amongst beneficiaries relying upon explicit hierarchical and environmental settings. However, mega-agricultural projects are also endowed with negative socio-economic changes in certain communities or for specific social groups, increasing income disparity as they offer limited benefits to the poor or further enhance inequality between rural settlers themselves and the urban settlers (Abylova & Salykova, 2019; Müller-Mahn et al., 2021). This suggests that mega-agricultural projects tend to benefit the rich, who own land and are further able to access additional land due to an increase in land values, at the expense of the poor (Porter 2011; Müller-Mahn et al., 2021). Therefore, both spatial and social differentiations exist among stakeholders regarding megaprojects implementations. This is likely to aggravate segregation, gentrification, and polarisation enhancing existing inequalities (Mosley &Watson, 2016). Some megaprojects are seen as a recipe for the displacement of the poor due to gentrification processes. Empirical evidence shows gentrification in the Global South as direct and indirect displacement of low-income groups by the rich or large companies as a result of an increase in property rentals and land grabbing (Krijnen, 2018; Müller-Mahn et al., 2021).

We investigated the impacts of mega-agricultural projects over time, considering different types of impacts. The time dimension plays a prominent role in shaping the impacts of megaprojects, especially in ensuring sustainability (Steg & Gifford 2005). In particular, completed megaprojects that focused on food security, economic growth, and poverty reduction usually reveal their impact over a long period (Witte &Spit, 2019; Engström & Hajdu 2019). Such impact is less visible in case of Cameroon with its high dependency on common food items like rice, maize, and flour (Gbetnkom & Khan, 2020, MINFI, 2023). This causes perceptions to change over time, through the dynamics attached to the following three project stages:

Planning stage: The planning stage is where the project solution is further developed in as much detail as possible to meet the project's objective. The project's tasks and resource requirements are identified; schedule and cost estimates are prepared along with the strategy for communicating with stakeholders in regards to project impact (Wysocki, 2011). Uncertainties in predicting the actual impacts of projects attributed to conflicting interests among stakeholders make the planning stage uncertain. The planning stage is often a top-down technocratic process and needs to address the challenge of multilevel appraisal in the decision-making process, at national, regional, and local levels (Kennedy, 2015, 2022). Planning requires a high level of information which is often limited, leading to biased judgment as political interests dominate the process (Samset, 2013; Müller-Mahn et al., 2021).

Implementation stage: During the third stage, the implementation phase, the project plan is put into motion, and performs the work of the project and activities carried out are continuously monitored and appropriate adjustments are made and recorded as variances from the original plan (Wysocki, 2011). During the implementation stage, some temporal positive and negative effects

can become visible from the task carried out (Merrow, 2011).Information about such effects is used to maintain control over the direction of the project by measuring the performance of the project activities and comparing the results with the original project plan (Wysocki, 2011). As such stakeholders are informed in case of corrective actions in the areas of cost, schedule, and quality of deliverables. Researchers have observed that, development planning focuses mainly on project implementation and that much less attention is paid to issues of operation, maintenance, and sustainability (Hannan & Sutherland, 2015; He et al., 2021; Ashkanani, &Franzoi, 2022).

Sustainability stage: Both governments and international development agencies are increasingly aware of the importance of this stage which determines the capacity of a project to continue to deliver its intended benefits over a long period (Bamberger & Cheema, 1990). At this stage, the direct effects become visible and after a certain period, the net benefits tend to become positive or negative (Engström & Hajdu, 2019). Projects' silver lining may be observed when sustainability on individual projects includes their impacts on broader developmental objectives. Slevin, & Pinto, (1987) discovered that megaprojects are selected, prepared, appraised, supervised, and evaluated in cooperation with stakeholders focusing on the long-term impact. An important aspect of the sustainability stage is a study of lessons learned; to examine what went well and what didn't. Through this type of study, the wisdom of experience is transferred back to the project organization, which will help future projects (Merrow, 2011).

2.3. Sustaining mega-agricultural projects impacts

Megaprojects are and will continue in the foreseeable future, to be the main tool of agricultural development. Despite an increased emphasis on program and sector lending, multilateral and bilateral assistance agencies provide most of their aid through projects. During the last three decades, the Cameroon government has planned and implemented numerous agricultural and rural development projects. With varying degrees, most of these projects were aimed at transforming rural areas, by raising agricultural and rural productivity, reducing disparities in access to services, and strengthening cooperation in rural areas for production and distribution (Kimengsi et al., 2016). The irresistible majority of people in Cameroon live in rural areas making rural development an important objective of development planning (MINFI, 2023). Multilateral organizations such as the World Bank, African Development Bank, and bilateral donor agencies such as the United States Agency for International Development (USAID), International Fund of Agricultural Development (IFAD), The AgenceFrançaise de Développement (AFD), Deutsche Gesellschaftfür Internationale Zusammenarbeit (GIZ), Japan International Cooperation Agency (JICA) etc that have been working in Cameroon since the early 1960s assisting in this sector (Bamberger & Cheema,1990; Folefack et al., 2020). The World Bank alone has invested over US$ 1.2 billion from 1980 till the day in 29 megaprojects out of which, 3 are still ongoing, most of these projects included three components: (i) support for the production, processing, and marketing (focused on the funding of sub-projects from producers' organisations, funding of essential public infrastructure sub-projects and supporting access to rural finance); (ii) support to essential public services and technology transfer (focused on support to essential public services and improvement

of agricultural technology transfer) (iii) project Coordination and Management (World Bank, 2023). IFAD has also been active since 1980 in the sector with an investment of US$ 492.14 million on 12 projects and two are ongoing (IFAD, 2023). The components of most projects included; (i) support to production as well as essential rural infrastructure and rural finance (ii) support to marketing and organisational development and (iii) project coordination and knowledge management with four expenditure categories (i) civil works; (ii)) equipment and small materials; (iii) service providers, studies, technical assistance, and training; and (iv) salaries, allowances, and operating costs (IFAD, 2018; Folefack et al., 2020). The components were cross-cutting involving more stakeholders in implementations. Folefack et al. (2020) found that a hierarchical organisation model is used in implementing large-scale agricultural projects. The model comprises of project steering committee, a project coordination team at the national level, and Regional Coordination Units made up of appointed members (IFAD. 2010). When other components are linked to other ministries, then the Project Steering Committee would have a multi-ministerial composition and will be co-chaired by the Secretaries-General of MINADER. The vice-chair is often an expert from any other ministry directly involved in one of the main components (IFAD. 2010). The steering committee had ensured optimal megaproject impacts especially in the information technology sector as reported by Merrow (2011). The steering committees are widely used in multilateral and bilateral mega-agricultural projects in Cameroon offering the opportunity to optimise the benefits and minimise the negative externalities (Folefack et al., 2020).

3. Methodology

The research uses a mixed-methods and a comparative case study approach to collect qualitative data for analysis. This study was conducted in the Ngoketunjia and Noun divisions of the North West and Western regions of Cameroon respectively. The Divisions were selected based on their importance in agricultural productivity and access to megaprojects implemented in Cameroon. To operationalise the variables identified, we converted aspects of dimensions of impacts that influence respondents' perceptions that were mentioned in literature into a list of attributes, which we used in our questionnaire (Table 1). We started with a qualitative interview of 45 experts involved (in)directly with the management of large-scale projects recruited through the snowball technique. The interview gave a fruitful insight into implemented large-scale projects in the research areas and their impacts, with a particular focus on the silver lining under social, economic, and environmental dimensions. The interviews were used to update a structures questionnaire that was administered later to 400 respondents (200 per Division) who participated in four selected megaprojects the Cameroonian government and donors had implemented to promote agricultural development; The Agriculture Investment and Market Development Project (PIDMA) Agricultural Competitiveness Project (PACA), Commodity Value Chain Development Support Project – Phase I (PADFA I) and Roots and Tubers Market-Driven Development Programme (PNDRT). The first two were sponsored by the World Bank and the last two by the IFAD.

Table 1: Indicators to measure the impact of a mega agricultural project

Dimensions	Indicator	Description	Some supporting literature
Social	Change of level	Access to electricity, water, schools, transport, health facilities, etc. Improve skills and knowledge Food security People integration and interactions Feeling pride in local product Displacement	Korytárová et al., 2022; Khanani et al., 202; Jayne et al., 2019; Gellert &Lynch, 2003; Tambi, 2019
Economic	Change in economic conditions	Access to employable opportunities, Income-generating activities, Access the market systems Raising income New farms creations Access to finance Value added to raw materials Tax revenue Export of local products Change in land access New farms creations Increase production volume Lowering the cost of production	Korytárová et al., 2022; Khanani et al., 2021; He et al., 2021; Müller-Müller-Mahnet al., 2021; Folefack et al., 2020; Gyapong, 2020; Tambi, 2019
Environment	Change of level	Access to climate-smart technologies Improve land use Reduction is desertification Sustainable production system Protection of biodiversity Freshwater use Level of pollution	Li et al. 2002 ; Ika et al., 2012; Audrey, 2016; Engström & Hajdu, 2019

The main criterion for selecting respondents was that they must have benefited from a megaproject of a multilateral organization and or bilateral donor agency. Respondents were asked to rate how much they agreed with the statements presented to them. Responses cover the three phases of the dimension of impact and were measured on a five-point scale. To explore the context of the project, we also conducted desk research on policy documents, and information on the official websites of multilateral organizations and or bilateral donor agencies. To ensure the quality and reliability of interviews, the selection of interviewees considered the diversity of their backgrounds and professional expertise in large-scale agricultural projects. Key principles of ethical considerations identified by Easterby-Smith et al. (2018) were applied to protect the interest of the research participants and the integrity of the research results (accuracy and no bias).

We performed exploratory factor analysis to generate appropriate impact variables reflecting respondents' general perceptions about the impacts of mega agricultural projects. A list of possible impacts was developed from the theoretical framework; we created a list of possible attributes (Table 3). Three factors were created from the analysis, namely social impact, economic impact, and specific environmental effect.

4. Results and Discussion

Participants respectively had 12 and 32 years of experience minimum and maximum in large-scale agricultural project management, and 18 years on average. For gender, males were 70% and females 30% and all of them were active members (90%) and management teams (10%) of institutions that participated in large-scale agricultural projects. Of the persons interviewed, 2 were senior consultants in large-scale agricultural projects, 2 were academic experts, 2 were presidents of large-scale farmer cooperatives, and 2 were Ministry of Agriculture and Rural Development experts. The background of the participants interviewed was well suited to provide crucial information on the impact of large-scale agricultural projects. The results of the investigation on the possible silver lining of mega agricultural projects were captured irrespective of the wide negative externalities reported during expert interviews which included, the loss of local food consumption, lack of employment opportunities, failed compensation schemes, and some level of displacements reported by experts interviewed. This raises the question of whether people affected by the socio-political crisis in the Ngoketunjia Division have other perceptions of mega-projects as compared to those in the Noun Division even though they both have similar socioeconomic landscapes and development characteristics.

4.1. Perception of large-scale agricultural projects

I feel positive about the megaproject implemented during the last fifteen years

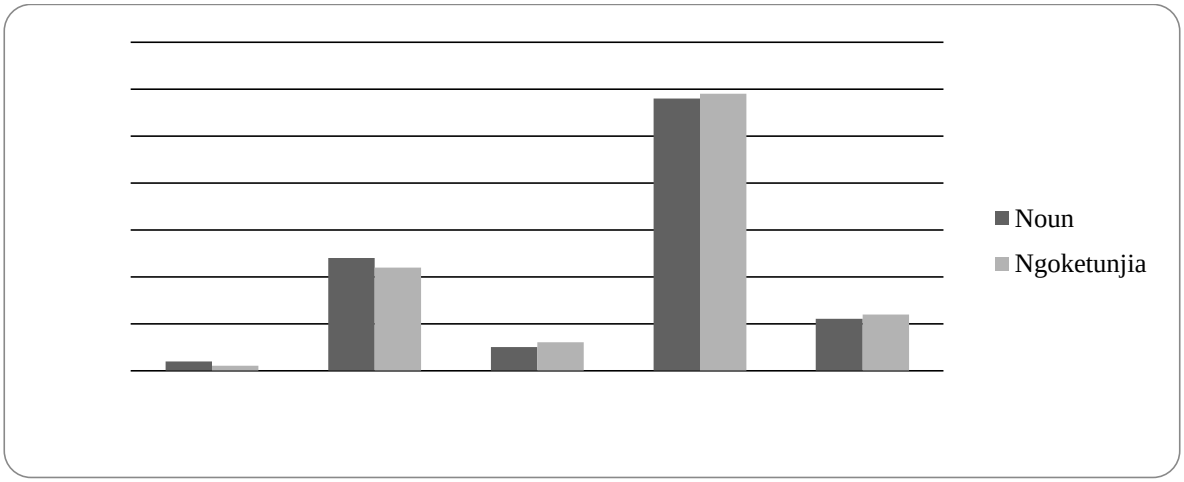

Figure 1: level of agreement and positive feeling about the megaproject

Surprisingly, the results of how positive respondents felt about mega agricultural projects were almost the same in both Divisions. A vast majority of respondents reported feeling negative about such projects as about 65% and 68% generally disagree with the Noun and Ngoketunjia Divisions respectively; only approximately 25% and 22% of respondents reported feeling positive in the same order (Figure 1). There are two plausible reasons for this, related to the development process and the level of the agricultural sector. Firstly, the increasing import level of basic food items like rice, maize, and fish against billions spend on these sub-sector mega projects. The local production process had not been improved as compared to the late 1970s and limited employment has been created in the sector as an encouragement factor to the large rural unemployed population.

Table 2: Cross-tabulation between personal benefits and frequency of participation in mega projects

		Frequency of participation in the last 15 years			
		Seldom (one)	**Occasionally (Twice)**	**Often (Trice)**	**Total**
Personal benefits	Agree	10	5	9	6
	Neural	4	5	4	4
	Disagree	63	56	53	53
	Strongly disagree	23	34	34	37
Total		100	100	100	100
		18	44	32	100

At the same time, regarding the positive effects at a personal level of respondents who have either seldom, occasionally, or often participated in mega agricultural projects in the past 15 years, the vast majority of the respondents (at least 83%) generally disagree with personal benefits (Table 2). A key reason is that such projects are often delayed leading to cost overruns as a result of the accumulation of interest on loans which donors and the government are less willing to accommodate such cost compromising the project's impact at the personal level.

4.2. Impact of a large-scale project and silver lining

The reliability of impact variables was confirmed using Cronbach's alpha to measure internal consistency. The tested impact variable value is 0.776, which is significantly greater than 0.5. Factor analysis was applied to reduce these 9 impact variables to an underlying smaller number that is social, economic, and environmental. Principal component analysis was conducted using orthogonal rotation (varimax). The value of Bartlett's test of sphericity is 15899.5 (p=0.000), which implies that the correlation matrix is not an identity matrix. The correlation matrix demonstrates that all variables have a significant correlation at the 0.05 level.

Table 3: Impact dimension of megaproject

Description of factors and variables N = 400	Commonalities	Factors loading	Respondents with silver lining
Social impact (66.972%)			
Access to social facilities (electricity, health, water, schools)	.387	.213	4%
Improve skills and knowledge	.473	.389	10%
Integration and interactions	.072	.212	1%
Economic impact (64.224%)			
Access to employable opportunities,	.472	.311	3%
Income generating activities	.453	.521	4%
Increase production volume	.289	.135	1%
Access the market	.367	.399	2%
Access to finance	.264	.226	1%
Value added to raw materials	.475	.411	5%

Two impact dimensions were generated from the analysis, namely social and economic impacts

4.2.1. Social Impact

In this dimension, three attributes emerged, with 66.972% variance (which explains the expected social impact) including social facilities (electricity, health, water, schools) (agreed by 4% of respondents see Table 3), improved skills and knowledge (agreed by 10% of respondents), and enhance people integration and interactions (agreed by 1% of respondents) in the research areas. In our search for the silver lining, over the last 15 years an improvement was reported in access to social facilities by respondents (farmers surveyed and experts interviewed) but could they not relate the improvement to large-scale agricultural projects. Firstly, the negative perceptions held by experts interviewed who contested the implementation of social impact activities of large-scale projects even though most have such components in their design such as rural infrastructure and other social amenities creation (IFAD 2010; Witte and Spit, 2019; World Bank 2023). According to experts interviewed, the implementation of such components sometimes overshadowed mainstream agricultural development components leaving beneficiaries unable to connect the impact with the said projects.

Such limited connection is in line with scholars' argument that social impact in large-scale projects is particularly complex as a result of their direct and indirect impacts that must be measured in an inclusive way (Bekele & Bekele, 2017; Abylova&Salykova, 2019). But others argued that beneficiaries are often not in a position to reliably judge such impact; for instance, if the impact is not visible to beneficiaries in the case of the prevention of negative outcomes (Jayne et al., 2019). Secondly, expert interviews opined that anticipated social amenities outcomes for human populations and communities stemmed from the transformation of production systems as promised by such projects; which directly affects the income of beneficiaries. To them, change in income directly affects change in access to social facilities. To farmers, the production system of maize and rice has slightly improved in terms of technology applications such as the use of chemicals (herbicides, insecticides, etc) and tractor services whose cost is still relatively high for farmers. This high cost lowers the income of farmers, thus hindering access to social facilities as Stein &Kalina (2021) put it in the studies of African mega projects at a situated scale. In their study, the challenges of such projects are too costly and often shifted to farmers thereby reducing their income and access to social facilities. Lastly, experts also noted that the development of land purchase/sale markets is creating a new class of landless workers and a change in the social system. To them, this change is in some ways deracinating the traditional social fabric and creating new power structures as farmers sell their land informally to others, and become dependent on the local nonfarm economy for their livelihoods in rural areas. This expert's position reinforced Gyapong, (2020) contention that, access to social facilities is a function of rural income which is not guaranteed by large-scale agricultural projects. Some experts said.

'Access to social facilities are least in rural communities in addition to difficulties they face managing the social complexity of project acceptance and a lack of appropriate working conditions, threatening rural peoples' health and safety'.

The views of experts on inclusive skills and knowledge opportunities were more positive. Farmers who have participated in large-scale agricultural projects confirmed to have witnessed an improvement in their skill and knowledge level over the last 15 years. To them, they understood modern methods of agriculture and had begun to practice them, especially in maize and rice subsectors.

When Tambi (2019) compared the results of the three types of training, he observed that the magnitude of on-the-farm agricultural training is higher than others meaning that farm training is better in increasing agricultural production as compared to professional and workshop agricultural training. This implies that farming training seems to have created more impact on skills and knowledge than professional and workshop capacity-building forms. At least a few respondents indicated that skills and knowledge that have learned from mega projects allowed them to be creative and add value to the production.

I think large-scale projects have helped in the development of female's skills in the processing of especially agricultural products.

The integration and interactions among farmers and others in the community as a result of large-scale agricultural projects are connected to a lesser extent. Many respondents reported that kindness and helping behaviours became more common over the years in their communities, highlighting an old fashion of caring that was indispensable amongst many with no attribution to large-scale projects. Though sharing amongst community members has intensified, for example, members offering phones to make calls for those without phones, taking care of neighbour children while they are away, and offering cooked food to others in the community have been common in the last 15 years. Such sharing has no link to mega projects reported by some experts even though Doan and Oduro (2012) found large-scale agricultural projects to promote interactions among commodities value chains, especially those who are engaged in the lower section of the value chains. As one expert also puts it,

'People have become more attentive to each other in the community' and everyone is more caring of one another especially the less fortunate

4.2.2. Economic impact

The economic impact of large-scale project six variables emerged here, with a 64.224% variance which explains the expected economic impact (see Table 3). Access to employment opportunities (direct, indirect, and induced impact) is one of the most important criteria that donors and governments measure at the end of any megaproject (Dimitriou et al. 2015). Interviews with experts revealed that large-scale agricultural development projects usually create the best-pay jobs for the project management team and an insignificant number of jobs for local people; this is in line with the suggestion of Müller-Mahn et al. (2021) that mega-agricultural projects benefit the rich, at the expense of the poor. This is often irrespective of project promises to prioritise rural farmers especially those whose land had been expropriated. It is interesting to note how this perception switched from negative to positive between farmers and the project management team.

The negative perception of farmers is legitimate as only 3% of respondents agreed with employment creation through large-scale projects. This perception is supported by Gyapong, (2020) in his investigation of how and why large-scale agricultural land investments do not create long-term employment benefits in Ghana. Some respondents saw employment as their silver lining, and several acknowledged the government's appointments of staff of such projects to help during a difficult time for political elites and their relatives since recruitment may not be based on competence'. A statement repeated by experts interviewed is that;

'Employment opportunities of large scale projects are often seen more at the level of jobs created for management team than those created by the project's activities. Such opportunities for the management team goes sometimes beyond the plan period, as projects are always delayed'

The expert interviewed revealed that, those who work in the field are often bare feet and hands making them susceptible to infections and reptile attacks, while many harvesters are vulnerable to chronic chest and back pains. More to that, machine operators often carry out their work without licenses, and in most cases, machinery is without insurance. The reality according to experts interviewed is that, although many of these farm workers double as own-farmers or direct beneficiaries of large-scale projects, they invest less in optimal working materials required on farms in addition to less optimal occupational health and safety legislation and implementation instruments in that effect, thereby increasing risk at all levels.

'We are lucky to have a government in place that looks for partners to invest in large-scale projects that can help reduce importance so that we can produce more to benefit from market opportunities and generate more income. But we cannot yet benefit given the small scale in which we are still producing for our subsistence'.

Witte and Spit, (2019) opined that agricultural workers are characterized by a high rate of turnover, high labour mobility across tasks, seasonal layoffs, short-term casual contracts with no guaranteed progression, and casual workers. These workers have over the last 15 years diversified their livelihoods with other occupations as they are conscious of their insecurity and the lack of appropriate regulatory interventions according to experts interviewed. More than 80% of the farmers who were supposed to be job creators were observed to be engaged in what they considered equally important activities such as petty commodity trading, farming, and transport services. It was reported that many do these additional jobs are not inherently favourable to them but because of their need for extra income which cannot be generated from their main farming activities. At least 3% of respondents agreed that large-scale projects create jobs as shown in Table 3. The former contentions differ from scholars' discourse that mega projects improve the creation of better job opportunities at all levels (He et al., 2021; Abesha et al., 2022)

There are options for the community to generate income during the implementation of large-scale agricultural projects. Firstly, the presence of stakeholders in the project areas presents an opportunity for locals to sell their products in some cases; this has proved to be a success. Second local products are better known in the market and this increases sales and income, following

experts' interviews and supported by reports of donors (World Bank, 2023; IFAD, 2018). Surprisingly, despite the positive income-generation activities mentioned by experts interviewed, a minority of respondents (only about 4% as shown in Table 3) reported feeling positive about income-generation activities from such projects. This could be attributed to a limited number of stakeholders present in rural areas during the implementation of such projects that can buy a substantial volume of local products.

Though the production volume of rice and maize has increased over the last 15 years, in relative terms, experts reported that the increment is a result of an increase in surface area and not per unit area. This is supported by 1% of respondents who agreed and the increasing level of importation of maize and rice (see Table 3). MINFI, (2023) argued that over 300,000 tons of rice were imported in 2022 and 1600 tons of maize in the same year. This is a visible result of the low production level of the commodities supported in previous years. This result on import is contrary to the presumption of Harwood, (2020) that mega-agricultural projects lead to a reduction in import and low capital flight, improved living conditions of those living near such projects through possibilities for social development, economic opportunities, and enhancement of the welfare of communities.

Most of the emerging evidence suggested a complexity of issues regarding market access. While experts revealed less favourable market negotiations between small-scale farmers and large agribusinesses who import at subsidised prices and preferred import over more expensive local production, local farmers are forced to sell at extremely low prices, especially at the point of harvest. The evidence is contrary to donors' reports (World Bank, 2023; IFAD, 2018) that claimed there is improved market access for maize and rice as a result of large-scale projects. Numerous respondents said they realised that the price of produce sold through partners of a large-scale project is lower than the market price even though the product quality standard expected is high.

According to experts interviewed, marketing infrastructure like warehouses constructed and driers installed to improve market access are used to a lesser extent as only about one-third of their capacity is being used and some have been abandoned. The situation of market access infrastructures sometimes translated into revised production habits, increased frugality, and reduced interest in large-scale projects. A statement repeated by many respondents 'Only small projects that target the essentials is needed, not wasting money on projects that are prone to delay and high cost in the end'.

However, farmers commented on how they had improved market relationships, which for some was as simple as having more time and opportunity to connect with clients in the last 15 years (e.g., spending less time to market products). Some also reported closer relationships with clients that are far off in bigger cities for example a statement reported by many was that

'my relationship with a partner in Douala and Yaoundé has improved and we have more frequent interactions'. This has made farmers interact with far and near customers, usually, this would only happen via middle man as one expert argued during the interview.

Operating in a fast-changing and competitive market and physical distancing rules in force, innovation in communication became a major facilitator of market access and connections for example via online services such as WhatsApp, Facebook, etc as experts reported. One farmer explained 'I got to speak with customers out of the village daily describing my product characteristics and sent pictures and videos via social media. Another described joining 'a global online marketing group' to maintain market access and social interactions. Recent reports insisted that several farmers had developed relationships with potential customers in and out of their communities (Folefack et al., 2020; World Bank, 2023; IFAD, 2018). Some farmers said

'I have a phone but no internet connection, I do not use social media'; the cost of internet is too high and before you know the credit you had on your phone has disappeared' etc.

For such farmers, market access's silver lining remains unclear.

The large-scale agricultural projects prompted farmers to reflect on their current production activities and re-create aspects of their farms which led to accessing finance and other resources according to experts interviewed. Respondents reported that such a project makes one think about the future of his or her farm' and 'time to reflect and decide what extra activities can indeed lead to accessing finance and other resources from the project. Experts pointed out that farmers have access to their highest level of finance when they participate in large-scale projects. Such access to finance had been reported by Wysocki, (2011). They also recognised such project delays and this is in line with the argument of scholars that, project delays for over 20 months (Ball, 2016; Gyapong, 2020; Abesha, et al., 2022). While farmers agreed to have access to finance, they also contested that, large-scale agricultural projects are always delayed and do not follow an agricultural calendar. This previous and subsequent statement was reported by many respondents.

'I borrowed money and invested in the project and have no extra money to continue my farm activities because of the delay which led to an increased cost of the borrowed money.

Access to financial resources is key to agricultural development but when projects are delayed, in cases where loans are involved, the consequences are very bad as reported by experts during the interview and Müller-Mahn et al. (2021) in this investigation of how megaprojects lead to mega failures in Kenya. Some of the experts interviewed pointed out that, farmers who have borrowed money in the past are indebted to financial institutions due to their limited ability to repay loans which are often offered at a high rate of about 12% per year. They noted that project delays increase costs for farmers and reduce their loan credibility and only 1% of respondents agree that participating in large-scale projects improves access to finance. Some even said, financial institutions do not want to offer them credit again after they failed to repay loans on time.

We have a warehouse that was constructed from the project fund, it is not being used given limited extra management cash available and debt as a results loan and its interest'.

Experts contested that, the management of agricultural raw materials is often done on-site in less-than-desirable control environments with less-than-optimal management systems until the advent

of large-scale projects. Many farmers' groups have developed their capacities to manage the products of members by adding more value in drying and storage in warehouses in the case of maize, as well as processing and storage of rice. Value is added in quality attributes such as humidity content, grain size, and shapes as well as colour which often attracts better prices for farmers are qualities they learn thanks to large-scale projects even though this is confirmed by only about 5% of respondents. The expert's views on value addition to raw agricultural materials are in line with IFAD (2018) PADFA report that indicated value addition to rice and onions. In general, farmers considered the position of experts to be less realistic, warehouses and processing units constructed within the framework of maize and rice projects are less optimally used. Some cited drying units and warehouses for maize that have been abandoned and rice mills that have also been abandoned for three reasons (1) limited knowledge by management of their farming group leaders (2) debt from loans accumulating due to project delays, and (3) insufficient amount of raw materials. The observations of farmers were earlier reported by Ika, (2012) as a critical success factor for World Bank projects and recently by Müller-Mahn et al. (2021) in this investigation of Megaprojects—mega failures in Kenya. According to farmers, value addition carried out in rice and maize is mostly done by agribusinesses that are not located in their areas and they might not have benefited from large-scale agricultural projects as earlier suggested by Jayne *et al.* (2019) that medium-scale farms are better placed to drive agricultural transformation in sub-Saharan Africa.

5. Conclusion

Mega agricultural projects have created significant positive impacts in different countries around the world but for the case of Africa and Cameroon in particular. Due to the renewed interest in such projects, this study investigated their impacts, given the current slow rate of development of the agricultural sector in the country. Two cases each from World Bank and IFAD sponsored and completed megaprojects were used.Respondents identified a silver lining under two themes (social and economic). Socially, the silver lining was observed mainly in skills and knowledge improvement, while access to social services (electricity, health, water, schools), as well as integration and interactions amongst villagers, showed less visible impact. Silver linings in this dimension cannot be directly attributed to such projects, therefore the claim that large-scale agricultural projects led to social impact might be a faulty one. Under the economic domain silver lining was observed in access to employable opportunities, market, and finance as well as value added to raw materials except for important impact indications like, increase in income, production level,and decrease in cost of production where no impact was observed. Impact disruptions were linked to project design and delays that affected budgets, supply shortages, and efficiency. To create the desired impact, we recommend that, large-scale agricultural projects should proactively focus on impact-driven project components as well as reschedule activities to minimize delays, penalties, and cost overruns.

References

Abesha, N., Assefa, E., &Petrova, M. A. (2022). Large-scale agricultural investment in Ethiopia: Development, challenges, and policy responses. *Land Use Policy*, *117*, 106091.

Abylova, V., &Salykova, L. (2019). Critical success factors in project management: a comprehensive Review *Project Management World Journal*, 8, 1-13.

Ashkanani, S., &Franzoi, R. (2022). An overview of megaproject management systems. *Management Matters*, *19*(2), 129-148.

Balkyte, A. &Tvaronavičiene, M. (2010): Perception of competitiveness in the context of sustainable development: facets of "sustainable competitiveness*". Journal of Business Economics and Management,* 11(2). 341–365

Ball, A. (2016). The future of agriculture in Cameroon in the age of agricultural biotechnology. *Independent Study Project (ISP) Collection*. 2287. Available at: https://digitalcollections.sit.edu/isp_collection/2287. Accessed 21th August 2023

Bamberger, M., & Cheema, S. (1990). Case studies of project sustainability. *The World Bank. Washington, D. C.*

Bekele, F., & Bekele, I. (2017). Social and environmental impacts on agricultural development. In *Agricultural development and food security in developing nations* (pp. 21-56). IGI Global.

Brussel, M., Zuidgeest, M., Pfeffer, K., &Maarseveen, V. M. (2019). Access or accessibility? A critique of the urban transport SDG indicator. *ISPRS International Journal of Geo-Information*, 8(67).

Capka, J.R. 2004. Megaprojects—They are a different breed. *Public Roads*, *68*(1). *Available at*: http://www.fhwa.dot.gov/publications/publicroads/04jul/01.cfmAccessed on March 11, 2023.

Chamber of Agriculture, Livestock, Fisheries and Forests CAPEF. 2023. Summary tables of projects and programs available in MINEPIA and MINADER. *Available at:* https://capefcmr.cm/documents/REPERTOIRE%20PROJETS%20PRODIFIR%20ANGLAIS.pdf Accessed 21th august 2023

Chih, Y., Zwikael, O. 2015. Project benefit management: A conceptual framework of targetbenefit formulation. *International Journal of Project Management,* 33 (1)

Doan, P., &Oduro, C. Y. (2012). Patterns of population growth in peri-urban Accra, Ghana. *International Journal of Urban and Regional Research*, 36(6), 1306–1325.

Engström L. &Hajdu F. (2019) Conjuring 'Win-World' – Resilient Development Narratives in a Large-Scale Agro-Investment in Tanzania, *The Journal of Development Studies*, 55:6, 1201-1220

Erkul, M., Yitmen, I., &Çelik, T. (2016). Stakeholder engagement in mega transport infrastructure projects. *Procedia Engineering*, 161(1), 704–710

Flyvbjerg, B. (2014). "What You Should Know About Megaprojects and Why: An Overview". *Project Management Journal*. 45 (2): 6–19.

Folefack, A. J. J., Tchoua, L. V., &Muluh, G. A. (2020). Determinants of adoption of Agri-environmental practices by maize producers organised in cooperatives in the Centre region of Cameroon. *International Journal of Biological and Chemical Sciences*, 14(7), 2434-2451.

Gbetnkom, D., & Khan, S. A. (2020). Determinants of agricultural exports: *The case of Cameroon* (Doctoral dissertation, AERC

Gellert, P. And Lynch, B. (2003): Mega-projects as displacements. *International Social Science Journal*, 55.15–25.

Guyalo, A.K., Alemu, E.A. &Degaga, D.T. (2022). Impact of large-scale agricultural investments on the food security status of local community in Gambella region, Ethiopia. *Agric& Food Secur* **11**, 43

Gyapong, A. Y. (2020). How and why large scale agricultural land investments do not create long-term employment benefits: A critique of the 'state of labour regulations in Ghana. *Land Use Policy*, *95*, 104651.

Hamann, S., & Sutherland, C. (2015). Megaprojects and sustainability in Durban, South Africa: Convergent or divergent agendas? *Habitat International*, *45*, 205-212.

Harwood, R. R. (2020). A history of sustainable agriculture. In *Sustainable agricultural systems* (3-19). CRC Press.

He, Q., Xu, J., Wang, T., & Chan, A. P. (2021). Identifying the driving factors of a successful megaproject construction management: Findings from three Chinese cases. *Frontiers of Engineering Management*, *8*(1), 5-16.

Ika, L.A., A., Diallo, A. D. Thuillier (2012) Critical success factors for World Bank projects: An empirical investigation. *International Journal of Project Management*, 30(1), 105-116.

International Fund for Agricultural Development; IFAD (2010). President's Report – Commodity Value Chain Support Project Project: Commodity Value-Chain Development Support Project.*Available at:*https://www.ifad.org/en/web/operations/-/project/1100001439Accessed March 11th, 2023.

International Fund for Agricultural Development; IFAD (2018). PADFA - Rapport achèvement Rapport d'achèvement Rapport principal et appendices*Available at:* https://www.ifad.org/en/-/document/padfa-rapport-achevementAccessed on March11, 2023.

International Fund for Agricultural Development; IFAD. 2023. Cameroon project and programs. *Available at:* https://www.ifad.org/en/web/operations/w/country/cameroonAccessed on March 11, 2023.

Jayne, T. S., Muyanga, M., Wineman, A., Ghebru, H., Stevens, C., Stickler, M. ... & Nyange, D. (2019). Are medium-scale farms driving agricultural transformation in sub-Saharan Africa?. *Agricultural Economics*, *50*, 75-95.

Kennedy, L. (2015): The politics and changing paradigm of megaproject development in metropolitan cities. *Habitat International*, 45. 163–168

Khanani, R. S., Adugbila, E. J., Martinez, J. A., &Pfeffer, K. (2021). The impact of road infrastructure development projects on local communities in peri-urban areas: the case of Kisumu, Kenya and Accra, Ghana. *International journal of community well-being*, *4*(1), 33-53.

Kimengsi, J. N., Balgah, R. A., &Gwan, S. A. (2016). Enhancing community participation for rural Development in Central Ejagham of Cameroon: Challenges and Prospects. *Int. J. Community Dev*, *4*, 20-32.

Korytárová, J., Hromádka, V., &Federla, J. (2022). Impacts of Determining Economic Life of Large-Scale Infrastructure Projects on Their EconomicEffectiveness. *Frontiers in Built Environment*, *8*, 908300.

Krijnen, M. (2018). Gentrification and the creation and formation of rent gaps: opening up gentrification theory to global forces of urban change. City, 22(3), 437–446

Kwak, Y.H., Walewski, J., Sleeper, D., &Sadatsafavi, H. 2014a. What Can We Learn from The Hoover Dam: that Influenced Modern Project Management. *International Journal of Project Management*, *32*(2), 256–264.

Li, H.; Chen, Z.; Wong, C.T.; Love, P.E. (2002): A quantitative approach to construction pollution control based on resource levelling. *Construction innovation*, 2(2), 71–81.

Manno, J. P. (2011). Looking for a silver lining: the possible positives of declining energy return on investment (EROI). *Sustainability*, *3*(11), 2071-2079.

Merrow E.W. (2011) Industrial megaprojects: concepts, strategies, and practices for success, Wiley, Chichester, UK.

Ministry of agriculture and rural development, MINADER (2022). Statistical yearbook of the ministry of agriculture and Rural Development AGRISTAT NO. 18: Available at:https://www.minader.cm/wpcontent/uploads/2023/11/AGRISTAT_NEW_18_ANG.pdf Accessed 21th august 2023

Ministry of finance MINFI (2023). Report on the nation's economic, social, and financial situation and prospects. 2022 financial year. Available at: https://minfi.gov.cm/wp-content/uploads/2023/03/REF_2022_ENG.pdf Accessed 21th august 2023

Mosley, J., and E.E. Watson. 2016. Frontier transformations: development visions, spaces and processes in Northern Kenya and Southern Ethiopia. *Journal of Eastern African Studies* 10 (3): 452–475.

Müller-Mahn, D., Mkutu, K., &Kioko, E. (2021). Megaprojects—mega failures? The politics of aspiration and the transformation of rural Kenya. *The European Journal of Development Research*, *33*, 1069-1090.

Patanakul, P. 2014. Managing large-scale IS/IT projects in the public sector: Problems and causes leading to poor performance," *Journal of High Technology Management Research*,25 (1), pp. 21-35

Porter, G. (2011). 'I think a woman who travels a lot is befriending other men and that's why she travels':mobility constraints and their implications for rural women and girls in sub-Saharan Africa. Gender,Place and Culture, 18(1), 65–81

Samset, K. (2013): Strategic and tactical performance of mega-projects – between successful failures and inefficient successes. International Handbook on Mega-Projects, Edward Elgar Publishing, pp.11–33.

Shenhar, A.J. &Dvir, D. 2007. Reinventing project management: The Diamond approach to successful growth and innovation. Boston: Harvard Business School Press

Slevin, D. P., & Pinto, J. K. (1987). Balancing strategy and tactics in the project implementation. *Sloan Management Review*, *29*(1), 33-41.

Steg, L. & Gifford, R. (2005): Sustainable transportation and quality of life. *Journal of transport geography*, 13(1), 59–69

Stein, S., &Kalina, M. (2021). Becoming an Agricultural Growth Corridor. In *Contemporary Megaprojects: Organization, Vision, and Resistance in the 21st Century* (pp. 83-100). Berghahn.

Sutherland, C.; Sim, V.; Scott, D. (2015): Contested Discourses of A Mixed-Use Megaproject: Cornubia, Durban, Habitat International, 45, pp.185–195.

Tambi, M. D. (2019). Agricultural training and its impact on food crop production in Cameroon. Journal of Socioeconomics and Development, 2(1), 1-11.

Witte, D. P., & Spit, T. (2019). Megaprojects–An anatomy of perception: Local people's perceptions of megaprojects: The case of Suramadu, Indonesia. *disP-The Planning Review*, *55*(2), 63-77.

World Bank, 2023. Agricultural projects matching search. *Available at:* https://projects.worldbank.org/en/projects-operations/projects-list?os=0Accessed on March11, 2023.

Wysocki, R. K. (2011). Effective project management: traditional, agile, extreme. John Wiley & Sons

Zwikael, O., &Smyrk, J. 2012. A general framework for gauging the performance of initiatives to enhance organizational value. *British Journal of Management*, *23*, 6–22