

Article

Addressing the Problem of Poverty through an International Cooperation Project: The Case Study of Agriculture Development by JICA in Cameroon

Agho Oliver Bamenju ^{*}, Xiaoyue Liu ^{}, Jeongsoo Yu ^{*} ^{} and Kazuaki Okubo

Graduate School of International Cultural Studies, Tohoku University, 41 kawauchi, Aoba-ku, Sendai 9808576, Japan

^{*} Correspondence: agho.oliver.bamenju.t3@dc.tohoku.ac.jp (A.O.B.); jeongsoo.yu.d7@tohoku.ac.jp (J.Y.)

Abstract: In this era of globalization, with social problems extending across social and geographical boundaries, partnerships between governments and international organizations are key to achieving the Sustainable Development Goals (SDGs). Agriculture is essential to reducing poverty in Cameroon. Since 2002, the Japan International Cooperation Agency (JICA) has contributed to agricultural development through various projects in Cameroon. However, research has not been conducted to determine the contributions of agricultural development to poverty reduction. The aim of this study is to outline current agricultural problems and international cooperation projects in Cameroon. A social inquiry involving the collection of qualitative and quantitative data was conducted to assess whether agricultural projects have contributed to increasing income and alleviating other multidimensional indicators of poverty amongst the beneficiaries. In this paper, we provide useful recommendations with respect to solving the problem of poverty and achieving the SDGs. The analysis revealed that agriculture projects have significantly contributed to an increase in income, wellbeing and standard of living of the project beneficiaries. African countries, such as Cameroon, need to address poverty by improving the agricultural sector because these nations cannot currently maintain a stable crop production. International cooperation in the agricultural sector can help to increase crop yields, incomes and quality of life.

Keywords: poverty reduction; international cooperation; agriculture development; SDGs; Cameroon



Citation: Bamenju, A.O.; Liu, X.; Yu, J.; Okubo, K. Addressing the Problem of Poverty through an International Cooperation Project: The Case Study of Agriculture Development by JICA in Cameroon. *Earth* **2022**, *3*, 1185–1206. <https://doi.org/10.3390/earth3040068>

Academic Editor: Samuel Asumadu-Sarkodie

Received: 16 September 2022

Accepted: 3 November 2022

Published: 11 November 2022

Publisher's Note: MDPI stays neutral with regard to jurisdictional claims in published maps and institutional affiliations.



Copyright: © 2022 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

1. Introduction

Food insecurity, poverty and migration emergencies are the most pressing issues faced by modern societies [1]. Given the high poverty rates in sub-Saharan Africa, eradicating extreme poverty remains a key challenge, considering that the number of people living below the USD 1.25 poverty line has not been significantly reduced compared to other regions [2]. The goal of international development agencies operating in developing countries is to contribute knowledge and financial resources to help these countries to end extreme poverty [3,4]. Therefore, to achieve the Sustainable Development Goals (SDGs) as per the slogan of leaving no one behind, international cooperation is vital [5]. Much of the international discussion with respect to the formulation of the SDGs has naturally and rightly concentrated on the pressing development needs of developing countries and the responsibilities of the developed world to assist in the development process of the developing world, such as goals 1 and 2 (“No Poverty” and “Zero Hunger”) [6,7].

Agriculture is the main occupation in Cameroon, employing more than 60% of the population and accounting for more than 40% to the country's GDP. Therefore, agriculture development is key to achieving SDGs [8–10]. However, in Cameroon, agriculture faces with many challenges. World Food Program food security experts concluded that, without renewed efforts to scale up the domestic availability of food beyond the present levels,

rural Cameroonians may continue to suffer from deficient access to adequate food. The report shows that 40% of Cameroon's population lives below the poverty line [8].

Japan, a member of the G7 Development Assistance Committee (DAC) and the Organization for Economic Co-operation and Development (OECD), has had a long history of aid to Africa [9]. Japan has been a key international development actor, supporting low- and middle-income countries living below the poverty line to come out of poverty and attain sustainable development [10]. Considerable investments through international cooperation projects have been made by Japan in Cameroon in the fields of agriculture, livestock, fisheries, education, and infrastructure [11]. Japan has made significant investments in the agricultural and other sectors in Cameroon through the Japan International Cooperation Agency (JICA), with the aim of supporting the government of Cameroon to end poverty and contribute to the attainment of sustainable development.

Despite these laudable investments, research has not been conducted to determine the contributions of these projects to poverty reduction in the international cooperation project area. Anecdotal evidence shows that JICA projects in Cameroon have had a significant positive impact on the beneficiaries, exceeding the originally intended objectives, although research is not available to confirm this assertion. Although external evaluations are undertaken by JICA, these evaluations mostly focus on determining whether the originally stated objectives of the project were achieved [12], without considerable focus on additional outcomes that have resulted from the project. It was therefore important for this study to be conducted to determine the contributions of JICA's agricultural projects to poverty reduction in Cameroon. The importance of the multidimensional poverty index (MPI) is increasing, as reflected in the SDGs [13–15]. MPI is a resource adopted by the United Nations in 2010 which measures poverty in 3 broad dimensions of health, Education and standard of living. It covers over 100 developing countries and complements the traditional measure of poverty which focused mainly on income poverty [16].

The aim of this study is to determine such additional outcomes, which are known to the population of Cameroon, but that have not been confirmed by research. These additional outcomes were researched with respect to the MPI. This research outlines current agricultural problems and international cooperation projects in Cameroon. Moreover, this case study provides some useful recommendations with respect to solving the problem of poverty and achieving the SDGs.

2. Literature Review

The concept of Sustainable Development (SD) had its origin in the context of environmental issues and was first officially used in the World Charter for Nature [17,18]. From there, it became used in other domains, and the social pillar on poverty reduction was emphasized [19–21]. SDGs are therefore a universal set of goals, targets and indicators containing 17 goals, 169 targets and 330 indicators. This research looks at poverty reduction in the light of these indicators as it pertains to the international cooperation projects of JICA in Cameroon, but first this section will look at other attempts to reduce poverty in Cameroon, beginning with the concept that roads lead to poverty reduction.

Najman et al. investigated the impact of roads on poverty reduction in Cameroon [22]. Although many infrastructural investments are made in Africa with the belief that it will lead to poverty reduction and income generation, the results revealed that investment in tarred roads in Africa has a lower impact than expected. This study clearly showed that road development does not directly contribute to poverty reduction, but fails to bring out the other factors that can contribute to poverty reduction. Tchoundjeu et al. described the steps used to implement a participatory approach to tree domestication in Cameroon and the lessons learned. The study found that participatory tree domestication could help the local population to improve food and nutritional security as well as generate income [23]. However, the research scope was not large enough for scalability and, therefore, partnerships with other development agencies are required to achieve widespread poverty reduction. Fabien conducted a field survey among 250 households in the West region of

Cameroon and considered the breadbasket of Cameroon, revealing that there are many challenges faced in the agricultural sector. They range from the lack of capital to climate change. Other challenges include low levels of input, pressure on natural resources, low levels of government subsidies, poor farming techniques, pests and disease attacks, amongst others, specifically for rice production [24]. Hence, poverty reduction in Cameroon, particularly through agriculture, still faces formidable obstacles.

Scoones et al. introduced a Special Section on Chinese and Brazilian engagements in African agriculture [25]. Their research showed that China and Brazil have joined the race of investing in new technologies in Africa, especially in the agricultural sector. They are considered to be better investors compared to other donors because of their history of solidarity and struggle against colonialism and slavery, similar to that of Africa. However, no mention is made of how the Chinese and Brazilian presence and investments in the agricultural sector have contributed to reducing poverty in any form. Wen et al. analyzed Chinese and Japanese development assistance strategies in Africa to know if the relationship between these two new rising powers is that of competition or collaboration [26]. It can be said that Africa has received much development assistance from the international community in the past 80 years. Japan, as with China, is seen to make vast investments in Africa across different sectors. China is considered as more likely to compete with Japan and other donors for Africa as it expects a higher return on its investments in Africa, while Japan may choose to cooperate with China, especially when considering that the cost of failure on competition is high. Vast investments made by both countries in Africa have been highlighted. However, no analysis has been conducted on the impact of such investments on Africans. Africa is considered a silent player with nothing to contribute to its fate as donors and investors make decisions as to whether compete or collaborate when deciding Africa's fate.

Regarding Japanese official development assistance (ODA), since the 1970s, there have been debates as to whether ODA contributes to growth. Research conducted in 117 countries between 1980 and 2018 on Japan's ODA found a statistically significant and positive association between Japan's ODA and industrial development [27]. The study mostly focused on economic infrastructure and GDP without reference to how this growth has contributed to poverty reduction. The authors themselves acknowledge this limitation and recommend further research to see if investments in social aspects, such as health and education, have led to economic growth. On the other hand, an evaluation of a JICA-funded project has been made, aiming to increase rice yields for rural and urban populations of Cameroon [28]. The midterm evaluation found that high-quality seeds had been produced. As the project was found to be sustainable beyond donor funding, it provided a good basis to find out the impacts beyond donor funding. However, the evaluation carried out was limited because it did not consider poverty reduction indicators. It mostly focused on output and financial indicators.

All previous research mostly concentrated on the impact of development projects on reducing income poverty and contributing to other macroeconomic aggregates, such as GDP and industrial development, without consideration of the multidimensional aspects of poverty. Therefore, this study set the following main research question: what additional contributions to poverty reduction based on the MPI did the international cooperation agricultural projects funded by JICA in Cameroon offer to the beneficiaries?

3. Methodology

3.1. The Concept of Poverty Reduction

The DAC guidelines on poverty reduction emphasize partnerships for reducing poverty, especially in low-income countries [29]. Poverty is defined as the inability of people to meet economic, social, and other standards of wellbeing. This definition aligns with that of the World Bank, which defines poverty as an unacceptable human deprivation of economic opportunities, education, health, and nutrition in addition to the lack of empowerment and security [30]. The key components across several definitions of poverty are

economic, health and social wellbeing. Alkire and Suppa summarized the dimensions of poverty into health, education and living standards, included across 7 SDGs (goals 1, 2, 3, 4, 6, and 7) [13]. In 2010, the United Nations in the World Summit for Social Development adopted the MPI and regarded its manifestation as the lack of income and resources to ensure sustainability.

Figure 1 shows that poverty can be measured according to 3 dimensions: health, education, and living standards. Each of these dimensions has specific indicators that should be considered when making judgments about poverty. The hypothesis of this research, as depicted in Figure 1, is that the agricultural projects funded by JICA and implemented in Cameroon have contributed to poverty reduction across MPI indicators and several indicators including seven SDGs [16]. Poverty reduction, contrary to the narrow view of only income poverty, includes health, education, and living standards [31].

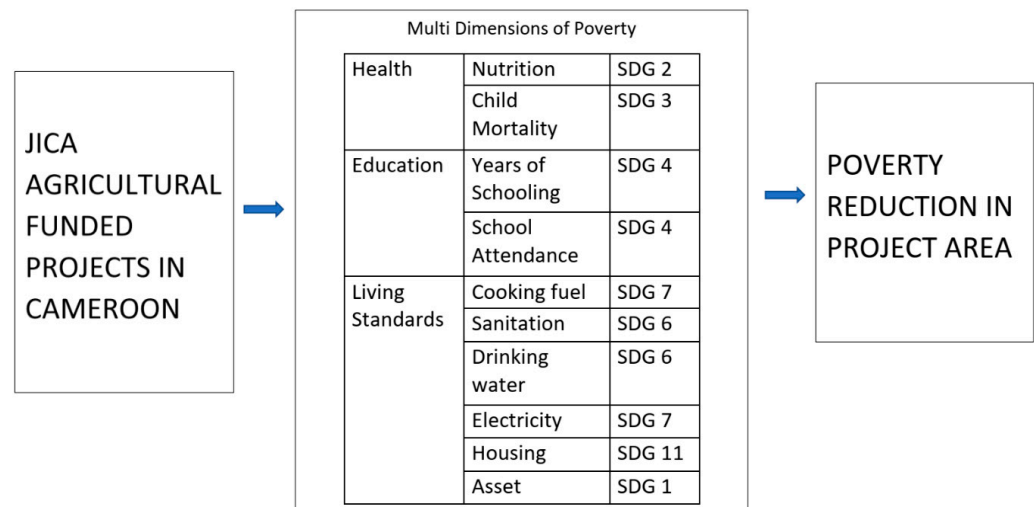


Figure 1. Contribution of JICA’s agricultural projects to multi-dimensional aspects of poverty reduction.

3.2. Goal-Free Evaluation

This study used the Goal-Free Evaluation Method (GFEM) to assess poverty reduction according to the dimensions and indicators. Goal-Free Evaluation (GFE) is an evaluation in which the evaluator conducts the evaluation without referring or without having particular knowledge of the stated or original goals and objectives of the project. GFE serves as a counter to evaluations solely determined by goal achievements. The GFEM can help us to find significant effects that were not originally stated in the goal. This shows that focusing only on the goals of a project when undertaking evaluations is a limiting approach.

This methodology has been used by consumer unions for more than 75 years. It has also been used in program evaluations for more than 40 years. GFEM has been used extensively since the 1970s in the field of education as well as agriculture, disaster relief response, and to evaluate chronic unemployment and homelessness [32]. GFE is methodologically neutral, which means it can be used or adapted for use with several other evaluation approaches, models, and methods as long as the other approaches are not goal-orientated. It can be used with quantitative and qualitative data collection methodologies, which are the reasons why this research adopted a combination of these two data collection methodologies in collecting and analyzing data. As mentioned before, the design considered for this study was the GFE. This design was considered because it enabled the researcher not to only limit findings around the original goals and objectives of the project but provided an opportunity to evaluate the projects based on the MPI indicators.

There are only two methodological requirements in GFE: (1) the evaluator is external from and independent of the program and its upstream stakeholders and (2) someone is appointed as a goal screener that is an impartial party who intervenes between the evaluator and program staff to eliminate goal-oriented communications and documents before they

reach the goal-free evaluator. The GFE is allowed to observe and review documents and actions related to the programs, actions, and activities in order to understand what the program does and what it serves, which the evaluator used to define the outcome measures under study.

This study first provided evaluations of international cooperation projects beginning with Japan's funded projects in Cameroon. The analysis was undertaken to determine if the presence of international cooperation agencies can help Africa to reduce poverty. Then, this study designed a social inquiry of agriculture development projects (questionnaire and interview) to further achieve the quantitative and qualitative analysis.

3.3. Case Study Area

In Cameroon, it is estimated that 3.9 million people are food insecure, majority in rural areas [33]. The region with highest percentage of food insecurity is the Far North region, Northwest (18.1%) and the West [34]. JICA has invested considerable support the government of Cameroon to undertake major projects with a particular focus on the agricultural domain. JICA's investments is in the rural areas of Cameroon where there are poor rural farmers who had no income from farming at the beginning or whose income were less than \$1 before the investment. Figure 2 shows JICA's major projects in Cameroon [35]. Currently, there are 10 funded projects in Cameroon, 6 of which are agriculturally inclined. To sufficiently capture the variables of interest, this research used the GFE approach focusing on projects whose life cycles were closed. This research presents an analysis of the two rice production projects (from June 2016 to May 2022) and identified the existing differences that this research intends to fill. The two projects were formulated from the background that rice, a staple food both for the rural and urban populations of Cameroon is rapidly increasing in demand, the increase demand being met by importation [36].

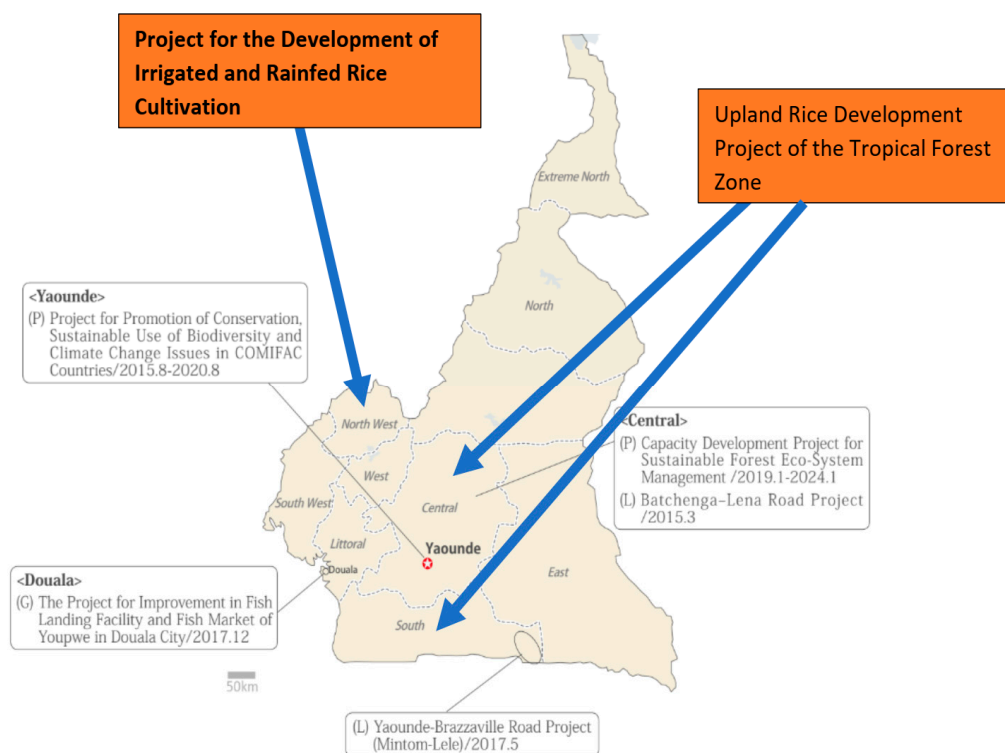


Figure 2. Map of Cameroon showing JICA projects.

- (1) The Project for the Development of Rainfed Rice; This project implemented to the tune of 6.6 million JPY. Approximately 13,000 households have been involved in this project.

- (2) Upland Rice Development Project of the Tropical Forest Zone. This project implemented to the tune of 3.2 million JPY. Approximately 10,000 households have been involved in this project. These projects are highlighted in orange on the map.

3.4. Methods

3.4.1. Sampling and Data Collection

The study population was farmers at the project sites who benefited from either the Irrigated and Rainfed Rice Project (IRRP) or the Upland Rice Development Project (URDP). We used a descriptive cross-sectional study. Both qualitative and quantitative techniques were used to collect data. The quantitative techniques used were questionnaires (Appendix A), while the qualitative techniques included interviews, observation, and focus group discussions. Questionnaires captured, in quantitative terms, the situation before and the contributions that beneficiaries of these two projects had for the project to be in line with the MPI indicators. Interviews (Appendix B) were conducted to capture in-depth information with regard to the contributions (or lack of) to the beneficiaries.

A total of 305 beneficiaries took part in the study: 148 for the IRRP and 157 for the URDP. This number was considered based on a calculation from a sample size formula that presented the minimum number of an unknown population had to be 138 [37]. that is,

$$N = Z^2 \frac{p(1-p)}{e^2} \quad (1)$$

where

N : minimum number of research respondents;

Z : value reflecting the desired level of confidence;

e : error that can be tolerated;

p : prevalence of the problem.

When we consider a 95% confidence level (1.96) and assume a prevalence of 90% of farmers within the project sites, according to Formula (1), we can obtain $N = 1.96^2 \times [0.9 \times (1-0.9)]/0.05^2 = 138$ respondents (minimum). For the qualitative data, a total of 20 respondents in each project site were interviewed. This number was chosen based on studies by Charmaz (2006), Green and Thorogood (2009), Creswell (1998), and Morse (1994) [34–38].

A census approach was used to select respondents to answer the questionnaires. That is, at the time of arrival at the project site, all the beneficiaries present at that time were presented with questionnaires to ensure that the required number was obtained. For the interviews and focused group discussions, experienced farmers from both project sites were interviewed to obtain more adept information on how the projects contributed to reducing poverty in their households. Only farmers who solely depend on the project as a source of livelihood for their families were considered to participate. This was to enable the accuracy of information to avoid other confounding factors that may be present as contributors to poverty and hunger reduction.

Data were collected from 20 March to 5 May 2022, from the two separate projects funded by JICA in Cameroon. A total of 148 farmers from the IRRP based in the Northwest region in the Upper Noun Valley Development Authority (UNVDA) Ndop production basin responded to the questionnaire, while 157 responded from the URDP of the tropical forest zone based in the Center and South regions. Questionnaires, focus group discussion guides, and interview guides were used to collect data.

3.4.2. Study Instruments

The questionnaires administered were divided into three sections: A, B, and C. Section A captured the biographical data relating to gender, age, marital status, and size of the respondents' households. Section B captured data related to the MPI indicators to answer the research questions, while Section C captured information regarding other additional contributions the project may have contributed to the beneficiaries. A pre-testing of

10 questionnaires was performed. This enables errors to be identified and corrections made. For the upland rice development project, since the respondents were French-speaking, the questionnaire was translated to French; pretested and errors were corrected before the final copies were administered. For example, one of the errors identified during the pretesting of the French questionnaires was that some of the words were not completely translated, while one word still had the English appellation. This was corrected before the actual data collection.

Structured interviews were administered to 20 farmers at each of the project sites. The interviews were used to support the findings from the quantitative analysis. Direct quotes from the participants were used to substantiate the quantitative findings. The observation was used to see the actual contributions in the field. In some places, it could visibly be seen how the proceeds from the sales of rice enabled farmers to construct new houses, built community halls, and obtained additional assets, amongst others.

4. Results

4.1. Evaluations of JICA Implemented Projects in the Case Study Area

Japan started to seek ties with Africa in the 1970s, in search of natural resource extractions. Its Development Assistance increased from USD 5 million in 1972 to USD 900 million by 1991 [39]. Japan's investment has been seen to focus on building schools, building the capacity of human resources in various fields, supporting good governance initiatives and contributing to poverty reduction.

IRRP implementation was formulated considering that rice, a staple food both for the rural and urban populations of Cameroon, is rapidly increasing in demand, and the increasing demand is met by importation. This importance is recognized by the Cameroon government in its strategic agricultural document (the Growth and Employment Strategy Paper). The goal of the project is that the rate of rice self-sufficiency is improved in Cameroon. The overall objective is to ensure that the sales and consumption of irrigated and upland rice are increased in the project areas through the production of high-quality seeds, an increasing number of farmers cultivating and consuming irrigated and upland rice, improved cultivation techniques, and improved harvesting techniques. A midterm evaluation of this project was carried out in 2020, using five key criteria: Relevance, Effectiveness, Efficiency, Impact, and Sustainability. The evaluation found that the high-quality seeds produced were well received even by farmers out of the project areas; the adapted technology meets both the technical needs of the Ministry of Agriculture and Rural Development in Cameroon and UNVDA. In addition, the evaluation found the project is supported by the government of Cameroon, indicating sustainability [28,40].

URDP implemented was developed based on the background that agriculture is a key industry in Cameroon. Despite the increasing demand for rice consumption in both rural and urban areas, production remained below the expected levels. To remedy this situation and help Cameroon to achieve food security, Japan, through JICA, included Cameroon in its Coalition for African Rice Development (CARD). At the end of the project, a joint evaluation team made up of JICA and Cameroon team members carried out an evaluation based on five criteria. Regarding relevance, it was found that the project was relevant to the policy and needs of the Cameroon government and population. Regarding effectiveness, it was found that effectiveness was relatively high, as 60% of farmers who received seeds were able to reap double. Efficiency, impact, and sustainability were also rated by the evaluation team as relatively high concerning the set project indicators [12,41].

Cameroon sees Japan as a good investor because, from observations, their projects have been seen to contribute positively to the life of Cameroonians, much more than the original objectives. Therefore, this research then used the questionnaire in Annex 1 and generated evidence that demonstrate the additional contributions of JICA agricultural projects that are not yet reflected in research. The questionnaire was designed to capture the contributions of JICA agricultural projects to poverty reduction, in line with the indicators of the MPI. The next section presents the analyzed information from the data collected.

The results from the two separate projects are analyzed and presented separately, and then comparisons and conclusions are drawn. It presents the background characteristics of the respondents, and then the results are presented following the research questions.

4.2. The Results of Social Inquiry of Agriculture Development Project

4.2.1. Respondent Characteristics

Respondent characteristics are shown in Table 1. For IRRP, the highest number of respondents (35%) were in the age group of 40–49 years. Females (52%) were slightly more than the males. Similar to IRRP, the highest number of beneficiaries were in the age group of 40–49 years for URDP. However, there were more males (68%) in URDP compared to IRRP. The findings on the age group in this study align with a study by the International Monetary Fund, which found that, in Japan, workers within the 40-to-49-year age group were the most productive [42]. The age group of 40–49 years is therefore an important agriculturally productive age group. Measures need to be put in place to protect the health and wellbeing of this age group in order to maximize productivity levels.

Table 1. Respondent characteristics.

		IRRP		URDP	
		N	%	N	%
Age	10–19 y	0	0	7	4%
	20–29 y	4	3%	19	12%
	30–39 y	33	22%	36	23%
	40–49 y	52	35%	43	27%
	50–59 y	38	26%	35	22%
	60–69 y	17	12%	12	8%
Gender	70 and over	3	2%	5	3%
	Male	71	48%	106	68%
	Female	76	52%	51	32%
Marital Status	Single	16	11%	39	25%
	Cohabited	0	0	14	9%
	Married	113	76%	97	62%
	Divorced	2	1%	2	1%
Household Size	Widowed	17	11%	5	3%
	1–3	6	4%	23	15%
	4–10	97	66%	97	65%
	10 and over	43	29%	29	19%
Years Involved in the JICA Project	Less than 1 year	2	1%	40	25%
	1–2 y	13	9%	50	32%
	3–4 y	21	14%	25	16%
	4–5 y	51	34%	14	9%
	Above 5 years	61	41%	28	18%

The majority of the respondents were married (76% in IRRP and 62% in URDP), while only 1% was divorced. The relatively high number of widows in the IRRP in the Northwest could be because of the anglophone crises in which many people, especially women, lost their spouses. However, further research is needed to confirm this assertion.

The household size ranged from 1 person in a house to up to 32 persons. The household sizes from 4 to 10 were of the highest category. The average household size in Cameroon was estimated at five persons [43]. However, as with other African countries, in Cameroon, many people understand that a household not just the nuclear family but also includes extended family members. Even if not living in the same house, some people will declare numbers as high as 32 persons.

The majority of the respondents for IRRP have been involved in the project for 5 years and above (41%), followed by those who have been involved for 4 to 5 years (34%). This shows that the majority of the respondents benefited for a longer duration, enough to testify as to whether they have reaped benefits from the project. On the other hand, the majority of beneficiaries of URDP have been involved in the project for less than two years (57%).

4.2.2. Contribution to the Reduction in Income Poverty

In order to know to what extent JICA agricultural projects contributed to farmers living above the national and international poverty lines, it was important to know if farmers experienced additional income because of the project. The answers from the questionnaires show that all the respondents (99%) of IRRP affirmed that they experienced additional income because of the project, except for one respondent. For URDP, 68% indicated to have experienced additional income, whereas 32% had not. The reason is considered to be that the majority of the beneficiaries of the upland rice had been involved in the project for less than two years.

On the other hand, respondents were further asked to rate their income before joining the project. The majority (61.2%) of IRRP said their income was poor. For URDP, 44% said their income before the project was acceptable, 28% said their income was good; 15% declared it to be very good, while 13% rated it poor and very poor. It can therefore be seen that, while beneficiaries of IRRP did not have high income levels before the project, those of URDP had appreciable income levels before joining the project. Looking at the estimated yearly income before the project (Table 2) for IRRP, 23% of the beneficiaries had experienced no income and 50% indicated to having less than USD 400/year, which is less than USD 1 per day. For the URDP, only 9% indicated to have had no income at the start of the project, while 33% had less than USD 400/year. A total of 33% and 23% had less than USD 400/year and between USD 400 and USD 799/year.

Table 2. Yearly income from farming before projects.

	IRRP		URDP	
	N	%	N	%
No profit	34	23%	13	9%
Less than USD 400	73	50%	50	33%
USD 400–799	27	18%	34	23%
USD 800–1199	9	6%	17	11%
USD 1200–1599	2	1%	17	11%
USD 1600–1999	0	0	12	8%
USD 2000 and above	2	1%	8	5%

Table 3 shows the additional yearly income from projects. For IRRP, 64% of the beneficiaries experienced additional income ranging from USD 400 (USD 1.1/day) to USD 2000 (USD 5.5/day) and above. For the URDP, 26% had experienced additional income ranging from USD 400/year to USD 2000 and above. Before the project, up to 23% of the respondents of the irrigated and rainfed rice did not have any profit from farming. However, after farming, 99% of them attested to have received additional income. Although 35% rated their additional income as less than USD 400 per year, which constitutes less than USD 1/per day, it can be seen that 64% of the respondents have had additional income above the national poverty line (USD 1/day) and the international poverty line (USD 1.9/day) [44,45].

Table 3. Additional yearly income from projects.

	IRRP		URDP	
	N	%	N	%
No profit	4	3%	59	38%
Less than USD 400	51	34%	57	36%
USD 400–799	46	31%	22	14%
USD 800–1199	36	24%	14	9%
USD 1200–1599	5	3%	2	1%
USD 1600–1999	0	0	0	0
USD 2000 and above	6	4%	3	2%

4.2.3. Contributions to Poverty Reduction Based on Other MPI

With the understanding that, according to the global MPI, poverty is not only measured in economic terms but considering other indicators such as an improved standard of living and improved health and wellbeing, the following indicators were also checked during the study. It should be noted that, in Cameroon, community members usually take the first lead in initiating and galvanizing their own resources in the quest to improve their standard of living [46]. When income levels in communities increase, community members therefore take the lead in engaging in development actions, such as bringing electricity, digging roads, opening schools, health facilities, and bringing portable water, into their neighborhoods. However, first, everything being equal, increased income should increase the standard of living for the individual community members and their families before extending to the community.

- Meals

One of the key manifestations of poverty in Cameroon is the inability to eat three square meals a day. According to the MPI, one of the indicators for poverty reduction is being undernourished [16]. It follows that, for a household to be living above the poverty line, members of the household should have adequate food to eat. As shown in Figure 3, before IRRP, up to 89% of the respondents were sometimes not able to eat three square meals, while after the project only 17% said they were not able to eat three square meals. On the other hand, before URDP, almost all of the respondents were not able to eat three square meals a day, but after the project, up to 93% could eat three square meals a day after benefiting from the project. Thus, it can be said that both JICA projects contributed to achieving the multi-dimension poverty indicator of “improved nutrition” and the SDG 2 of “zero hunger” in the project areas. This was further confirmed in the interviews conducted where a respondent said, “*Before the project, we used to go and buy rice for the family to be able to eat, but now, we get rice from our own farms and eat and also have extra income to buy other foodstuffs in addition to the rice*”.

- Electricity

In Cameroon, only 63% of Cameroonians have access to electricity, but access varies greatly between urban and rural areas (24% in rural areas and 93% in urban areas) [47]. JICA projects are mostly implemented in rural areas where there are higher levels of poverty. Although 63% of the respondents of the IRRP did not have electricity before the project, as a result of the project, 78% attested to having electricity. For URDP, the percentage that acquired electricity because of the project was 21%. The additional benefits stated by the respondents during interviews showed that they were able to acquire alternative and environmentally friendly lighting systems, such as solar panel energy, thanks to the project. Below is an excerpt from an interview with a respondent, “*With the small money I made from rice farming thanks to the JICA project, my wife and I raised money last year when we sold our rice and bought solar panels which we use today as our source of electricity. With this solar we can charge our phones, we have 3bulbs in the house here and even our television. I can say that we are out of the dark ages thanks to the introduction of this project*”.

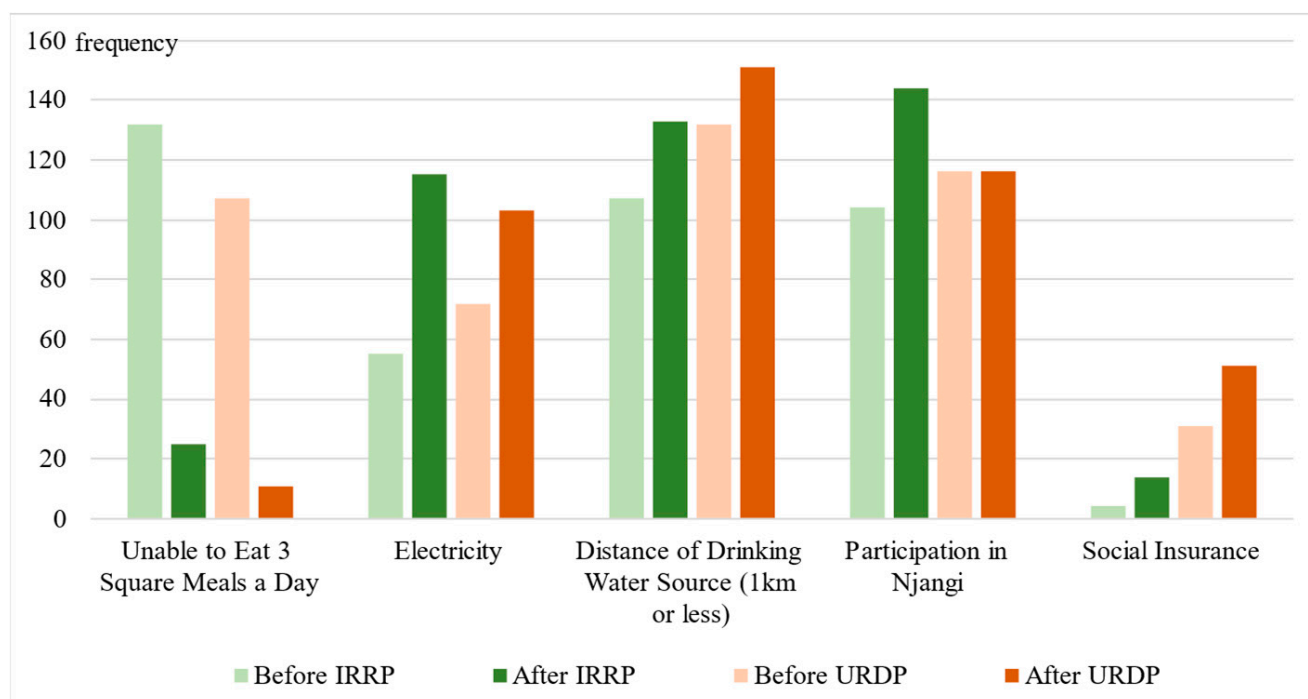


Figure 3. MPI display before and after JICA projects (living standards and social protection schemes).

- Drinking water

The MPI asserts that a household is poor if the household's source of good drinking water is 30 min or longer from their home and back [48]. The reverse therefore holds that, when people are moving out of poverty, they will make efforts to lessen their distance from obtaining drinking water. The results show that the projects contributed to enabling beneficiaries to acquire sources of drinkable water within and less than 1 km from their homes compared to before. This was also confirmed by the interviews conducted, where a beneficiary declared, *"Part of the money I made from rice production helped my household to put water where even other villagers come and carry. Now we drink good water as compared to before where we moved very long distances before getting drinking water"*.

- Njangi

Njangi, also referred to as Table Banking, is a form of resource pooling strategy in Cameroon where members who share a common interest, meet on regular basis to contribute, and make offerings to a benefiting member on a rotating basis at the end of each sitting at no interest rate. This enables the benefiting member to have access to an increased number of resources at a given point in time to invest in issues of interest [49]. This is a good social protection strategy for members in the rural communities in Cameroon where there are very limited banking and loan possibilities at very high interest rates. When people experience increased income, they tend to belong to many "Njangis". The results for the irrigated and rainfed rice show that many more farmers joined a Njangis and others added their Njangi groups as a result of income from the project. For the upland rice, additional beneficiaries did not join, probably because the majority of them had been involved for less than 2 years compared to beneficiaries of the irrigated rice, where the majority had been involved for 4 years and above. Referring to how Njangi has been a beneficiary, a respondent stated, *"As soon as my rice farm started generating income and food, the money I used to buy rice for the family was saved now. Since we do not have a bank here in the village, we tend to save money in Njangi. With the saving from Njangi I make, I am able to send my children to school and now I even have a bike on the road out of money I raised from Njangi"*.

- Social insurance

Social insurance coverage in Cameroon is very low (less than 25%). The few who belong to insurance schemes are mostly employees of the government who are mandated to pay and belong to the National Social Insurance schemes. A total of 72% of the population pays for healthcare and other related services out of pocket [50]. Among the rural poor, social insurance coverage is almost at zero percent. The results from the analysis show that only 3% of the beneficiaries of the IRRP belonged to insurance before the project. Notwithstanding, up to 7% belonged to insurance as a result of the project, which was encouraging. The results for URDP show that 20% of the beneficiaries belonged to insurance before the project and an additional 13% enrolled after the project.

- Agriculture development

Agricultural land ownership in the rural areas of Cameroon is at 86% compared to 32% in urban areas (National Institute of Statistics) [43]. This is because agriculture is the main source of livelihood for the rural population and large areas of land have been handed down from ancestral lineages. One of the impacts of additional income for the rural population who entirely depends on agriculture will be the acquisition of additional land. Table 4 shows that many beneficiaries could acquire additional pieces of land as a result of the project. Following similar trends, it is seen that up to 80% of beneficiaries of IRRP acquired additional land, whereas for URDP, 45% had acquired additional land. A beneficiary said *“Rice farming has really helped me and my family. I used to imagine that if I was not farming rice, where I would have had the means to take care of this large family I have today. My two wives have 17 children. My late brother left behind 6 children and so to feed this household is not easy for me. However, thanks to rice farming at least they do not lack something to eat. This large family is also beneficial to me as they help on working in the rice farms. When I started cultivating rice, I had only 2 plots but today I have 13 plots”*.

Table 4. Additional benefits to agriculture development.

	IRRP		URDP	
	N	%	N	%
Acquisition of additional land	118	80	63	40
Improved farming skills	148	100	145	92
Easy access to farm input	106	72	136	87
Easy access to market	88	60	134	85
Disaster reduction	127	86	61	39
Relevant disaster management technique introduction	124	84	105	67

Table 4 shows that more than half of the beneficiaries of both projects indicated that they had additional benefits in the following three categories: improved farming skills, easy access to farm inputs, and easy access to market. In addition, beneficiaries said that they had benefited from improved seeds, acquiring new rice varieties. A beneficiary said, *“I was able to buy roofing sheet in preparation to build my own house”*. Some farmers also attested to the fact that they were able to pay the school fees of their children and pay medical bills as a result of the benefits of this project. Additionally, it is with money gained from rice production that rice farmers could contribute to the different developmental projects in their different villages, such as the building of pipe borne water, schools, bridges, and maintaining roads.

Farmers in the rainfed agricultural region are highly exposed to the adverse effects of climate change [51]. This study used a Likert scale, from strongly disagree to strongly agree, to know if they had the relevant techniques to mitigate disasters. The results from IRRP show that the majority of the respondents agreed and strongly agreed (86%) that these disasters stopped/reduced as a result of the project as well as agreed (84%) that the project had introduced relevant disaster management techniques. This experience was confirmed by respondents during interviews and focus group discussions where it was said

that, before the JICA project, farmers depended only on water from swamps to produce rice. With climate changes, the water in the swamps became very inconsistent, which greatly affected the production of rice in negative ways. However, JICA experts introduced techniques for growing rice without depending only on water from swamps but rainfed and irrigated. As a result, the disasters experienced, such as the nonproduction of crops due to swamps drying off, greatly reduced. Secondly, the farmers attested that JICA experts had equally taught them integrated pest management, which greatly reduced the effects of pests and diseases that often contribute to poor yield from their farms. Similarly for the upland rice, regarding whether the disasters had reduced as a result of the project, less than half (39%) agreed that the disasters reduced as a result of the project, even though 67% agreed that the project had introduced relevant disaster management techniques. Therefore, there is a need to determine if farmers need further training to be able to implement the disaster management techniques introduced.

4.2.4. Narrative Comparison between Beneficiaries and Non-Beneficiaries

This narrative comparison was captured in the study areas of IRRP and URDP, including Ndop, Akono, Ngoumou, Assamba, Akonolinga, and Ebolowa in the northwest, center, south, and east regions of Cameroon. The information was obtained from a follow-up interview with 10 beneficiaries of the JICA project and also 20 non-beneficiaries. The aim was to show the standard of living of farmers of the study area before they benefited from the JICA project and also for non-beneficiaries. It ranged from food availability, buying of house provision, healthcare, payment of children's school fees, construction of houses, creation of other businesses, skills and technology, and inputs and output. The results are shown in Table 5.

Table 5. Narrative comparison between beneficiaries and non-beneficiaries.

Elements	Non-Rice Farmers	Situation before JICA Project	Situation after JICA Project
Food availability	Very little rice available for consumption Very low, below 1 ton, usually donated by family members	Little rice available for consumption (less than 1 ton a year)	Abundant rice for consumption (more than 2 tons a year)
	Buying more than 4 tons of rice to be consumed yearly	Buying of rice specially imported rice (more than 1 ton a year)	Selling of rice (5 tons a year)
		Poor quality rice produce Little or no rice available for sales	Quality rice available
Buying of house provision	Insufficient house provision because the means to buy is not there	Very little house provision bought with money gained from rice farming	Enough house provisions bought with money gained from rice farming
Health care	Insufficient medical intervention No knowledge about diseases caused by rice farming No knowledge about intervention for diseases	Insufficient medical intervention Little knowledge about diseases caused by rice farming Little knowledge about intervention for diseases	Moderate medical intervention Knowledge about the prevention of diseases caused by rice farming Exposed to knowledge about medical intervention for diseases caused by rice farming
Payment of children school fees	Barely paying children school fees and provision of school needs	Barely paying children school fees and provision of school needs	Provision of children school needs, payment of school fees, and even sending children to higher education
Construction of houses	Construction of thatches houses	Construction of less modern houses	Construction of modern and equipped houses
Creation of other businesses	Traditional farming	Buying of bicycle	Buying of motorbikes
		Opening of farms for maize and other crops	Opening of provision stores

Table 5. Cont.

Elements	Non-Rice Farmers	Situation before JICA Project	Situation after JICA Project
			Opening of rice mills
			Buying of transports cars and lorries
			Opening of tomatoes and vegetable farms
Skill and technology	Traditional methods	Using cutlasses, hoes, digging axe, application of fertilizers, poor drainage systems, traditional weeding methods, traditional harvesting methods	Traditional technology and the introduction of tractors, better drainage systems, spying on the farms in the place of weeding, harvesting with machine such as the combine harvesters
Inputs	Traditional methods	Poor seeds	Hybrid seeds
		Crude tools and methods	Application of fertilizer
		Draught animals	Labor hire
			Subsidized farming input
			Insecticides and pesticides
			Tractors and combined harvesters
Outputs	No output in the form of rice	Poor quality rice, on average 3 tons per year	Improved rice quality with an average yearly production of 6 tons

5. Discussion

The majority of the respondents of both projects were in the age group of 40 to 49 years. In Cameroon, the average household size is 5 persons. However, in this study the household sizes range from 1 to 32 for both projects. Anglophone crises seemed to have caused an increase in the household size of beneficiaries of the irrigated and rainfed rice since many people live in far-to-reach rural areas, which are relatively safer [52]. This increases manpower for rice production but also increases the additional mouths to feed as confirmed by a respondent during a focus group discussion: *“Rice farming has really helped me and my family. I used to imagine that if I was not farming rice, where would I have had the means to take care of this large family I have today. My two wives have 17 children. My late brother left behind 6 children and so to feed this household is not easy with me. However, thanks to rice farming at least they do not lack something to eat. This large family is also beneficiary to me as they help in working in the rice farms”*.

The majority of the respondents of the 148 respondents of the irrigated and rainfed rice had been involved in the project for 4 years and above, whereas for the upland rice, the majority of the 157 respondents had been involved for 2 years or less. The number of years was seen to have a major impact on the contributions as, generally for all indicators studied, the beneficiaries of the irrigated and rainfed rice experienced more benefits than those of the upland rice.

In both projects, beneficiaries indicated to have experienced additional income, which was higher for the irrigated and rainfed rice beneficiaries. Because the income of the beneficiaries of the irrigated and rainfed rice was poor before they joined the project, they engaged in the project with passion and commitment, and this enabled them to reap more benefits. Even though, looking at the contributions of the project to reduce income poverty would seem as if not all farmers were able to obtain income above the poverty line, looking at other multidimensional poverty indicators such as health and wellbeing, and standard of living, it can be seen that, overall, these two projects largely contributed in the reduction in poverty for the project beneficiaries.

With regard to wellbeing, the results showed that, in both the irrigated and rainfed rice project and the upland rice project, the majority of the beneficiaries could not eat three square meals a day, but as a result of the project, almost all the beneficiaries for both projects

were now able to eat three square meals a day. In addition, all farmers in both project areas experienced additional benefits, including improved farming skills, easy access to farm input, and easy access to the market in different proportions. With regard to improved standard of living, it was found that more than three quarters of the beneficiaries of the irrigated and rainfed rice attested to having electricity as a result of the project. The upland rice beneficiaries testified to having acquired environmentally friendly energy sources, such as solar panels, thanks to the project. Concerning drinking water, the beneficiaries of both projects attested to having lessened their distance to obtain drinking water to less than 1km as a benefit from the project.

In summary, these two projects greatly contributed to reducing the poverty levels of the project beneficiaries, not only regarding income poverty, but also the beneficiaries experienced improved wellbeing and standard of living, across several indicators. Generally, from the findings of this research, these two projects have the potential to enable Cameroon to achieve the SDGs if scaled out to the entire Cameroon, especially SDG 1 on “No Poverty” and SDG 2 “Zero Hunger”.

6. Conclusions and Recommendations

In this era of globalization, where social problems extend across social and geographical boundaries, partnerships between governments and international organizations are key to achieve sustainable development. If all countries are to achieve the SDGs, international cooperation is vital. Agriculture is key to achieving poverty reduction in Sub-Saharan Africa. In Cameroon, agriculture is the main occupation and the sector employs over 60% of the population. However, this sector has been plagued with several challenges. Cameroon can produce rice to meet local demands and export; however, it still largely depends on foreign importations. Since 2002, JICA was established in Cameroon with the aim of contributing to the socio-economic development through various projects, including vast investments in the agricultural sector.

JICA has lent considerable support the government of Cameroon to undertake major agricultural projects across the country, especially in rice cultivation (irrigated and rainfed rice and upland rice). The evaluations conducted by JICA show that the original objectives of these projects were largely attained. However, these evaluations are narrow in their focus as they focus on evaluating the goals and objectives of the project without careful consideration of other contributions that the project may have brought to the beneficiaries. Poverty is multi-dimensional and any project that is aimed at reducing poverty needs to look at the multi-dimensional aspects of poverty. However, research is not available to determine the contributions of these projects to poverty reduction in accordance with the MPI.

This research utilized a goal-free evaluation design to collect both qualitative and quantitative data to determine if JICA investments in the agricultural sector in Cameroon have contributed to increasing income and alleviating other multi-dimensional indicators of poverty amongst its beneficiaries. A total of 305 respondents participated in the study, 148 for the irrigated and rainfed rice and 157 for the upland rice. The results show that 97% of the beneficiaries of IRRP experienced additional income as a result of the JICA project. These beneficiaries have been involved in the project for 4 years and above. For URDP, where the majority of the beneficiaries have been involved for 2 years or less, 62% indicated to have had additional income. It was also found that, before the project, up to 68% of the beneficiaries could not afford to eat three square meals a day, whereas after the project, 93% were able to eat three square meals, indicating an improvement in the wellbeing of the beneficiaries. The project also brought other additional benefits, such as an increased rate of electricity ownership in the homes of the beneficiaries and easy access to source drinking water. These benefits were higher for the beneficiaries of the irrigated and rainfed rice who had been involved in the project for 4 years and above, compared to those of the upland rice project who had been there for less than 2 years. Generally, the research found that the

two projects studied greatly contributed to an improved income, wellbeing, and standard of living of the project beneficiaries.

Given that Cameroon is ecologically favorable for rice production, it is recommended that projects for rice production should be expanded, especially in the rural areas, which have a great potential to completely eradicate poverty from Cameroon. It is equally recommended that, in international cooperation projects with Cameroon, projects for rice production should be prioritized as it was found that rice production based on Japan's technology has the potential to contribute to poverty reduction at multiple levels. It can be seen from these research findings that agricultural projects can produce additional benefits beyond the main goals, when these additional aspects are embedded in the project design. It is therefore recommended that international development organizations such as JICA, when supporting developing countries, should be make intentional efforts to embed some components of the SDGs and MPI.

The MPI which informed this study has other elements used to define poverty which were not considered in this research because 74 of possibility that other factors could have contributed to their causes, apart from the JICA project which could not be determined by this research. These include indicators like "a child under 18 who died in a household in the five-year period preceding the survey", "no eligible household member that has completed six years of schooling", etc. In conclusion, most African countries, such as Cameroon, need to address poverty by improving the agricultural sector because crop yields cannot be maintained at stable levels. That is to say, international cooperation in the agricultural sector is very useful in order to increase crop yield, and the incomes and quality of life of the populations.

Author Contributions: conceptualization, A.O.B. and J.Y.; methodology, A.O.B. and J.Y.; validation, A.O.B. and X.L.; formal analysis, A.O.B., J.Y., X.L. and K.O.; investigation, A.O.B.; resources, A.O.B. and J.Y.; data curation, A.O.B. and J.Y.; writing—original draft preparation, A.O.B., X.L. and J.Y.; writing—review and editing, X.L., J.Y. and K.O.; visualization, A.O.B. and X.L.; supervision, J.Y.; project administration, J.Y.; funding acquisition, J.Y. All authors have read and agreed to the published version of the manuscript.

Funding: This research was funded by Japan International Cooperation Agency (JICA) Scholarship (SDGs Global Leadership Program), donated fund by MS&AD Insurance Group Holdings, Inc.

Data Availability Statement: Not applicable.

Conflicts of Interest: The authors declare no conflict of interest.

Appendix A. Questionnaire

Dear respondent,

My name is AGHO OLIVER BAMENJU, a student at the Tohoku University in Japan. I am expected to conduct this research on "The contribution of JICA'S agricultural projects to poverty reduction in Cameroon". Below is a list of questions intended to collect information specifically for this purpose only and not otherwise. Please kindly fill and give it back to me as soon as possible. Your responses will be kept highly confidential. PLEASE DO NOT WRITE YOUR NAME.

Section A

Instructions: Please fill in all your details and place a tick (✓) in the box beside the appropriate response

(A1) Your Sex (1) Male (2) Female

(A2) What is your age (please tick (✓) the range where your age falls)

1. 10–19 years
2. 20–29 years
3. 30–39 years
4. 40–49 years
5. 50–59 years

6. 60–69 years
7. 70–79 years
8. 80 and above

(A3) What is your marital status?

- (1) Single
- (2) Married
- (3) Divorced
- (4) Widowed
- (5) Cohabited

(A4) Number of years you were involved in the JICA project

- Less than one year
- 1 to 2 years
- 3 to 4 years
- 4 to 5 years
- Above 5 years

(A5) What is the size of your household (in numbers) _____

Section B:

(B1) How would you rate your income from farming before the project?

1. Very good
2. Good
3. Acceptable
4. Poor
5. Very poor

(B2) What was your estimated yearly profit (income) from farming before you joined the project?

1. No profit
2. Less than 200,000 frs
3. Between 200,000 to 399,999 frs
4. Between 400,000 to 499,999 frs
5. Between 500,000 to 599,999 frs
6. Between 600,000 to 699,999 frs
7. Between 700,000 to 799,999 frs
8. Between 800,000 to 899,999 frs
9. 900,000 and 999,999
10. 1000,000 frs and above

(B3) Did you experience additional income (profit) as a result of the project?

Yes No

(B4) If yes, what is the estimated additional income you got as a result of the project?

1. No profit
2. Less than 200,000 frs
3. Between 200,000 to 399,999 frs
4. Between 400,000 to 499,999 frs
5. Between 500,000 to 599,999 frs,
6. Between 600,000 to 699,999 frs,
7. Between 700,000 to 799,999 frs
8. Between 800,000 to 899,999 frs
9. 900,000 and 999,999
10. 1000,000frs and above

(B5)	BEFORE THE PROJECT		AFTER THE PROJECT		Comments
Were there sometimes you were NOT able to eat 3 square meals	Yes <input type="checkbox"/>	NO <input type="checkbox"/>	Yes <input type="checkbox"/>	NO <input type="checkbox"/>	
Has someone ever fallen sick in your house because they did not have food to eat?	Yes <input type="checkbox"/>	NO <input type="checkbox"/>	Yes <input type="checkbox"/>	NO <input type="checkbox"/>	
Has a child below 18 ever died in your house?	Yes <input type="checkbox"/>	NO <input type="checkbox"/>	Yes <input type="checkbox"/>	NO <input type="checkbox"/>	

(B6) How many members in your household have completed at least 6 years of schooling? _____

(B7) Do you have your own toilet? Yes No

(B8) Before the project, how long was your drinking water source from your house?

1. less than 1 km
2. within 1 km
3. More than 1 km

(B9) After the project, how long is your drinking water source from your house?

1. less than 1 km
2. within 1 km
3. More than 1 km

(B10) BEFORE THE PROJECT, did your house have electricity?

Yes No

(B11) AFTER THE PROJECT, does your house have electricity?

Yes No

(B12) Before the project, were you renting Yes No

(B13) After the project, are you now living in your own constructed house? Yes
No

(B14) WHICH OF THE FOLLOWING DID YOU HAVE BEFORE THE PROJECT?

1. TELEVISION
2. Telephone
 - a. Smart phone/mobile phone
3. Computer
4. Bicycle
5. Motor bike
6. Refrigerator
7. Others _____

(B15) AFTER THE PROJECT, I HAD THE FOLLOWING IN MY HOUSE

1. Television
2. Telephone
 - a. Smart phone/mobile phone
3. Computer
4. Bicycle
5. Motor bike
6. Refrigerator
7. Others _____

(B16) What other benefits have you had because of the project?

1. improved farming skills
2. easy access to farm input
3. easy access to market

if others, please specify _____

(B17) BEFORE THE PROJECT, did you belong to any njangi? Yes No

(B18) Did you enter any njangi as a result the project Yes No

(B19) BEFORE THE PROJECT, did you belong to any insurance? Yes No

(B20) Did you enroll in any insurance as a result of the project Yes No

(B21) Before the project, did you own piece (s) of land Yes No

If yes, how many?

1. Less than 1 hectare
2. 1 to 2 hectares
3. 3 to 4 hectares
4. 5 hectares and above

(B22) Did you acquire additional land because of the project? Yes No

If yes, how many?

1. Less than 1 hectare
2. 1 to 2 hectares
3. 3 to 4 hectares
4. 5 hectares and above

S/N	Question	Strongly Disagree (SD)	Disagree (D)	Undecided (UD)	Agree (A)	Strongly Agree (SA)
	(C1) Before the project, women had rights to own land					
	(C2) As a result of the project, women have the rights to own land					
	(C3) The project introduced relevant disaster management techniques					
	(C4) Before the project, I experienced disaster in my farm					
	(C5) As a result of the project, these disasters have reduced/stopped					
	(C6) Before the projects there were no schools in the project area					
	(C7) As a results of the project, schools were opened in the project area					
	(C8) Before the projects there were no health facilities in the project area					
	(C9) As a results of the project, health facilities were opened in the project area					

Appendix B. Interview and Focus Group Discussion Guide

- Researcher introduces himself and explains purpose of research and ethical requirements.
- He asks respondents to introduce
 - Please tell me about yourself (your marital status, the number of people living with you in your house etc.)
 - How long have you been involved in the project?
- Has there been any benefits for you and other famers as a result of this project? If so, are some of the benefits?
 - To you as an individual

- To your family
 - To this community
 - To other farmers
 - Have you acquired any additional assets because of your involvement of the project? If yes, name some of them?
 - Do you belong to any njangi or insurance scheme because of the project? If yes, describe it and the advantages of belonging to such a group
 - What are some of the disadvantages brought to you by the project?
 - Can you say the project has contributed to reducing poverty in this area? If yes, explain how
- Appreciate respondent for time

References

1. Mattas, K.; Baourakis, G.; Zopounidis, C. (Eds.) *Sustainable Agriculture and Food Security; Cooperative Management*; Springer International Publishing: Cham, Switzerland, 2018; ISBN 978-3-319-77121-2.
2. Bicaba, Z.; Brixiová, Z.; Ncube, M. *Eliminating Extreme Poverty in Africa: Trends, Policies and the Role of International Organizations*; African Development Bank: Abidjan, Cote d'Ivoire, 2015.
3. Jalilian, H.; Kirkpatrick, C. *Financial Development and Poverty Reduction in Developing Countries*; John Wiley & Sons, Ltd.: Hoboken, NJ, USA, 2002; Volume 7.
4. Choi, G.; Jin, T.; Jeong, Y.; Lee, S.K. Evolution of Partnerships for Sustainable Development: The Case of P4G. *Sustainability* **2020**, *12*, 6485. [[CrossRef](#)]
5. Osborn, D.; Cutter, A.; Ullah, F. *Universal Sustainable Development Goals Understanding the Transformational Challenge for Developed Countries*; Stakeholder Forum: New York, NY, USA, 2015.
6. World Bank. *World Development Report 2009*; World Bank: Washington, DC, USA, 2009.
7. Abia, W.A.; Shum, C.E.; Fomboh, R.N.; Ntungwe, E.N.; Ageh, M.T. Agriculture in Cameroon: Proposed Strategies to Sustain Productivity. *Int. J. Res. Agric. Res.* **2016**, *2*, 1–12.
8. Food Security Information Network. Global Report on Food Crisis 2018. 2018. Available online: <https://reliefweb.int/report/world/global-report-food-crises-2018> (accessed on 10 September 2022).
9. Sakamoto, K. *Japan and China: A Contest in Aid to Sub-Saharan Africa*; World Scientific Publishing Co Pte Ltd.: Singapore, 2018; ISBN 978-981-322-373-8.
10. Japan International Cooperation Agency JICA Programme in Cameroon. Available online: https://www.jica.go.jp/cameroon/english/office/others/c8h0vm00009vxtjj-att/brochure_01.pdf (accessed on 29 August 2022).
11. Japan International Cooperation Agency Project on Supporting Investment Promotion in Africa: Data Collection Survey on Investment Promotion in the Republic of Cameroon. Available online: https://www.jica.go.jp/cameroon/english/activities/c8h0vm00004b26wp-att/data_collection_survey.pdf (accessed on 29 August 2022).
12. Japan International Cooperation Agency. *Summary of the Results of the Evaluation Survey*; Japan International Cooperation: Agency, Japan, 2013. Available online: https://www2.jica.go.jp/en/evaluation/pdf/2013_1000645_3_f.pdf (accessed on 29 August 2022).
13. Alkire, S.; Santos, M.E. Measuring Acute Poverty in the Developing World: Robustness and Scope of the Multidimensional Poverty Index. *World Dev.* **2014**, *59*, 251–274. [[CrossRef](#)]
14. Aziz, Y.; Mansor, F.; Waqar, S.; Abdullah, L.H. *The Nexus between Zakat and Poverty Reduction, is the Effective Utilization of Zakat Necessary for Achieving SDGs: A Multidimensional Poverty Index Approach*; John Wiley & Sons, Ltd.: Hoboken, NJ, USA, 2020; Volume 14.
15. Nawab, T.; Raza, S.; Shabbir, M.S.; Khan, G.Y.; Bashir, S. Multidimensional poverty index across districts in Punjab, Pakistan: Estimation and rationale to consolidate with SDGs. *Environ. Dev. Sustain.* **2022**, *24*, 1–25. [[CrossRef](#)]
16. Oxford Poverty and Human Development Initiative. *Global Multidimensional Poverty Index 2018*; Oxford Poverty and Human Development Initiative (OPHI): Oxford, UK, 2018; ISBN 978-1-912291-12-0.
17. Hák, T.; Janoušková, S.; Moldan, B. Sustainable Development Goals: A need for relevant indicators. *Ecol. Indic.* **2016**, *60*, 555–573. [[CrossRef](#)]
18. United Nations. World Charter for Nature. Available online: <http://www.un-documents.net/wcn.htm> (accessed on 25 October 2022).
19. United Nations. Report of the United Nations Conference on Environment and Development. Available online: <https://digitallibrary.un.org/record/168679> (accessed on 25 October 2022).
20. United Nations. Development Programme Oceans at Rio+20: How Well Are We Doing in Meeting the Commitments from the 1992 Earth Summit and the 2002 World Summit on Sustainable Development? Summary for Decision Makers. Available online: <https://www.undp.org/publications/oceans-rio20-how-well-are-we-doing-meeting-commitments-1992-earth-summit-and-2002-world-summit-sustainable-development-summary-decision> (accessed on 25 October 2022).

21. United Nations. United Nations Conference on Sustainable Development, Rio+20. Available online: <https://sustainabledevelopment.un.org/rio20> (accessed on 25 October 2022).
22. Najman, B.; Gachassin, M.; Raballand, G. *The Impact of Roads on Poverty Reduction: A Case Study of Cameroon*; The World Bank: Washington, DC, USA, 2010.
23. Tchoundjeu, Z.; Asaah, E.K.; Anegbeh, P.; Degrande, A.; Mbile, P.; Facheux, C.; Tsobeng, A.; Atangana, A.R.; Ngo-Mpeck, M.L.; Simons, A.J. Putting Participatory Domestication into Practice in West and Central Africa. *For. Trees Livelihoods* **2006**, *16*, 53–69. [[CrossRef](#)]
24. Sundjo Fabien Cameroon: Almost 97% of Household Have Problems in Food Crop Production. Available online: <https://nkafu.org/cameroon-almost-97-of-household-have-problems-in-food-crop-production/> (accessed on 29 August 2022).
25. Scoones, I.; Amanor, K.; Favareto, A.; Qi, G. A New Politics of Development Cooperation? Chinese and Brazilian Engagements in African Agriculture. *World Dev.* **2016**, *81*, 1–12. [[CrossRef](#)]
26. Wen, Y.; Li, H.; Du, X.; Yang, K.; Casazza, M.; Liu, G. *Analytical Approach to Win-Win Game Analysis for Chinese and Japanese Development Assistance Strategies in Africa*; Elsevier: Amsterdam, The Netherlands, 2019; Volume 96.
27. Momita, Y.; Matsumoto, T.; Otsuka, K. *Has ODA Contributed to Growth? An Assessment of the Impact of Japanese ODA*; North-Holland: Amsterdam, The Netherlands, 2019; Volume 49.
28. Japan International Cooperation Agency. *Mid-Term Review Report on Project for the Development of Irrigated and Rainfed Rice Cultivation (PRODERIP) in Cameroon*; JICA: Tokyo, Japan, 2021.
29. Organisation for Economic Co-operation and Development The DAC Guidelines Poverty Reduction. Available online: https://www.oecd-ilibrary.org/poverty-reduction_5lmqcr2kgv8v.pdf?itemId=%2Fcontent%2Fpublication%2F9789264194779-en&mimeType=pdf (accessed on 5 September 2022).
30. Ludi, E. Kate Bird Poverty Brief—Understanding Poverty. Available online: <https://www.shareweb.ch/site/Poverty-Wellbeing/Documents/SDCPovertyBrief160413Web.pdf> (accessed on 5 September 2022).
31. World Bank Group Multidimensional Poverty Measure. Available online: <https://www.worldbank.org/en/topic/poverty/brief/multidimensional-poverty-measure> (accessed on 2 September 2022).
32. Youker, B.W.; Ingraham, A. Goal-Free Evaluation: An Orientation for Foundations’ Evaluations, Grand Valley State University Libraries. *Found. Rev.* **2014**, *5*, 50–61.
33. United Nations. World Food Programme. Cameroon—Comprehensive Food Security and Vulnerability Analysis (CFSVA). 2017. Available online: <https://www.wfp.org/publications/2020-comprehensive-food-security-and-vulnerability-analysis> (accessed on 6 September 2022).
34. Nkemi, L.; Nji Herman, D.; Christopher Mubeteneh, T.; Jetro Nkengafac, N.; Jetro, N. *Analysis of Small Scale Farmers Households Food Security in the Mount Bamboutos Ecosystem*; Science and Education Publishing: Newark, DE, USA, 2021; Volume 9.
35. Japan International Cooperation Agency. Activities in Cameroon. Available online: https://libportal.jica.go.jp/library/Data/PlanInOperation-e/Africa/569_Cameroon-e.pdf (accessed on 6 September 2022).
36. Business in Cameroon, Cameroon: Estimated at 140,170 Tons in 2020, Local Rice Production Covered Only 24% of Demand, MINADER Reveals. Available online: <https://www.businessincameroon.com/public-management/2501-11220-cameroon-estimated-at-140-170-tons-in-2020-local-rice-production-covered-only-24-of-demand-minader-reveals> (accessed on 26 October 2022).
37. Daniel, W.W.; Chad, L. *Cross Biostatistics: A Foundation for Analysis in the Health Sciences*, 11th ed.; Wiley: Hoboken, NJ, USA, 2019; ISBN 978-1-119-28237-2.
38. Charmaz, K. *Constructing Grounded Theory: A Practical Guide through Qualitative Analysis*; SAGE Publications: London, UK, 2006.
39. Mark, S. Cogan Japan: To Beat China in Africa Abe’s Successor Needs to Take Risks. Available online: <https://www.theafricareport.com/40170/japan-to-beat-china-in-africa-abes-successor-needs-a-risk-taking-strategy/> (accessed on 8 September 2022).
40. SAWAJI Osamu More African Rice for Africans. Available online: <https://www.japanjournal.jp/diplomacy/international-cooperation/pt20190307131405.html> (accessed on 7 September 2022).
41. Ministry of Foreign Affairs of Japan. Japan’s Official Development Assistance White Paper 2013. Available online: <https://www.mofa.go.jp/policy/oda/white/2013/html/index.html> (accessed on 7 September 2022).
42. International Monetary Fund. Why Productivity Growth is Faltering in Aging Europe and Japan. Available online: <https://blogs.imf.org/2016/12/09/why-productivity-growth-is-faltering-in-aging-europe-and-japan/> (accessed on 9 September 2022).
43. National Institute of Statistics (Cameroon) and ICF. *2018 Cameroon Demographic and Health Survey Summary Report*; NIS and ICF: Rockville, MD, USA, 2020.
44. Trading Economics Cameroon-Income Poverty-2022 Data 2023 Forecast 1997–2020 Historical. Available online: <https://tradingeconomics.com/cameroon/income-poverty-wb-data.html> (accessed on 9 September 2022).
45. Andrea Peer Global Poverty: Facts, FAQs, and How to Help. Available online: <https://www.worldvision.org/sponsorship-news-stories/global-poverty-facts> (accessed on 9 September 2022).
46. Fonchingong, C.C.; Fonjong, L.N. *The Concept of Self-Reliance in Community Development Initiatives in the Cameroon Grassfields*; Springer: Berlin/Heidelberg, Germany, 2002; Volume 57.
47. *Country Priority Plan and Diagnostic of the Electricity Sector: Cameroon*; African Development Bank Group: Abidjan, Cote d’Ivoire, 2021.
48. United Nations. *2021 Global Multidimensional Poverty Index (MPI)*; The United Nations: New York, NY, USA, 2021.

49. Forje, L.C. *Domestic saving mobilisation and small business creation: The Case of Cameroon*; AOSIS (pty) Ltd: Cape Town, South Africa, 2014; Volume 9.
50. International Labour Organization Building Social Protection Floors with the Ilo Together: To Change Millions of Lives in Cameroon. Available online: <https://www.social-protection.org/gimi/RessourcePDF.action?ressource.ressourceId=53300> (accessed on 13 September 2022).
51. Valery, N.; Ngala, K.I.; Leonard, C. Karba Juliet Adaptations of Swamp Rice Farmers to the Effects of Climate Change in Ndop Sub-divison. *Cameroon* **2021**, *VIII*, 161–167.
52. Kuwonu, F. Crisis worsens in Cameroon. *Africa Renewal*. Available online: <https://www.un.org/africarenewal/magazine/december-2018-march-2019/crisis-worsens-cameroon> (accessed on 9 September 2022).