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Evaluation of the Value Chain Development Program in Nigeria: Qualitative Findings

Sarah Eissler

Jessica Heckert

Poverty, Gender, and Inclusion (PGI) Unit

INTERNATIONAL FOOD POLICY RESEARCH INSTITUTE

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AUTHORS

Sarah Eissler (sarah.e.eissler@gmail.com) is an independent consultant.

Jessica Heckert (J.Heckert@cgiar.org) is a research fellow in the Poverty, Gender, and Inclusion Unit of the International Food Policy Research Institute, Washington, DC.

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ABSTRACT

The International Fund for Agricultural Development (IFAD) and the Federal Government of Nigeria implemented the Nigeria Value Chain Development Program (VCDP) across six Nigerian states with the objective to improve farmer organizations' collective efficacy, and alleviate poverty via improving rice and cassava production, farmers' incomes, and value chain integration. The VCDP incorporated a gender-sensitive design to target women beneficiaries and improve empowerment by expanding access to training, opportunities, and resources. The VCDP also aimed to improve local infrastructure. This study presents qualitative findings from the VCDP impact evaluation.

Four communities from two of the six treatment states were selected for this study: Niger and Anambra. Across study areas, sex disaggregated key-informant interview were conducted with 10 service providing agents (technical and capacity building), 8 farmer organization leaders, 14 producers, 13 processors, and 15 marketers. And 8 sex disaggregated FGDs were conducted with members of farmer organizations; 2 FGDs were also conducted with youth-only farmer organizations.

Service providing agents found general success in delivering services to beneficiaries and benefitted themselves by working for the VCDP. Agents developed new skills that better enabled them to deliver services, and they benefitted from higher social standings as a result of their work. The VCDP was generally well received and improved target farmer organizations' collective efficacy. These factors lead to improved rice and cassava production and processing, increasing access to necessary resources for value chain actors, and fostering cross node integration. Beneficiaries found that the different VCDP technical trainings that supported linkages to buyers were particularly useful for improving their outcomes within the value chains. Additionally, VCDP supported infrastructure development positively impacted value chain actors, particularly women, by reducing the time they spent on certain domestic chores and facilitated their ability to better participate in value chain activities.

Some challenges persisted. Cultural norms restricted interaction between men and women in Niger state. Weak governance of participating farmer organizations, high levels of corruption, and security concerns that limited mobility and access to remote areas were especially challenging. Beneficiaries also noted that access to suitable financing was a significant challenge; the VCDP is rolling out a new financial linkages component to address this directly in 2020. Finally, beneficiaries were sometimes frustrated with what was perceived as unmet expectations or slow delivery of services by VCDP.

In future iterations of VCDP and similar programs, it is recommended to continue strengthening the capacity building services to improve organizations' collective efficacy, embed anti-corruption measures to ensure all intended beneficiaries have access to program resources, ensure appropriate and timely delivery of services to meet beneficiaries' needs, and to strengthen the gender component of the program by increasing gender-sensitization trainings for beneficiaries, further targeting women beneficiaries for inclusion, and delivering context-specific solutions that enable all women beneficiaries have equal access to program support and resources.

Keywords: Agricultural development interventions, Collective agency, Farmer organizations, Nigeria, Value chains

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ACRONYMS

BOL	Binomial Optimal Limited
FGD	Focus Group Discussion
FO	Farmer's Organization
GALS	Gender Action Learning System
GoN	Government of Nigeria
IFAD	International Fund for Agriculture Development
IFPRI	International Food Policy Research Institute
KII	Key-Informant Interview
LGA	Local Government Area
NGO	Non-Governmental Organization
VCDP	Value Chain Development Program

1. INTRODUCTION

This paper presents findings from the qualitative gender study conducted as part of the International Food Policy Research Institute (IFPRI)-led impact assessment of the first phase of the Nigeria Value Chain Development Program (VCDP), funded by the International Foundation for Agricultural Development (IFAD). The Nigeria VCDP was implemented in collaboration between IFAD and the Federal Government of Nigeria (GoN) since 2013 to support actors along rice and cassava value chains in 30 local government areas (LGAs) in Anambra, Benue, Ebonyi, Niger, Ogun, and Taraba States, all selected to intensify program activities and maximize impact. The VCDP's overall objective is to create an enabling environment for rice and cassava farmers by adopting a value chain approach to enhance productivity, promoting agro-processing, facilitating access to markets and opportunities to engage the private sector, and building capacity of established farmers organizations (FOs). The VCDP targeted existing FOs, defined as producer groups, processor groups, or marketing groups, as the main entry point to select and engage beneficiaries. Since the beginning of the program, two types of service providers have operated at the LGA level to provide technical services and capacity building services to agricultural producers and FOs, respectively. The VCDP was initially rolled out in the six aforementioned states, and three new states and eighteen LGAs in the existing states have been identified for future scaling up.

VCDP has two overarching components: 1) Agricultural Marketing Development and 2) Smallholder Productivity Enhancement. Several activities comprise the first component: infrastructure development, business management capacity, promoting adoption of improved processing practices, creating linkages to financial service providers, quality control and standardization systems, and market information systems. The second component includes

management training, production extension services, dissemination of improved seeds and planting materials, establishing youth-run seed enterprises, providing matching grants to acquire inputs and machinery, and developing arable land under irrigation schemes. In addition, the VCDP adopted a comprehensive gender strategy that promotes facilitating women's access to assets, strengthening women only and mixed gender groups in terms of governance of value chain specific activities, easing their workload, and improving their overall well-being.

This study was designed to answer questions related to gender and women's empowerment, program implementation, value chain integration, and collective efficacy in the Nigeria VCDP. The following research questions guided the study design and implementation:

- How was the program delivered from the implementing agencies' perspective?
- How was the program delivered at the community and the FO level?
- How do the groups practice or experience collective efficacy?
- What are the benefits (or drawbacks) for smallholders, at the producer, processor, and marketer levels?
- To what extent was there effective cross-node (farmer-processor-marketer) integration of the value chains? What are obstacles to further cross-node integration?
- How did the program impact women's empowerment?

2. METHODS

Training and Field Team

Qualitative fieldwork and data collection was conducted in collaboration with Binomial Optimal Limited (BOL). The field team consisted of four women and four men, all of whom had qualitative data collection and gender-focused research experience in Nigeria. For fieldwork, the team was separated into two groups by language and sex: two men and two women were on the Igbo-speaking team and Hausa-speaking team.

The training was held in Abuja, Nigeria from January 26 to February 1, 2020 prior to the start of fieldwork, and led by the first author. The training covered the following topics: background on the IFPRI-IFAD impact assessment portfolio, background on the Nigeria VCDP, gender, value chains, collective efficacy, and best practices for high quality and ethical qualitative data collection. The team reviewed each data collection instrument in-depth and then the separate language teams practiced each tool in either Igbo or Hausa to ensure correct translation.

The field team piloted the KIIs and FGDs in a community with an FO that participated in the VCDP in Shiroro local government area (LGA), Niger State[1]. The field team then returned to Abuja to review final revisions of the instruments based on pilot feedback, discuss fieldwork and transcription expectations, and establish field work logistics for each team. Data collection occurred in February 2020.

[1] The pilot exposed limitations with the VCDP implementation data, particularly that some FOs included on the list of participating FOs only just recently joined the program and had not yet received the intervention. The pilot was conducted with an FO in this category, therefore not all instruments were fully tested by each team. For future sampling, only FOs that had received interventions were identified for participation.

Sampling

This study was conducted in two VCDP treatment states, Niger and Anambra, which were chosen based on sample diversity (geographic and linguistic), logistical feasibility, safety concerns, and availability of target beneficiaries for this study. The Hausa-speaking team conducted the field work in Niger state and the Igbo-speaking team conducted the field work in Anambra state. For identifying study sites, the unit of selection was at the ward level in Niger state, and at the village level in Anambra state[2]. Two wards in Niger state and one ward in Anambra state were purposively selected based on the existence and availability of men and women in producer, processor, marketer, and youth farmer organizations that had received the VCDP intervention[3]. In Niger state, FOs were selected to represent each respective ward. In Anambra state, FOs from two specific villages were selected to represent the one ward selected. FOs were selected to participate based on whether they had received VCDP interventions and on their availability to participate in the study.

The VCDP contracted a variety of Nigerian NGOs and firms across implementation states to provide two specific services to VCDP beneficiaries: extension and capacity building. These service providers were selected based on their availability at the LGA level. Each FGD included between 8 and 12 participants and all but one FGD were disaggregated by gender. Table 1 highlights the number of men and women selected to participate in each data collection activity by ward and state.

[2] In Anambra state, there were limited availability at the ward level of men and women producer, processor, and marketer FOs who participated in the VCDP to select for purposes of this study. Therefore, one ward was selected (Omor) and two communities were selected within Omor ward.

[3] No youth groups existed in Anambra state. Initial sampling considered either Anambra or Ebonyi states for the Igbo-speaking team, however no marketer groups existed in Ebonyi state. Anambra was selected given the importance of understanding perspectives from segments along the value chain.

Table 1. *Qualitative Sample by Location, Instrument, and Sex*

Language Group	Hausa				Igbo				
State	Niger				Anambra				
LGA	Katcha		Bida		Ayamelum		Ayamelum		
Ward	Community 1		Community 2		Community 3		Community 4		
	M	W	M	W	M	W	M	W	**Total**
Community Profile	1		1		1		1		4
								Total Community Profiles	**4**
KII Technical Agent	1	-	-	2	2	-	-	1	6
KII Capacity Building Agent	1	-	1	-	1	1	-	-	4
KII FO Leader	1	1	1	1	1	1	1	1	8
KII Producers	2	1	2	1	2	2	2	2	14
KII Processors	1	2	1	1	2	2	2	2	13
KII Marketers	1	2	2	2	2	2	2	2	15
								Total KIIs	**60**
FGD with FO Members[+]	1	1	1	1	1	1	1	1	8
FGD with Youth FO Members[+]	1 [mixed]		1	-*	-	-	-	-	2
								Total FGDs	**10**

Source: Authors.

* There were no women-only youth FOs available to conduct an FGD.

[+] Each FGD included 8-12 participants.

Qualitative Discussion Guides

The authors developed the qualitative instruments used in this study. The instruments build off of those developed for the IFPRI-led qualitative study of the IFAD-supported Mali Rural Microfinance Program (Margolies et al. 2020). The qualitative instruments included a community profile, key informant interviews (KIIs) with VCDP agents, KIIs with FO leaders, KIIs with members of producers, processors, and marketer groups, respectively, and focus group discussions (FGDs) with FO members and youth FO members.

Table 2. *List of VCDP Actors*

Farmer Organization (FOs):	The VCDP targeted existing and newly formed farmer organizations as the entry point for providing assistance to build collective capacity of organizations to increase quality of production, processing, and marketing in rice and cassava value chains. FOs operated as either value chain node specific or across nodes (i.e., producer only or producers and processors, etc.). Some FOs were men, women or youth only, others were mixed. These are referred to throughout the report by the author as FOs, however some respondents refer to these as either groups or cooperatives.
Farmer Organization Leader:	Each FO had a designated leader who would interact on behalf of the FO with respective VCDP actors. Some of these leaders would also work together in leadership groups at the State and National levels.
Capacity Building Agents:	Similar to technical extension agents, the VCDP contracted local NGOs and firms in each operating state to provide capacity building services to VCDP-supported FOs. These services included, but were not limited to, team building and leadership exercises, business and financial management, and time management.

Source: Authors.

The community profile was conducted with one to three men knowledgeable of community dynamics in each representative community selected for this study. The profile asked respondents about topics related to the general community dynamics and demographics, infrastructure, transportation infrastructure, education, livelihoods, and the status of women.

KIIs were conducted with VCDP hired technical agents and capacity building agents in each LGA[4]. These KIIs addressed agents' role in and understanding of the VCDP, the project's staffing, beneficiary engagement, project dynamics and impacts, collective efficacy in program groups, and opportunities and challenges in value chain programs. The KIIs also asked about agents' own personal experiences under the VCDP and related to gender roles in the villages in which they work. KIIs were also conducted with leaders of VCDP supported FOs. These KIIs addressed leaders' background and leadership experience, how the FO was developed and functions, VCDP FO beneficiary selection, program experience, group membership and dynamics, and perceptions of and experience with local infrastructure. KIIs were then conducted with members of producer, processor, and marketer FOs in each ward. These KIIs addressed respondents' background and experience in their respective value chain node, experience as a

[4] In Anambra state, there were no women service providers.

beneficiary of the VCDP, group dynamics of their respective FO, experiences with accessing loans, and perceptions of and experience with local infrastructure.

Finally, two types of FGDs were conducted. The first type was sex-disaggregated with FO members. This FGD asked members about their FO and experience under the VCDP, group dynamics and collective efficacy, and perceptions of and experience with local infrastructure. The second type of FGD was conducted a youth-only FO under the VCDP. The VCDP considers youth between 18-39 years of age. No youth-only FOs participated in the VCDP in Anambra state. These youth-only FGDs were conducted in Niger state with members of an all men youth FO and a mixed sex youth FO. This FGD covered the same topics as the first type of FGD, but probed specifically on experiences, challenges, and opportunities under the VCDP as a youth organization.

Data Processing and Analysis

KIIs and FGDs were conducted by the Nigerian field team either in Hausa or Igbo language, and they were audio recorded if the participant gave consent. For each activity, either a facilitator (if no notetaker was available) or notetaker provided structured notes throughout the field collection process. During fieldwork, the first author provided feedback on the notes to monitor data quality. The field team transcribed the recordings from each activity in English. The first author developed a codebook that included deductive and inductive themes. Relevant segments of text in the transcripts and notes were coded based on the codebook, using NVivo 12^{TM} software. The coded text was used to conduct a thematic analysis.

Ethics and Compensation

This study was approved by the Institutional Review Board of IFPRI as well as a local ethics committee in Nigeria. The interviewers all received training on research ethics and the process

for seeking informed consent. Before each KII or FGD began, the facilitators read the prepared statement of voluntary consent and all participants provided oral informed consent. Additionally, all participants were asked for their consent prior to audio recording the interview. In the cases where consent to record was not granted, the facilitators did not record[5]. Participants were compensated for their time with an in-kind gift worth 1000 naira[6] (detergent for men and cooking seasoning for women).

[5] One participant did not give consent for audio-recording their interview. For this interview, analysis relied on available notes.

[6] Approximately $2.57 USD.

3. RESULTS

Description of Study Villages

The community profile activities provided insights into the demographics and livelihood activities of the villages included in this study. Table 3 presents overall demographic information about the villages included in this study by state.

Table 3. *Study Village Descriptions by State*

	Niger state villages	**Anambra state villages**
Population	~1,000 – 1,5000 households per village	~10,000 – 15,000 households per village
Ethnic groups	Nupe (65-70%), Hausa (20%), Yoruba (10%)	Igbo (80-95%), Hausa (4-5%), Yoruba (1-10%), immigrants from Togo
Religion	Islam (70%), Christianity (30%)	Christianity (75-80%), traditional religions (25%), Islam (5%).
Marriage type	Polygyny (70-90% of households), Monogamy (10-30% of households)	Monogamy (70-80% of households), Polygyny (20-30% of households)
Type of education services available	Co-ed primary and secondary schools available; no education services available beyond secondary education	Co-ed primary and secondary schools available; Adult education center available; Computer training center available

Source: Authors.

In both states, the study villages are all considered rural, predominately known for small-scale agriculture, fishing activities, and craftmanship (such as pot making). In the Niger state villages, the primary crops grown are rice, maize, beans, and sorghum. In addition to crop production, fishing is an important, profitable activity in the Niger state villages. The primary crops grown in the Anambra state villages are rice, cassava, yam, plantains, melon, banana, corn, and cocoyam. Fishing and small livestock rearing, such as poultry and goat, are important activities in the Anambra state villages. Other forms of employment available in both areas include government work, construction, bricklaying, masonry, and commercial bike or vehicle drivers.

Livelihood activities are considered of different value and importance for men and women in both study areas, such that certain ones are the most important for men whereas others

would be considered most important for women. Rice is considered the most important crop to men's livelihoods in all study villages. Over the past five years, rice production and profitability has significantly increased due to technology and farming improvements, and increased demand. In Niger state, rice is also considered the most important crop for women's livelihoods, as women are actively involved in rice processing and marketing; higher production and demand for rice has resulted in women having more work and the ability to earn higher incomes to support themselves and contribute to their household expenses. In Anambra state, cassava is considered the most important crop for women's livelihoods; respondents observed an increase in cassava production in Anambra villages over the past five years.

All of the study villages were generally well connected to utility services. Available water sources across all study villages included rivers, rainwater, and boreholes, which have been accessible for the past decade. All but one village utilizes all of these sources for both drinking water and agricultural needs, whereas the one village (in Anambra) solely relies on rainwater for agricultural needs. All study villages have relied on the national grid (NEPA) as their main power source since it first became available in the 1980s; and some individuals have utilized privately own generators since the early 2000s. The Niger state study villages also use solar energy, which became available in 2015-2016. All study villages have access to cellphone services, places to purchase phone credit, and mobile charging stations. More recently, within the past one to four years, depending on the village, vendors have begun accepting mobile payments.

The villages in Niger state were much better connected to formal financial institutions and services than those in Anambra. Formal financial institutions are relatively close for the Niger state villages (1 to 2 km away from the community centers). In the Anambra state villages, only informal financial groups (loan groups or agents for mobile money transfer) are available near

the community. For example, for one village in Anambra, the closest formal financial institution is a 30 to 40-minute public bus ride away from the village center.

The Anambra state villages were generally better connected to transportation infrastructure than the Niger state villages. The Niger state villages are all connected to a government-maintained road, although the quality of this road is considered very poor due to the abundance of potholes and minimal maintenance. The closest paved road is approximately 5 km away from each study village's center in Niger state, and it had only been paved for four months prior to data collection[7]. Various forms of public transport exist in the Niger state study villages, including bicycles, tricycles, and taxis, and can be found within approximately 20-30 minutes walking from the center of each village. The Anambra state study villages are connected to a paved road, which had been built in 1983 in one village and linked to the other study village in approximately 2003; the condition of this road varies depending on location due to differences in maintenance quality. Many forms of public transportation exist in the Anambra state villages, including taxis, motorcycles, tricycles, bicycles, and shuttle busses, all of which are readily available throughout the communities for local transport. Access to public transportation to major cities is a bit further away, located in a centralized park in the ward; for one village it is a 5-minute walk, whereas for the other it is a 40-minute walk.

All study villages were generally well connected to local and regional markets, however those in Niger state had to travel further than those in Anambra to access local markets. Anambra state villages have local markets at the village center, whereas the local markets for the villages in Niger state are approximately 3 km away from the village center. Rice mills exist in each village for processing rice. Most of these mills were established by the government in the 1970s

[7] February 2020.

(Niger state) or 1980s (Anambra state), but now are either owned and operated by individuals, cooperatives, or private groups.

Local Gender Norms

The study areas experience gender norms consistent with those reported in the literature in other studies that focused on Nigeria (Forsythe et al., 2016). In both study areas, Niger and Anambra state, there are similar gender norms such that women are expected to fulfill their roles a housewives by submitting to their husband, and assume and accomplish all household responsibilities, such as household food preparation, childcare, and other domestic tasks, whereas men are considered the leaders at both the household and community levels. "*Men are the head of women in our community. They lead"* [Niger, FGD, women]. In their normative roles, men are responsible for productive labor, providing income and food to support the household, and for making decisions. To an extent, some gender norms vary between Niger and Anambra villages included for this study, such that women in Niger state are subjected to stricter adherence to norms that limit their ability to engage in productive labor outside of the household, compared to those in Anambra.

In the Anambra state villages, women have access to farmland either through her husband or male relatives, if it is available. Otherwise, she can coordinate either by herself or with other women to rent farmland. In contrast, women in the Niger state study villages cannot own land and rarely can access it to cultivate. According to men in Niger state, women *"do not farm in the community, [therefore] they do not need the farmland"* [Niger, community profile, man].

Gender roles across value chains nodes are generally consistent between the two study areas, as well as in broader West African contexts (Eissler et al., 2021). Men in Niger state typically produce crops, whereas women more often operate as processors or marketers.

Respondents attribute these roles to general lack of access to land for women in Niger and Anambra state, as well as perceived lack of physical strength, compared to men. As some men in Niger state indicated, women do not work as producers, because "*women do not have physical strength [to farm]"* [Niger, FGD, men]. However, this study included several women in rice or cassava producer FOs. These women noted that while they may work on some production activities, they typically must "*hire labor to do the hard work that women can't do*" [Anambra, KII, FO leader, woman]. One woman explained when she would hire male labor, "*Men normally create the ridge, while women do the planting and weeding…I pay for the ridge making and preparing of the soil but planting of the seeds is done by me. But if the work is a lot, I can pay two people for assistance*" [Anambra, KII, producer, woman].

Men typically are producers, whereas women typically operate in the processing node, although both may work across nodes. One producer explained, "*The men are the ones that farm. They till the ground. And the women are the ones that weed the farm. Both [men and women] farm the cassava. But it is the women that process the cassava here more, because they see that the work is not meant for the men"* as men prefer to do other "*activities rather than sit and peel the cassava"* [Niger, KII, producer, man]. With regard to marketing, according to a woman processor, "*Both women and men are into marketing"* [Niger, KII, processor, woman]. These gendered roles across value chains are not uncommon in West African contexts (see Eissler et al., 2021 for a more detailed discussion on gendered roles in agricultural value chains in Benin).

In both study areas, women typically marry after 18 years of age, with some exceptions. For example, in Anambra, while previously common for girls to marry before 18 years of age due to demands for household and agricultural labor, nowadays, due to "*globalization*", it is rare for a girl to marry before 18 [Anambra, community profile, man]. The only exceptions currently

exist in Anambra when a girl is either "*very beautiful or has had an unwanted pregnancy"* [Anambra, community profile, man]. In the Niger state study villages, women typically only marry after 20 years of age.

In cases of divorce or spousal death, women's rights to assets vary depending on location. In both states, women do not have rights to household assets (land, houses, livestock) in case of a divorce. She may retain certain assets after the divorce depending on the couple's agreement; however, the husband has full control over whether or not to settle. In cases of a husband's death, in Niger, assets are shared amongst the living wife or wives. In Anambra, a woman's rights to household assets depends on how well she fulfilled her wifely duties, as determined by his family and relatives. If she was a good wife, her husband's family would support her, and she would have rights to household assets. Otherwise, "*If she behaved arrogantly to the husband or neglected her duties as a wife when he was alive, the [husband's] immediately family seeks ways to suffer the woman by extending the date for the burial of the man*," thus blocking her access to assets [Anambra, community profile, man].

Women were considered empowered if they treated their husbands with respect, achieved high levels of education, financially contributed to their household, and fully managed their domestic duties. Overall, as described in a community profile in Anambra, "*a woman is respected due to how she lives and relates with her husband"* [Anambra, community profile, man].

Finally, some respondents felt their actions did not fully align with preestablished gender norms. One capacity building agent in Anambra explained how she managed both community expectations with her own agency. In her community, women are expected "*to go and get married…My people always expect me to be at home and be cooking even when I have things to*

do…I just make them understand that I am not the cooking type, and I have work to do that brings money into my pocket" [Anambra, KII, capacity building agent, woman].

Program Delivery and Operations

Program Objectives and Service Delivery from Service Provider's Perspective

The VCDP contracted several Nigerian NGOs to provide technical and capacity building services to FO beneficiaries in their respective states. This study interviewed men and women agents who worked directly with beneficiaries (field staff and liaison officers) from each state. Table 4 presents the sex breakdown of field staff and program management staff for the technical and capacity building agents included in this study by state and LGA. Each NGO employed field staff who work directly with beneficiaries, liaison officers and their assistants who work with beneficiaries and VCDP staff, and management staff who work directly with the VCDP staff.

Table 4. *Technical and Capacity Building Agents Sex Distribution by State and LGA*

State	**Niger**				**Anambra**			
LGA	**Bida**		**Katcha**		**Ayamelum[1]**		**Awka North[2]**	
Sex	**M**	**W**	**M**	**W**	**M**	**W**	**M**	**W**
Technical Agents								
Field Staff & Liaison Officers[3]	9	6	2	0	3 | 6	1 | 6	4	2
Program Management Staff[4]	4	3	1	3	1 | 6	4 | 0	-	-
Capacity Building Agents								
Field Staff	6	4	5	3	4	5	4	3
Program Management Staff	1	0	5	1	3	3	3	2

Source: Authors.
[1]Technical agents from two companies were included in this study. Figures for both companies are listed side-by-side.
[2]Awka North is a neighboring LGA to Ayamelum, where the Anambra participants were sampled. The staff in Awka North also serve Ayamelum beneficiaries.
[3]Field staff and liaison officers work directly with beneficiaries, while management staff do not.
[4]The representative from Awka North did not know how many program management staff from her company were involved in VCDP as her company is very large.

The NGOs included in this study mostly employ women field staff to directly engage with beneficiaries, except for the NGO in Katcha that provides technical services. A male technical agent explained, "*We had a number of staff to be employed. The women that applied were*

shortlisted. Other local governments have female staff, but here, only the two male staff were employed" [Niger, KII, technical agent, man].

The service providing agents understood the main objectives of the VCDP to include alleviating poverty, improving rice and cassava farmer capacity, improving farmers' incomes by increasing productivity, and enabling sustainable success of farmers' organizations. One further elaborated, "*The objectives of the VCDP is simply to alleviate poverty in the lives of farmers. They try to empower farmers, basically rice and cassava farmers cultivating less than five hectares of land. The VCDP assists them with inputs, machineries and knowledge*" [Anambra, KII, capacity building agent, woman]. A technical agent emphasized the VCDP's goals were, "*also to strengthen [farmers] in their co-operative groups*[8]*, and to strengthen the farmers' organization*" [Niger, KII, technical agent, man]. And finally, service providing agents understood that the VCDP aims to enable sustainable success for its beneficiaries, "*The main objectives are to sustain the farmers organization that they can stand on their own after the program has finished*" [Niger, KII, capacity building agent, man].

Technical and capacity building agents described their respective objectives in supporting the goals of the VCDP. All agents indicated that an overall, implicit objective was to change the minds and attitudes of beneficiaries towards farming and agriculture, "*The most important thing is getting farmers to change their mindsets and to start seeing farming as business*" [Anambra, KII, capacity building agent, man].

[8] Here and throughout this report, respondents may refer to the farmer's organizations as *farmer's groups* or *cooperative groups*. To maintain the integrity of the respondents' words, these terms are not altered, but it is important to note that these additional terms refer to what the VCDP standardly uses as the farmers organization (FO).

Technical agents support rice and/or cassava producers by delivering technical services, knowledge, and support to improve productivity. One technical agent in Niger state summarized his role,

> *As a private extension agent working with the VCDP, my objective is to teach [producers] good agronomic practices in these two rice and cassava productions, so they will be able to improve on their productions. Before [the VCDP], they could only produce one to two tons of rice per hectare; but with our intervention as extension agents, we are able to teach them [to] do this, [to] do that, and now they are able to produce three to four tons per hectare with our inputs to their production* [Niger, KII, technical agent, man].

Capacity building agents work directly with the VCDP FOs to facilitate and strengthen their organization and collective efficacy. One agent in Anambra state explained, "*Specifically, our objectives are just to strengthen the farmer organization, because the VCDP works with the farmers organization. We have to empower these farmers organizations and help ensure the farmers benefit very well from the program*" [Anambra, KII, capacity building agent, woman].

Gender and program delivery

Both men and women agents were hired to work directly with beneficiaries and discussed challenges in working with beneficiaries of the opposite sex, however these varied by location. In Niger state, women agents saw themselves as better able to work directly with women beneficiaries and generally did not have challenges with the men beneficiaries. "*[The community / service providing company] expect me to be able to empower the women [beneficiaries] directly more. You know in most of these communities, women listen to women, because they feel we are the same. So, whatever you discuss with them, they are free to discuss with you. But for the men [beneficiaries], some of them are shy*" [Niger, KII, technical agent, woman]. Other women agents in Niger did not share challenges in working directly with men beneficiaries. Given the strict adherence to gender norms in Niger state compared to Anambra, it is not

surprising that women agents are better able to interact with women beneficiaries. Women beneficiaries in Niger state are unable to interact with male agents; therefore, women agents have better access.

Men agents elaborated on this challenge from their perspective, citing challenges in working directly with women beneficiaries. Cultural norms limit women's ability to engage with men other than their husbands. "*Due to cultural and religious beliefs, you cannot talk to a man's wife without his permission"* [Niger, KII, extension service provider, man]. This agent further elaborated, explaining how these challenges directly impact women beneficiaries,

> *The men are usually easy to work with. They are easily convinced with our ideas; they actively participate in all activities. But for the women, they always lay down excuses. To some, their husbands do not allow them to interact with us as male extension agents… A lack of direct contact with the women definitely hinders the impact of this extension service. We find it difficult to access the women, thereby limiting the benefits these women ought to gain* [Niger, KII, technical agent, man].

The VCDP and their technical agents worked to circumvent this challenge by directly approaching husbands in regard to their wives' participation "*through trainings and meetings. We let [the men] understand that the same issues we discuss with them are the same issues we discuss with their wives…We use other men to circulate the information to other men and it works to the extent that we then don't really need to seek the permission of the men"* to engage with women [Niger, KII, technical agent, man]. In some circumstances, women's FOs in Niger state employ a man as a secretary so that he can directly engage with male agents, "*In most of the [women] farmer organizations, they try as much as possible to put a male as the secretary of the group. So, you contact the women through him. Any day you are coming, you tell him and before you even get there the women are there"* [Niger, KII, capacity building service provider, man].

In contrast, male agents in Anambra do not face similar challenges. "*There is no barrier at all. This is Anambra state; there is nothing like what you have in the North [Niger state]…Yes, we are free to talk. If I want to visit a farmers group, for example, the husband does not have any reservation me talking to his wife. And the females feel free to talk to us"* [Anambra, KII, technical agent, man]. Women service providers in Anambra also did not cite any gender specific challenges for working with beneficiaries. However, one woman mentioned that it can be challenging to work with women beneficiaries, because "*sometimes when you call the women, they will keep giving you excuses, like I have a meeting or the other"* [Anambra, KII, capacity building agent, woman]. The contrast in these constraints between service providing agents and beneficiaries in both states indicates that women beneficiaries in Niger state, especially those in areas that do not have a woman service providing agent, may benefit less from VCDP trainings and support that their Anambra or male counterparts.

Gender-specific trainings for service providing agents and VCDP FOs

While the VCDP incorporated a gender-sensitive design to target women-only FOs, gender trainings or activities were not part of the service delivery package to beneficiaries. However, the VCDP did deliver gender-specific trainings to serving providing agents (technical and capacity building) to build their own capacity to deliver gender-sensitive services to beneficiaries.

One training delivered to service providers was cited as particularly useful. "*There have been trainings we call GALS*[9]*. It aims at making sure that the male counterpart also sees the female counterpart as a partner and being able to contribute to some of their household activities, like the household chores that should be carried out in the house. It encouraged men*

[9] The Gender Action Learning System (GALS) training is part of IFAD's household methodologies.

to help the women. GALS means Gender Action Learning System" [Niger, KII, capacity building agent, man].

These trainings aimed to shift norms and expectations around the household and agricultural divisions of labor. One technical agent described the effect such trainings had on his own perspectives and household dynamics, "*I have benefited from the gender mainstreaming trainings. Before, when I came back home, I [would] expect my wife to bring my food, while I sat down watching television, whether she is tired or not. But the gender mainstreaming training, which I have listened to, has made me realized that, yes, I can help her wash plates, I could sweep, even bathe the children and all those things. And I have being doing that*" [Anambra, KII, technical agent, man].

Another explained how the training enabled her to better deliver gender-sensitive services to beneficiaries, "*There's a training we had on gender action, learning techniques we teach the farmers, and we give room for questions concerning gender equality…The only thing I know that has changed is that [women] are now aware that they can combine domestic chores and also be part of decision making.*" [Anambra, KII, capacity building service provider, woman].

Agents' understanding of women's empowerment

Service providing agents generally understood women's empowerment in terms of economic power or building women's confidence in their own abilities while reducing their dependence on men. With regard to economic power, service providing agents believed women's empowerment to mean "*boosting the economic capacity of women in society*" [Anambra, KII, technical agent, man] or "*to empower women to be financially independent"* [Niger, KII, technical agent, woman]. Some understood women's empowerment as a means to enable women to act more confidently in their own abilities, "*I think it's about encouraging women to farm. [To show] them*

that they can do some certain things in the absence of men" [Anambra, KII, technical agent, woman]. Another explained women's empowerment was "*letting the women know that they have the capacity to do this job. These jobs are not only meant for the males*" [Anambra, KII, technical agent, man]. As summarized by a capacity building agent in Niger state, both concepts underpin the general understanding of women's empowerment in the study areas, "*Women's empowerment is when you've been able to improve the woman to see herself not only as a housewife, but being able to fend for the family. And not only the men, [but for her to realize she is] able to do something that will also bring income to the family*" [Niger, KII, capacity building agent, man].

Empowered women were described in terms of their ability to earn higher incomes and be successful in farming. In Anambra, a young woman farmer stood out as an example of empowerment, "*There is this youth farmer, who's a woman. She's very successful. At times I consider leaving my service provider job to join the lady*" [Anambra, KII, capacity building agent, woman].

VCDP integrated women's empowerment in programming by purposefully targeted women-only farmer organizations to build their capacity and skills to earn higher incomes. VCDP facilitates women's empowerment by "*training the women on how to better process rice, we give them capital to start their farms, and also guide them through out their activities*" [Niger, KII, extension service provider, man]. Impacts of the VCDP on women's empowerment for beneficiaries are further described in a below section.

Benefits to service providing agents

Agents described the benefits they received from working with VCDP, for which they would work sometimes in their own communities. Several agents cited benefitting from the VCDP

trainings received that built their own capacity to deliver higher quality services. One explained, "*I enjoyed the capacity buildings. You know, we have been to a number of trainings, and those trainings were quite educative. We learned a lot of things"* [Anambra, KII, technical agent, man].

Others shared benefits to them in their own community, having increased their social status because of their work with VCDP. One man explained, "*My biggest achievement is that people were able to know me. I became popular. If I call any organization in Katcha now, whatever I want, they do it*" [Niger, KII, technical agent, man]. A woman noticed how she became a role model for women in her own community, "*[My community] wonders if a woman can be an extension service provider. Now they see a woman who's a service provider, and they wish their daughters could also do that, not minding the gender, could be a service provider*" [Niger, KII, technical agent, woman].

Challenges faced by program implementors and their solutions

Agents discussed challenges they experienced while delivering services to VCDP beneficiaries. In some cases, they offered potential solutions to mitigate these challenges. These challenges can be broadly classified as lack of farmer adoption, weak group governance structure, corruption, and difficulty accessing service areas.

In general, the technical agents, who work with producers to improve productivity, cited challenges with farmers who they felt did not want to listen to their advice and were having trouble gaining credibility amongst the producers with whom they worked. Both men and women technical agents cited this challenge in both study areas. One explained, "*My main obstacle is because most of the farmers are local in the sense that no matter how you explain to them, some are stubborn. They feel they know and you don't need to teach them"* [Niger, KII,

technical agent, woman]. They also indicated that not all producers were adopters, "*Very few farmers are adopters of the things we are telling them, and they see the result. Yes, it's in cassava, in rice too"* [Anambra, KII, technical agent, man]. He further described,

> *You know, when you come to the farmer, you can tell him instead of making molds to plant cassava, use ridges; or instead of planting your cassava too close together, cluster or stem [them], plant it 80 cm by so- and-so cm, 1 meter by 80 cm. Do it like that, you will get more yield. The farmer will tell you 'ok', but sometimes they will tell you 'look Mr. Man, before your mother was born, I have been planting this thing, what are you telling me?'* [Anambra, KII, technical agent, man].

Additionally, some farmers do not adopt the new skills or technologies delivered by the technical agents, because the new practices might incur additional time or labor to implement. Some producers do not have the ability to hire labor or expend additional time themselves, nor do they have access to machinery and tools that would reduce these burdens. One technical agent gave the example that for rice producers, a best practice would be to grow seedlings in a nursey and transplant them, rather than broadcasting seeds over fields as a means of planting, "*It's laborious, time consuming, and expensive when you bring laborers to do [the transplanting], but that gives much more yield. But in China, in other countries that produce rice, they don't, most of them, use manual labor for that. There are machines that if you just load it and it would transplant the rice for you. But we don't have [those] here"* [Anambra, KII, technical agent, man].

Another challenge faced by agents was the weak governance structure and corruption of FOs. In theory, the VCDP targeted existing FOs that were considered "weak" by an established set of criteria. And the capacity building agents were to work to support these groups in building collective capacity and developing their managerial and organizational skills. However, in practice, some FOs were existing (and perhaps had a weak operating structure), others

established themselves on paper for VCDP and were not functioning as an organization, rather a few individual members. This weak governance is an ongoing challenge, felt by both technical and capacity building agents. One technical agent explained, *"The most frustrating part is bringing these groups together. That has been very frustrating, because since when we met them, they don't do anything. And up until now, we are struggling to bring them [together], some of them are still where they were"* [Niger, KII, technical agent, man]. Another observed why groups are still considered "weak", "*Maybe it's because some of these groups were formed even before IFAD. It's the way the groups were constituted. I will say that some of them are not people of like minds, and in a group, if you are not having people of like minds being together, then there is that tendency for you to have [weak groups]*" [Niger, KII, capacity building agent, man]. According to this agent, the most important part of the VCDP was to build capacity for FOs and suggested that this component be strengthened in the future so groups can work together better to achieve their goals.

In addition to poor organization, several agents note that corruption also poses serious challenges to the VCDP's success. One technical agent presented this case regarding corrupt registration and organization of the FOs, this issue,

> *[The program design] has its flaws. I know so many groups that an individual has set up. Let's say you know, 'Ah, VCDP has come into town, and they are giving so many things to farmers. I need to form a cooperative so that I can benefit from it'. So, [these individuals] would go and register a cooperative, but you cannot put only your name there. So, you get people, other people, and put their names in the cooperative society. And those people, when they say, 'This organization needs to pay dues or whatever', you yourself will contribute all that money by yourself, and go and pay it. Yes, so the cooperative is for you. So, when VCDP brings, or any other group brings, the support, only you get it* [Anambra, KII, technical agent, man].

Finally, accessing service areas is another challenge agents face fulfilling their VCDP duties, whether due to security issues or insufficient mobility. Local conflicts can arise

unexpectedly and pose security challenges for those from outside certain communities[10]. In Anambra, agents are aware of the threat such conflicts pose to their service areas, "*Although we haven't witnessed it here [in my service areas], this herdsmen's menace has affected farming*" [Anambra State, KII, capacity building agent, woman]. In Niger state, agents note how security concerns affect their work, "*In Katcha, sometimes, about the crises, within the communities there will be a curfew in town…it is between the communities fighting about land, so sometimes that [conflict] will scare you*" [Niger, KII, capacity building agent, man].

In addition to ongoing security concerns, "*mobility is a major challenge"* for all agents in both Niger and Anambra to access their service areas [Niger, KII, technical agent, man]. For all agents, the road conditions, particularly during the rainy season, were a major concern with regard to accessing their service areas, "*Also, the stress involved and the challenges in transportation, because some roads leading to some communities are not motorable*" [Anambra, KII, capacity building agent, woman].

One service providing company did not provide their staff with motorcycles or transport support, which placed additional burden on staff to cover this expense. For the others, their company provided this asset to facilitate their work. One technical agent suggested, "*Since the villages are scattered, it's not easy to transport ourselves to those villages…I think [the company or VCDP] should assist the service providers with transportation. The cost of transportation from [village 1] to [village 2] is 50 naira[11] during dry season; this cost increases during the rainy season owing to the bad roads*" [Niger, SII, technical agent, woman].

[10] In certain parts of Nigeria, recent rates of violence have spiked between herder and farmer groups, mostly discussed in terms of control over ecological resources between uncontrolled north-south migration of herdsmen and the resulting struggle for land access for farmers and herdsmen. See Chukwuma (2020) for a detailed description and critical discussion of discourses framing this conflict's narrative.

[11] Approximately $0.13 USD.

Male agents observed that mobility is particularly a challenge for women agents. In general, men perceived that women were less confident driving a motorcycle, especially on poor road conditions, and were fearful of traveling far distances by themselves. In their perspective, a woman could not rely on public transportation, because "*if she says she wants to use public transport to move around, every single penny they are paying her as allowance would be going to transportation and it won't be enough for herself [to live]*" [Anambra, KII, technical agent, man]. This man continued to explain why he thought issues of mobility were more challenging for women than men agents,

> *It would be difficult for a woman to do all those things. And sometimes, she would even tell you 'this farmer needs my attention, so follow me' because she is afraid of going to that forest alone. Yes, so I don't think it's…in short, it's not easy for a woman to do this kind of job. And you know they get married too and have children. So, if she's pregnant, you don't expect her to carry that pregnancy and be jumping up and down on bikes on a very bad road. And if she gives birth to a baby, six months she is still on maternity leave. So, what happens to the farmer when she's on maternity leave? So, I think it's even better males do the job* [Anambra, KII, technical agent, man].

Additionally, this example highlights discrimination women may face regarding expectations around their domestic duties or becoming pregnant from male colleagues.

Women service providers did not corroborate these concerns of fear or maternity leave. However, several did request assistance from their companies or VCDP in reaching their communities, with one suggesting that "*the service providers should be assisted with a motorcycle to aid movement to the communities*" as a means to improve the program [Anambra, KII, capacity building agent, woman].

Community-level experiences of program delivery

Beneficiary targeting

As previously mentioned, the VCDP targeted existing FOs for the program. These were selected based on criteria that assessed their organizational capacity such that the VCDP selected FOs that were considered weaker in order to focus efforts in building these organizations' capacity to work together and achieve their goals. It was expected that these organizations existed and functioned prior to the VCDP, however sometimes they were developed to capitalize on project resources, as mentioned in the previous section. Some FO members observed that only FOs received benefits from VCDP. "*There is a difference in access to inputs [in the community], because not everyone is part of the VCDP. The difference is that some people did not form a [FO], so if benefits are to be distributed, they will not get access to it as individuals"* [Niger, FGD, men].

FOs selected by the VCDP were instructed to focus on one value chain node (production, processing, or marketing) and on either rice or cassava, "*When IFAD comes, it encourages us on farming cassava"* [Niger, KII, FO leader, man]. The FOs were labeled based on these two criteria (crop and value chain node); however, in reality, while some FOs did only function at one node, many FOs worked on a variety of crops and across several nodes , as well as in other livelihood activities. One women's FO works together to produce rice and cassava, while another only produces rice, "*Our major goal is to join hands together to see if we can help each other. So, we engage in production, rice production*" [Anambra, FGD, women]. A mixed-gender youth FO produces and processes rice, as well as produces other crops like maize, millet and beans. The FO also markets the processed rice to buyers. A women's FO in Niger used to only produce body lotion and soaps, but now processes rice as well. Some FOs are single sex, while others

have men and women members. In the mixed sex FOs, sometimes all members work together on all activities, but more often they work on gender-separated tasks, "*Men normally do the production work, and the women normally process the rice"* [Niger, FGD, youth, mixed].

One FO leader in Anambra explained that his FO was selected to join the VCDP but had not registered his FO, "*Someone came to inform us that our name is in VCDP. We didn't register at all"* [Anambra, KII, FO leader, man]. While another Anambra FO leader had to actively register to join VCDP, "*When IFAD selects groups, the group will show their government certificate [of FO registration] and be duly registered. I went to a man called [redacted]; he told me the requirements and I got them. Then he registered our FO with the names of our members. This happened in my group"* [Anambra, KII, FO leader, woman]. It is not clear from the qualitative data why or how these differences exist.

Women and youth FOs were, in theory, specifically targeted for inclusion in the program. However, they were still underrepresented; one capacity building agent suggested that more attention should be given to youth and women FOs, "*The beneficiaries are mostly men, and this is because of the way the members of the communities were brought up. I think more should be allocated to women and the youth, not only the men*" [Anambra State, KII, capacity building agent, woman].

At the FO level, while members said generally anyone could participate, there were some examples of exclusion, both indirect and direct. Indirectly, some membership rules excluded certain people from participating. For example, some FOs fine members for arriving late or missing meetings, which excluded those who would want to attend but were either time poor or did not have the resources to pay potential fines. "*For example, if I come late for a meeting, I pay*

a fine of 50 naira[12]*. If I don't come at all, it will be 200 naira*[13] *fine*" [Anambra, FGD, men]. Many FOs require membership registration fees, an ID card to register, and monthly membership dues to participate. Some FOs, such as a women's FO in Niger state, do not charge anything (registration fees or monthly dues). However, these fees limit some individuals' ability to participate, "*Sometimes we do contribute money monthly. Most of the [group members] fall apart; they couldn't meet up so they decided not to join the group again because she can't afford that monthly fee"* [Anambra, FGD, women].

Directly, certain people were excluded in joining FOs due to a variety of reasons. Most FOs indicated they would not accept "*violent"* [Niger, FGD, women] or "*drunkards, irresponsible people"* [Niger, FGD, men] into their FO. Others held maximum capacities of 25 members or less. Some FOs were religiously affiliated and only accepted members of the same religion, "*All members are Catholics. There are some that wanted to join but weren't Catholics. We couldn't accept them because of our constitution. We support the church"* [Anambra, FGD, men].

Some exclusionary practices were gender-based. In Niger, while women may be accepted into a male dominated FO, this is typically rare, as the woman's husband would not allow such interactions. One man from a mixed FO in Niger explained, "*We only have one woman; this is because the men are jealous, and they do not want their wives to mingle with us (men). She registered before she got married though"* [Niger, FGD, men]. In Anambra, men explained that while the men were registered in the FO, their wives were then *de facto* members as well. One man explained, "*You know, if you're a member, it's automatically assumed that your wife is also a member. Like one of our members that died, his wife will replace him in the next meeting"*

[12] Approximately $0.13 USD.
[13] Approximately $0.51 USD.

[Anambra, FGD, men]. Another FO member clarified that wives or single women cannot be their own member in a male-dominated FO as their presence could potentially invite immoral behavior from other male members, "*Our aim is to achieve one objective, which is to prevent misconduct. Any man whose wife is here will be guided and act accordingly"* [Anambra, FGD, men]. Only women whose husbands are already part of this FO were able to join as members.

Some women-only FOs exclude men from joining them. A woman from such a FO explained why,

> *Well, I'll say that it's just a women's group, because we are not ready to battle with men. And also, as women, we map out what to do, we all will join hands, and do it. Another thing is that, including men in our activities, I see it as something that will disturb us. We all know how men behave in our different families, so that's why I decided to make it all women group, so that anything we set out to do, we'll do it together without issues…* [Anambra, FGD, women].

Some FOs also organized as an official FO to receive government assistance, in addition to assistance from VCDP. One member explained, "*In the registration of a cooperative, we are aware the government does not help individuals much. The government helps groups. Up until now, any incentive from government will not come to me as [individual name redacted], it will come to me as [group name redacted] cooperative. That's what made us register that time"* [Anambra, KII, processor, man]. A woman's FO member explained the strategic decision to leverage a women-only group to be more competitive in receiving government support,

> *Also, at that time, the government was saying that they want women cooperatives more than men, because we know how we manage our families. Sometimes, the government decides to give out grants to cooperatives, and you see that women can manage the money better than men. Some men will collect this money and lavish it in hotels, but in the case of women, because we manage our homes and children well, we'll know how to manage the money in other to achieve the aim of the group* [Anambra, FGD, women].

Program successes and areas for improvements

Service providing agents found that the VCDP worked well, despite the aforementioned challenges, and held strong promise to yield positive impact. "*Not to talk down on other [government] projects, VCDP is the only project that is designed to sustain itself*" [Anambra State, KII, capacity building agent, man].

Beneficiaries, on the other hand, shared mixed reviews of the VCDP. Despite concerns with how the program was delivered, beneficiaries did describe positive impacts from VCDP activities and participating in their respective VCDP-supported FO. These are outlined and discussed in detail in a later section (Section 4 "Program Impact").

FO members found several VCDP activities to be extremely beneficial. At the beginning of an FO's engagement with VCDP, they were given subsidized access to important inputs, where the VCDP would subsidize the cost of inputs, like fertilizer or seeds. One woman explained, "*The thing is, they'll calculate the total sum of money [for the inputs, like fertilizer] and give half. Then we'll complete the rest. For example, if fertilizer is 5,000 naira*[14]*, we'll bring 2,500 naira and they'll pay the remaining half"* [Anambra, FGD, women]. The trainings were also effective in disseminating best practices to attendees. "*They teach us how to plough, post planting, how many bags of fertilizer to use for each plough for effective yielding, time for ploughing, as well as time to apply fertilizer and weeding"* [Anambra, KII, FO leader, man].

Beneficiaries shared a variety of complaints and issues with how VCDP in general delivered their activities. To some extent, these varied between FO members and FO leaders, who interacted with VCDP service providers at different levels.

[14] Approximately $12.82 USD.

Several respondents explained that the timing of input delivery did not suffice their needs.

> *They should please help us so that we can increase our farm production, not when the season is over, when you people will come. Because sometimes, they'll give you inputs around September, while it's supposed to be given this February, March so that we'll use it on time. If they give us input now, we'll get ready, so that before April, we'll start farming. So, some of these problems make production very low* [Anambra, FGD, women].

The process to disseminate inputs was also a concern of many beneficiaries. Service providing agents typically engaged directly with the FO leaders to disseminate inputs, share information or updates about VCDP activities, or schedule trainings. This approach relies on general good governance, the collective efficacy of the FO leaders to share inputs amongst the organization, and the leadership of FO leaders to properly disseminate the inputs (materials or knowledge) amongst the members. A woman explained how FO leaders (also referred to as 'elders') make decisions for the organizations, which she views to be unfair, "*For example, if the group is given a bag of rice and the elders take out 50% of the quantity and give the remaining 50% to the other members, we don't have the right to complain. Had it been they can be considerate to take maybe 10% and release the remaining 90% to the members, that would have been better, but you know, people do things differently here"* [Niger, KII, marketer, woman]. One men's FO in Anambra explained how sometimes inputs went only to individuals, who then rented out these inputs to FO members within the broader community, "*For instance, if IFAD brings 100 tractors to aid cooperative farmers at a low rate, they will privatize it and give it to individuals. Members will then have to hire these tractors from these individuals"* [Anambra, FGD, men].

A men's FO leader corroborated this practice, explaining how only he and one other person in his community received inputs, "*In 2017, they gave myself, and I think the other man, incentives, rice seeds and fertilizer. And the other groups, other members in our group, when they went, they told them the time is over. So, I think only myself in [village redacted] received incentives and that man*" [Anambra, KII, processor, man]. Another leader shared somewhat of a similar experience, "*Twice, we have received fertilizer in our group by the government, but there are people in this VCDP that complain mostly that they don't receive these incentives"* [Anambra, KII, FO leader, man].

A common theme of empty promises by VCDP frustrated many of the respondents. An apex group in Niger explained, "*[VCDP] promised us milling machines, but failed to provide us that; they promised us grants, but they failed to give us that"* [Niger, FGD, women]. A women's FO in Anambra shared a similar concern, "*There was a time they said they'll give us [machines] if we do everything we were asked to do, to provide all the documents, which we did. But later, nothing was given to us. They gave one cooperative a milling machine. So, we will also like for them to give us a cassava milling machine or rice milling machine, if they can give it to us, we will be happy"* [Anambra, FGD, women].

These concerns were shared by men's FOs as well. One FO discussed how VCDP representatives talked about construction labor opportunities in their community but did not follow through in giving them the work.

> *If they want to make enquiries, they come down to us, but when it is time to benefit, they give it to the individual rich ones up there. That is why I told you earlier, they come to us to make enquiries, they even come with Chinese people to make enquiries from us, when they finish making enquiries from us and it's time to benefit, we will not hear anything again, they will take it to individuals after telling us that we will hear from them soon. Later on, when we ask when we will hear that the project we are expecting, it is the same one that was given to someone else. We don't know why they come to us for enquiries but when they get all the information and understood everything and it's time to benefit, they*

> *will take it to an individual. This is what happens to us. There are some of us that even said they will fight them whenever they come to make enquiries because we are tired* [Niger, FGD, men].

Another FO in Anambra shared similar disappointment over what they perceived as empty promises.

> *The service provider's ability to convince us, made us join. We joined hoping that IFAD will support us, but it seems it was a mistake. The first year we joined, after our names were shortlisted for financial support and other farm support materials, of the names that were shortlisted, only but a few were given. Service providers are not helping matters, their attitude discourages us. Even when representatives visited from Abuja to enquire from us about IFAD and the benefits we get from them, we told them how we have been suffering and those benefits do not get to us* [Anambra, FGD, men].

A FO member explained why she is not motivated by her organizations, "*Because of the promise and fail, you might get tired of the group and leave…. Mostly from the government, because after promising chemicals and so on, and it's not given, some will be like 'I am not gaining anything rather than [losing my] money when I contribute [to the group],*[15] *so let me just sit home'"* [Anambra, KII, producer, woman]. However, she qualified that she only knows what her FO leader and secretary tell her and other FO members, and cannot confirm that VCDP makes the empty promises, "*You know our secretary and leader are the ones that do go for the meeting [with the service providers], so I don't know the people exactly, but all I know is that they call a meeting and pass information*" [Anambra, KII, producer, woman].

[15] Most FOs require their members to pay monthly dues; therefore, it does cost members to participate in the FO.

Collective Efficacy

Community and FO experiences of collective efficacy

Discussions of collective efficacy were centered around economic incentives and communal support to either achieve personal goals or overcome a personal hardship. Many FO members, men and women alike, were motivated to join FOs for economic reasons. Members of a men's FO in Niger explained how their FO supported members financially in achieving their personal goals, "*The group encourages and provides financial support for the progress and development of its members in their personal dealings*" and "*a member can access funds from the FO to help him progress in his individual farming activity*" [Niger, FGD, men]. For an example, "*the members help each other with money. If a member does not have money to farm, the group will lend him money to use for his farming, and then he will pay later, but without an interest attached to it"* [Niger, FGD, men].

Women-only FOs also support their members financially to achieve personal goals. A woman from Anambra reflected on why she joined her FO, describing a time when it helped her personally, "*In 2018, when it was time to apply fertilizer on my rice farm, I was financially down. I went to [my group] to lend me money to buy the fertilizer, which they did. And I paid back after harvest"* [Anambra, KII, FO leader, woman].

Groups also work together to provide mutual support to members, either financially or in other ways. One woman explained, "*If you need something, [the group members] will help you. Whenever there is something, they will invite you. They don't leave their members behind"* [Niger, KII, marketer, woman]. Many FO members also mention that members support one another when they face extreme personal hardship, like an illness or death in the family. "*We help members with monies when they are sick and also when a member has an occasion, and he*

needs money to finance it. All these are paid without an interest attached to it" [Niger, FGD, men].

There were also examples of youth FOs wanting to "*develop collectively and individually in farm production*" [Niger, FGD, youth, mixed]. In these organizations, they discussed wanting to work together to achieve similar individual goals, such as "*helping the community with classroom infrastructure"* and "*how to improve our farming"* and "*to be empowered in rice processing business, to be on our own"* [Niger, FGD, youth, mixed]. In this mixed-sex youth FO, young men worked as rice producers, who would give their rice to the young women, who processed the rice for profits to be shared amongst the organization members. All members worked together so that, "*men get more farm produce"* and "*women get more profits*" [Niger, FGD, youth, mixed].

Many participants found collective work to be more useful and effective than working individually, as they found combined skills, resources, and knowledge enables better negotiation, access to resources, and support systems. One man explained, "*The only thing I can say is that it helps us to get what we need collectively, whether money, inputs or the tractor we spoke about. It is easier to get these things as a group, because an individual cannot go to the government to request for something. But if you go as a cooperative, they'll listen to you better"* [Anambra, FGD, men]. A woman further explained the benefit of community support, "*I joined this group, because, for example, if you cultivate alone, you won't have enough money to cultivate your crop. But, if you belong to this group, anytime you need money, they'll give you a loan. Then after you pay, and again, when you're in need and run to any of your cooperative members for help, the person will help you"* [Anambra, FGD, women]. And a FO leader from Anambra explained how collective work is more efficient than individual work when it comes to farming:

"Yes, as a group, we might decide to work on our farms. The area covered by a group in a day is usually bigger than what could be done by just a person. So, as a group, we achieve more" [Anambra, KII, FO leader, woman]. Another explained, "*Yes, the rice processing, I cannot process 2-3 bags of paddy rice alone; but as a group, we can process even more in a day. As a group, we can process in large quantities, but as an individual, I cannot process in large quantities"* [Niger, KII, processor, woman].

Achieving common goals

The FO members and leaders discussed how their organizations collectively decided on goals and the ways in which they could work together to accomplish those goals. All groups, both women and men, indicated their decision-making processes were collective and every participating member had the opportunity and ability to contribute their opinion. Usually, the FO leader would present topics, and the members would discuss and vote on the decision. If there were major disagreements or a tie, the leader would make the final decision. Sometimes community elders would weigh in on decisions as well; within the community, they are the most respected voice. One mixed-sex youth FO described how most decisions are decided by a collective vote, unless there is disagreement, in which the elder members of the group intervene. "*Some elders are in the group and they are more influential. They normally have the most powerful say; members usually respect them because of their age, but then they are not in any way forcing others to obey"* [Niger, FGD, youth, mixed]. Final decisions in the women's organizations in Niger state were made by men, as men were typically appointed as either FO leaders or secretaries. This was not typically the case in Anambra state, where women served as the leaders or secretaries in women's groups.

Many types of group accomplishments were discussed; the goals and accomplishments were always aligned with the group's overall mission, which often included a community-oriented component. These accomplishments were typically categorized as overcoming challenges as a group, collective purchases that benefitted group members, developing collective strategies to increase incomes to support group activities, or a community development project, such as rebuilding a mosque or church. Examples of these community-oriented goals or accomplishments follow.

When flooding damaged a youth organization's crops, they collectively decided on a path forward, "*While trying to address the problem, the group resorted to changing the methods of farming; some members shifted from raining season to the dry season instead*" to ameliorate the problem [Niger, FGD, mixed]. One men's FO developed solutions to provide access to financing for community members while also generating an additional income to support their organization's activities, *"For instance, we decided to have a commercial mobile charging point where community members pay 20 naira*[16] *to charge their mobile phones, but members do not pay [to charge their phones]. [Prior], we called for a meeting and decided to buy a generator because a member was going to get married and needed a power supply. The group sat and decided to buy a generator. It is the same generator that we use to rent to community members for the commercial mobile phone charging center"* [Niger, FGD, men]. Another men's FO leveraged their collective skills to work together with the community at large to solve community challenges, "*At the community level, we had problems with electricity. We decided to join strength with the members of the community to obtain a 5000 watts transformer. We also renovated a bridge in the community"* [Niger, FGD, men].

[16] Approximately $0.05 USD.

Benefits from VCDP accrued by non-members

The larger community benefitted from the different FOs in various ways. In general, FO members felt their communities held positive views and goodwill towards them as an organization. They felt that they, as an organization, fostered this positive relationship with the community by providing a wide range of supports and benefits, which typically included activities such as increasing access to resources, information exchange, or developing infrastructure.

Community members benefit from information exchanged by FO members, who have received capacity building and production trainings from VCDP, and then disseminated new information amongst their broader community. A member of a youth FO in Niger explained, "*The group is benefiting not only its members but also by involving other community members to benefit from the services, such as the knowledge gain the group shares among the member community"* [Niger, FGD, youth, mixed]. They also share resources with community members, either by loaning or renting out materials. For example, a youth FO in Niger let community members use their thrashers; a rice processing FO in Niger gives rice in-kind or on credit to community members in need, "*For instance, when someone has a naming ceremony, we help each other by giving rice. Sometimes the person takes it on credit and pays back, and sometimes we decide to give it for free*" [Niger, KII, FO leader, woman]. Many FOs also provided examples of developing or fixing existing infrastructure in their community. One man in Niger said a major example of his FO achieving a group goal was, "*the building of a mosque in the community,"* which has benefitted the community at large [Niger, KII, producer, man].

Finally, many FOs also act as an informal source of credit to their broader community. Community members may request a loan from an FO and repay it with varying levels of interest, depending on the terms stipulated by each respective FO. For example, a women's group in

Anambra charges 50% interest on their loans to community members, but do not charge interest to FO members who want to take a loan. Members will receive the loan amount requested, whereas the FO will collectively evaluate non-members' request, typically reducing their requested amount, "*to enable her to repay"* [Anambra, FGD, women]. Another FO indicated they "*denied [outside applicants] access to the funds because they didn't have a reliable source of income and they didn't have a guarantor to stand for them*" [Niger, KII, producer, man]. Some FOs, like a men's processing group in Anambra, do not offer loans to community members, but do provide loans at 15% interest to registered group members who pay dues.

Program Impact

Fostering of collective efficacy under the VCDP

The VCDP specifically targeted FOs to improve collective capacity and efficacy in the rice or cassava value chains. In general, there was success in the VCDP facilitating and foster this capacity for FOs to better work together to achieve their goals, either individual or collective. The FOs in Niger state appeared to have more success in building collective efficacy to achieve their goals under the VCDP, particularly the youth-only FOs, whereas those in Anambra were still challenged in fostering collective efficacy.

The capacity building agents were tasked with building FO capacity by delivering trainings on leadership, financial management, and organizational practices. In Niger, a capacity building agent explained how 75% of the FOs under his area were considered "weak" before VCDP, because they were "*not having regular meetings, not having regular savings, not having the right leadership, not having sustainable structures, not having that sustainability platform to work on,"* among other criteria [Niger, KII, capacity building agent, man]. He reported that now,

after his third year working with these FOs, they are measured at "*75% stronger"* according to the VCDP [Niger, KII, capacity building agent, man].

Many beneficiaries included in this study described success as how they are now able to work together to achieve collective goals. "*There are no such cases of any serious disagreement so far, because the group members are working together to achieve the desired set goal"* [Niger, FGD, youth, mixed]. Other FOs achieved success by meeting their goals together. "*We have achieved a lot as a group. We started little, but now we can process 100-200 bags [of rice] and then we supply them to LGA. Before [VCDP], we used to process 10-20 bags and we hardly get buyers. But now within 2 weeks, we supply up to 200 bags*" [Niger, KII, processor, woman]. Another group explained how VCDP enabled them to work together better to achieve goals, "*IFAD has encouraged us to do these things, buying chairs and a generator, and drill a borehole, by advising us on how to save money and do the things that we need"* [Niger, FGD, youth, men].Beneficiaries also described why they felt working together as an organization enabled them to achieve their goals. *"Collective farming is better, because of the support from the group because we contribute money to support each other and benefit from each other. Another advantage of cooperative farming is that there is division of labor"* [Niger, FGD, men].

While the above results reveal success in some FOs fostering collective efficacy under VCDP, namely in Niger state, there remain challenges as several FO members discussed discord amongst FO members, a lack of collective goals, and the individualistic nature of certain members. A technical agent explained how these challenges persisted given the context, specifically in Anambra state,

> *Many of the groups are not…why I said many, not all of them, some groups are actually working hard, and they are very well organized. But the groups, cooperatives, many of them are still…there is more work to be done for them to be strong cooperatives or groups. They are not really working as groups…although it has to do with our thinking,*

> *you know in this part of our… as Igbos, many of us are individualistic, we don't want to work as a group. So, but what VCDP is doing is trying to let them change their mindsets regarding group work, because working as group gives you more power to achieve more. So, I think there is more work to be done in group strengthening* [Anambra, KII, technical agent, man].

While most beneficiaries trusted their fellow FO members, community members, or value chain actors, some expressed levels of distrust, which may influence how they engage in collective work. One explained, "*You know in every 12 there must be a Judas; I can say I can vouch for 75%"* [Anambra, KII, processor, man].

While several FOs do not work together as a collective unit to achieve collective goals, as envisioned by VCDP, they do indicate several reasons for joining together in order to leverage this collective unit for personal gain, such as for access to inputs or loans.

For example, some FOs exist only to use the organization to reap benefits from the government or VCDP that are earmarked for farmer's organizations and not individuals. These FOs do not work together at all but exist to reap collective benefits for personal gain or to achieve personal goals. A leader of such an FO explained, "*That modern life in Nigeria, people supposed to be in a cooperative society, that if one is alone, the person cannot get anything from the government"* [Anambra, KII, processor, man]. He said of his group, "*We go individually as members of the group. We don't go together as a group"* [Anambra, KII, processor, man]. Several women's producer FOs in Anambra join together as a producer groups to reap collective benefits (such as loans or access to government grants) for gain on their individual plots, but do not actually work together in producing their crop. One man further elaborated on the motivation to join an FO to reap individual benefits, such as financial gain and social status, "*I am happy to be a member of this FO because of the profit I stand to gain annually. People in the community*

look up to me because at times, during meetings, I donate like 2,000 naira[17] *for the welfare of the members"* [Niger, KII, producer, man].

Other FOs also do not work together but join as an organization to operate as an informal savings group as a benefit for individual members. These organizations pool the members' money and operate as an informal savings group, but they do not work together to achieve other collective goals. Members farm their individual plots and negotiate their own prices to sell their rice. For an example, in one Anambra FO, "*some people prefer to sell without processing, and some prefer to sell after processing. So, combining them is sometimes impossible*" [Anambra, FGD, men].

However, the VCDP did help to shift beneficiaries' perspectives in Anambra on working together compared to working individually, even if this has yet to translate into practice. A processor from Anambra explained, "*What I really learned [from VCDP] is to do things jointly. It helps a lot in business, in any business. One cannot do everything alone in a business circle. That is what I learned"* [Anambra, KII, processor, man].

Benefits and challenges for beneficiaries across value chain nodes

Beneficiaries at each node of the rice and cassava value chains (producer, processor, and marketer) benefitted from participation in VCDP, although some challenges still persist. While some benefits and challenges apply across value chain nodes, most are specific to the needs of beneficiaries at their respective value chain node.

First, access to suitable financing and credit options was identified as a major challenge for beneficiaries across all value chain nodes. Beneficiaries at each value chain node explained that money and lack of access to suitable credit options inhibited their ability to achieve success

[17] Approximately $5.13 USD.

in their respective activity. Most FOs operated as an informal source of credit or financing to FO members, and in some cases, to broader community members. However, these were provided in relatively small amounts compared to what FOs needed in order to succeed. For example, these loan amounts would not cover the cost of a milling machine for a processing FO. VCDP embedded a financial linkages component to facilitate access to financial institutions and suitable credit options to FO members, which aims to address this challenge directly. However, this component had not yet been rolled out at the time of data collection and could not be assessed in this study.[18]

VCDP did facilitate access to heavily subsidized inputs for participating FOs to make necessary upgrades for existing FO operations. A capacity building agent explained how VCDP facilitated these subsidized inputs and materials at each node,

> *For producers, a 50/50 matching grant, which is aimed so that after two years, one is able to approach a financial institution and get your own finance. But during these initial two years, you are entitled to a 50% grant. For example, you are to get 4 or 6 bags of fertilizer, that means you pay 50% of the worth of the fertilizer and VCDP pays 50%. For processors, they pay 30% for the equipment and VCDP pays 70%. But for marketers, we only link them to financial institutions; we build their capacity on how to improve their activities* [Niger, KII, capacity building agent, man].

Many FO members described utilizing and benefitting from these subsidized inputs. For one example, a youth FO did take the "*subsidized loan from IFAD…the group got a fertilizer loan by IFAD. Members had to pay 30%, IFAD 70%. Our group had access to credit from different sources, such as micro finance bank, Lakpo cooperatives, and other loans. But the group intentionally refused to collect these loans for fear of bank loan interest conditions"* [Niger, FGD, youth, mixed]. The VCDP subsidized inputs provided an alternative, suitable option for FOs to access necessary materials. However, as this was not an ongoing service

[18] February 2020.

provided by VCDP (it was only offered at the beginning of the program), FOs struggled to find access to suitable loans to finance their continued activities and needs.

Beneficiaries at the producer level benefitted from VCDP's subsidized access to inputs. One man speaking on behalf of his work as a processor, but who primarily earns a living through rice production explained, "*In 2015, we were given equipment for cultivating rice, which included rice, fertilizer, and pesticides. It helped to increase our rice yield"* [Anambra, KII, processor, man]. Producers also benefitted from the technical agents, who provided technical trainings on best practices to improve rice or cassava yield and quality, and capacity building agents, who provided organizational trainings on best management practices. "*Trainings received by the group is far beyond those received by other groups [in our community]. This group has gotten several trainings such as training on planning, record keeping, and new seedlings"* [Niger, FGD, youth, mixed]. A woman producer explained how the VCDP trainings taught her new skills,

> *There were things I didn't understand before I joined the group, but when I joined, I understood them. For example, how to sow the rice. Some people came and taught us that we have to sow the rice, wait for 2 weeks then transfer the plants to the actual farm. They also brought tapes and showed us how the height of the rice plant should be and when to transfer it to the farm. They also taught us how to use fertilizers and the right amount to use. I didn't know all of these before I joined the group* [Niger, KII, producer, woman].

A men's FO explained, "*that the trainings they received are the most important support that they have received, because the knowledge has helped them to farm and get a higher harvest"* [Niger, FGD, men].

Processors also benefited from VCDP's subsidized access to certain inputs, like drums and tools for cooking rice. However, some processor FOs had not yet received their subsidized equipment from VCDP. One processor explained, "*Because for the group to start processing, it*

is expensive… very, very [financially] intensive. Even we are planning this year if we can see…or any Bank of Industry to come and intervene for us for modern milling machine. The machine they are using there, which IFAD promised they will bring us, they have not. And that will be on loan" [Anambra, KII, processor, man].

Processors received technical trainings as well on best processing techniques for higher quality rice and cassava products. A women's rice processing FO explained how they not only learned better techniques and new knowledge from VCDP trainings, they were also able to link to new markets. "*IFAD helped us a lot because there is so much improvement in processing of rice. [We learned] how to process rice by washing, parboiling, and packaging; [we learned] how to identify good rice; and [we gained] even exposure to interact with people because FO members at times travel to other nearby villages to purchase the rice and process*" [Niger, FGD, women]. Another women's group in Niger explained the VCDP facilitated access to diverse markets, which has resulted in higher profits and more sales, "*Our organization has more connection with marketer than others outside VCDP… we have now more connections with the buyers and there was changes in more resources, such as high profit"* [Niger, FGD, women].

Marketers also benefit from VCDP through trainings on best business practices. One marketer explained, "*They also teach us how to save our money and keep records. Then how to save money after sales in the market. On marketing we should always keep records of sales"* [Niger, KII, marketer, man]. However, some marketers, particularly women in Niger, share gender-based challenges to carry out their marketing work. One woman explained,

> *We married women, it's not every place we can go to. Let's say I want to go to the market to buy rice, you will see the men everywhere. If you say, I escort my friend to go to so-and-so place, if they don't see a person follow, they will just push you, on the road. Where a man can enter, a woman can't enter. They will start asking you what you are looking for there. This certain area in [village redacted], only men are allowed to go there. Women can't go there and sometimes our men help us sell some rice there. Sometimes the price of rice will be*

high in that area, so our men will help carry our rice there to sell for us [Niger, KII, marketer, woman].

Evidence of and challenges to cross-node integration

While the VCDP encouraged FOs to focus on one value chain and at one node, the program fostered cross-node integration amongst and between FOs. Some FOs only operate at one value chain node and with only one crop; however, many FOs focus on several value chain nodes and multiple crops, including rice and cassava, as well as others. Yet, across all types of FOs, the results of this study suggest evidence of cross-node integration between producers, processors, and marketers because of FO participation in the VCDP.

Some producer FOs used to only produce rice or cassava for household consumption and would sell any surplus at a local market. Under VCDP, there is evidence of producer FOs working with processor groups to sell and upgrade their products, and also of men and women within the same FO and/or household finding ways to work together to generate income along the value chain. For example, men would produce the crop and sell to their wives to process the crop, increase its value, and generate higher incomes for the household. One technical agent observed, "*Before now, I always saw the cassava cultivation process as a man's job. But from the women, I found out that there is additional value that can be gotten from the cassava tubers…Cassava processed into tapioca, cassava flour, used in pastry making (chin chin, bread), cassava processed into garri, and so on*" [Niger, KII, technical agent, woman]. One cassava producer explained how he now works with his wife to generate additional incomes in the value chain,

I do farm the cassava here more. Then, after harvesting it, I will take it and sell it at [village redacted]. And that was how we now advise our wives to think of what they can do to get income.

So, they now bought a cassava blending machine, which the women now process there. The women buy from us and then they now process the cassava. Then we give the women a week to process the cassava and then sell it to the market and then bring us our money. We give them the cassava on credit. The thing is that we trust them, and they also trust us. As they always abide by the agreement, we reached [Niger, KII, producer, man].

Part of the agents' role to support marketers is to link them with producers and processors. "*I link the marketers to the producers. We link the buyers to the off-takers. There's a channel for that called AMIS; it's a marketing link that joins producers/farmers to buyers those that but in large quantities are called off-takers. For instance, if I produce large quantities of yam, I can come to AMIS to find a buyer (off-takers)"* [Niger, KII, technical agent, woman]. Several beneficiaries, producers and processors alike, explained that under the VCDP, their relationship with marketers improved. "*We used to take the rice to the market to sell it. Now, we just call [marketers] on the phone when we finish processing it, and they come and buy it. Our relationship with them has really improved"* [Niger, KII, producer, woman].

Across the qualitative data, FOs discuss their new or improved relationships with buyers or marketers as a result of participating in the VCDP. However, men's FOs discuss their relationship with buyers focused on trust, as many of them sell on credit. Whereas women's FOs discuss their relationship based on stronger negotiating skills, as many sell their products for immediate or cash payments. A women's producer FO in Anambra explained, "*The benefits are that we're no longer struggling, carrying our goods to the market. You can stay in your house, or market, and call [marketers] to come and take it and pay. Then this one is nothing like credit, like after processing, they'll come and pay [immediately]. But before now, some marketers will come, buy it on credit, and before they'll give you the money, you'll suffer. But with the coming of*

IFAD, you can now sell your farm produce, sell it immediately and collect your money and use your money to do whatever you want to do" [Anambra, FGD, women].

Men FOs also shared the improvements they experienced with marketers and buyers as a result of the VCDP. "*We give cassava to the processors to process, who then sell and pay us back afterwards. These same processors also give the processed cassava to the marketers on credit. When the marketers sell the goods, they then pay the processors and then the processors will also go back and pay us, the producers. We [all of us in the value chain] gain because of the credit we give to each other*" [Niger, FGD, men]. Challenges arise when the asking price is not met at one node of the value chain, which then has downstream effects on other actors. "*Sometimes we have a challenge in getting the money from goods we gave on credit, because the marketers end up not selling at the price that will enable them pay us back at the price we agreed before taking the processed goods. That also affects what the processors will give back to us. This offsets the arrangements made at the different levels of the value chain in giving and collecting goods on credit*" [Niger, FGD, men].

Infrastructure impact

Across all study areas, noticeable impacts of infrastructure development attributable to the VCDP were observed. Specifically, beneficiaries observed over the past five years (since 2015) the construction of new roads and improved quality of existing infrastructure, such as roads, boreholes, rice mills and processing centers, storage facilities, improved and new market stalls, new hospitals and schools, solar energy systems, among others. These infrastructure developments yielded positive impact for producers, processors, and marketers alike. Some of these projects were near completion, but not yet functional at the time of interview. "*They built the rice market too, though the rice market is yet to be functional*" [Anambra, KII, FO leader,

woman]. And many FOs worked with VCDP to build, refurbish, or install these infrastructures in their own community. A capacity building agent in Niger explained this process,

> *What VCDP does with infrastructure grants is give FOs a 90/10 matching grant. What I mean by 90/10 is that VCDP contributes 90% of the money and the farmer organization contributes 10%. Their 10% contribution is mostly in-kind and being in-kind is that they will assist the contractor in carrying out some minor work, things like supplying water to carry out their work. There has been a change in farmer organizations' access to infrastructure. Usually, there must be a request from the farmer organization, and we carry out an assessment to see whether the community actually needs that infrastructure they are requesting. It has affected them because things like boreholes, previously, they fetched water from the streams and other sources, which are not really hygienic. But with this, now they are having potable water. Some of them, some centers even charge a little token to maintain some of these infrastructures* [Niger, KII, capacity building agent, man].

Producers benefitted from improved infrastructure in various ways. New irrigation systems enabled rice producers to increase their production capacity. Because of water pumps provided by VCDP, "*even our rice cultivation has improved. We used to farm rice 3 times per year, but now we farm rice up to 4 times per year*" [Niger, KII, producer, woman]. They are also able to "*dig tube wells for irrigation during the dry season farming*" [Niger, KII, technical agent, woman]. When producers must bring their own product to market, the improved road networks have reduced transportation costs and risk of post-harvest losses incurred from transportation when traveling on poor quality roads. Additionally, the cost of transporting inputs onto the farm is also reduced. Producers are able to store their harvests at the new storage warehouses instead of their own homes.

Processors have benefited as well to improve their capacity in processing increased volumes and quality of their product. "*Some [new infrastructures] were built from the scratch. Like Katcha, the women were just processing individually; a complete processing center was built for them*" and now they process their rice together at the newly established rice mill [Niger,

KII, capacity building agent, man]. In Anambra, the VCDP facilitated the development of a rice processing mill, which has benefitted many of the rice processors in the region, who collectively own the mill. In order to buy into FO ownership of and use the mill, FOs must pay 35,000 naira[19] per FO. These new mills generate income for the FOs with ownership by charging users to process their rice there. "*[The new rice mills] have changed our lives; we have moved from having processed rice filled with stones to no stones at all. This was possible because of the new rice mills… they currently charge same amount as do privately owned mills. They ought to reduce the price for those under IFAD (like us)"* [Anambra, KII, producer, man]. The mills also produce higher quality and quantity of processed rice for sale. "*Previously, people that were used to doing just one or two bags, the capacity has improved too. Some of them make 1 ton now, or even more, because of these facilities"* [Niger, KII, capacity building agent, man]. Easier access to clean water also improves processors' ability to do their work as processing rice, in particular, requires large amounts of water. *"The water helps in rice parboiling. Before, you can fetch a gallon of water, it might take the whole day and one might end up not being able to soak the rice. Whereas now, even if you want to soak two drums of rice, all you need do is to fix the hose to the tap"* [Anambra, KII, FO leader, woman].

Marketers have also benefited from improved infrastructure in the study areas. The road networks have "*made it easier for the marketers to transport products"*, who often must travel between villages to link markets [Niger, KII, technical agent, man]. And the better road networks reduce the time required for marketers to purchase their products, "*The marketers can now come and buy from us and still leave the same day as a result of the good road. During the era of bad roads, they'll have to spend the night and even stay up to 3 more days before leaving"* [Anambra,

[19] Approximately $89.74 USD.

KII, FO leader, woman]. This is particularly essential for women marketers to save time in conducting paid activities, such as marketing, as women are often time poor and have many demands on their time due to household responsibilities that limit their ability to participate in paid labor activities.

The improved infrastructure has also benefitted men and women specifically, as well as improved overall household dynamics. In general, the infrastructure developments have had large effects on women's ability to participate in paid labor activities, as they either save women's time or facilitate linkages across value chains. For example, in one Niger village, a bridge had been destroyed. A producer explained how this had affected the women in his community's ability to process cassava. "*When the bridge was broken, our women suffered and had difficulty in carrying out their business activities, because their suppliers of cassava were not able to cross over with the products. So, at that point in time, women were only engaged in domestic chores. Since the repair of the bridge, businesses are now smoothly carried out and there have been smooth transportation of goods and people"* [Niger, KII, producer, man].

For another example, the installation of electric grids has saved households money, while boreholes have saved women, specifically, time. *"Since the restoration of the electricity, there's no need to waste money for fuel the generator. You can use the fridge now, unlike in the past, because the little generator cannot power the refrigerator. Also, there's water available, unlike when we used to go down to the stream and trek for hours to fetch one bucket before returning for a second bucket"* [Anambra, KII, FO leader, woman].

To further elaborate, the installation of boreholes has had large effects on women, particularly in that they drastically reduce the time women must spend in fetching water, which has helped to alleviate marital tensions as well as encourage husbands to assist their wives in

collecting water, further saving her time to spend on other activities. For example, the boreholes have increased water accessibility for both men and women. "*[The borehole] affects the relationship between husbands and wives, because the wife can get water easily and nearby to cook. She will not take so much time to do so while the husband is hungry. The tensions are thereby reduced"* [Niger, FGD, youth, men]. Another man explained, "*Before now, I do not fetch water for my wife from the river. But now I go to fetch water from the borehole, and we are both happy"* [Niger, FGD, youth, men]. The accessibility of water via the borehole also saves households money as well as has implications for hygiene. One woman explained that men used to buy water for his agricultural activities; now with the easily accessible borehole, "*The men have saved money from buying water and they have used the money for other things in the household, like buying food stuff"* [Niger, KII, processor, woman]. A woman also explained, "*We now relate well in the sense that, you go to the borehole, fetch water easily, and go home, and you drink good water. When you want to have a bath, you bathe with sound and clean water. The man may go out and the woman may be at home, use her motorcycle to go to the stream and fetch water"* [Anambra, FGD, women].

Women's empowerment and gender dynamics

The VCDP employed a gender-sensitive program design aimed to improve opportunities and capacities for women working in the rice and cassava value chains. While activities were not designed specifically to shift local concepts of empowerment or local gender dynamics, respondents broadly described impacts of program activities on women's empowerment.

As a result of program activities, there are more accessible employment opportunities for women, which have garnered husbands' support. The rice mills and processing activities have increased employment opportunities for women, who before had only done domestic chores.

Additionally, from VCDP trainings and support, such as subsidized inputs, women producers and processors have improved their yields, product quality, and linkages to better markets.

These improvements have enabled women to earn higher incomes and become more financially independent. "*It gives women more income. Apart from that, you know, when you are financially independent, it gives you opportunity to do other things. There is this lady, she is a rice processor. She has really benefitted and now she is standing on her own. She has a company that processes rice. She didn't have the company before the program, but now she has a company of her own*" [Niger State, KII, technical agent, woman].

Higher incomes for women have also shifted household dynamics. One woman explained, "*Yes, [VCDP] has affected my life at home. I can take decision on my own; I decide on how I spend my money. Before I became involve in rice processing, I used to ask my husband for money if I need money. But now I don't need to ask my husband for money that much because I have my own money"* [Niger, KII, processor, woman]. Higher incomes also enable women to hire agricultural labor to do tasks for them, saving women time to spend on other tasks while still earning income.

Other benefits have resulted in shifting mindsets around what women can accomplish, suggesting impacts for women's own intrinsic agency and men's willingness to participate in domestic labor. A member of a women's rice processing FO explained that since VCDP has provided support, "*she has changed her mind from full time housewife to a businesswoman"* [Niger, FGD, women]. Agents also observed shifting perspectives on gender norms amongst male beneficiaries. "*Well, for example, some of the men, they feel like there are some particular tasks they would not do in their homes, like sweeping, washing or cooking. But after this training, they feel if the woman is tired, because of the whole work she's doing in the farm or*

something, that he can actually help her out instead of waiting for her to come back from farm and then do all those things. The men were saying all these things with their own mouth." [Anambra, KII, technical agent, man]. However, it is important to note that the majority of beneficiaries included in this study had not received a gender-sensitization training or participated in any gender-focused activities, which should be considered for future iterations of this program and those like it.

4. DISCUSSION

The findings from this study suggest that, overall, the VCDP has benefitted target participants in several ways, such as improving collective efficacy of participating FOs, yields and product quality, market linkages, and access to improved resources, such as subsidized inputs or community infrastructure. However, despite general success, important challenges persist, mainly in the areas of weak governance, poor communication channels leading to unmet expectations, corruption, and delayed service delivery.

This study demonstrates that VCDP led to successful outcomes, such as building FO's collective efficacy through increase organizational and business skills, improving producer yields and processor quality, fostering value chain integration, improving community infrastructure, and facilitating women's empowerment, albeit indirectly. Beneficiaries were particularly encouraged by positive results observed from engaging in collective work, such as higher yields or group lending options. Beneficiaries, specifically producers and processers, liked the technical trainings and skill building opportunities, which they believe led them to improve their crop yields and quality of their processed goods. The VCDP has been able to effectively link producers and processors to marketers and to foster improved relationships between the two, whether through building trust and credit payment options, or facilitating better negotiating skills. Finally, infrastructure developments were lauded as tangible, positive community improvements that yielded benefits to smallholders across the value chain, benefited both men and women, and improved household dynamics by saving women's time in completing domestic chores, such as fetching water, thereby reducing household tensions and encouraging husbands to assist in this activity as well.

Despite evidence of general success, challenges persisted, specifically around FO members' frustration generated from poor communication between program delivery officers and FO leaders to members with regard to expectations, building FOs collective efficacy, delivering inputs in a timely manner, and facilitating linkages to suitable credit options. The evidence suggests some disagreements between agents, FO leaders, and FO members with regard to VCDP service delivery, equitable dissemination of inputs between FO leaders and members, and meeting expectations. Agents expressed frustration with specific (but not all) FOs that suffered from poor management and corruption, which directly hinders the ability to foster and facilitate FOs' collective efficacy. They noted that the VCDP and agents were working to identify cases of corruption among FOs, but many continue unnoticed. Additionally, several technical agents indicated they had difficult in gaining credibility amongst their targeted beneficiaries in disseminating new information or techniques for producing rice or cassava. FO leaders were frustrated with slow delivery of inputs and materials, such as processing machines promised from VCDP. FO members were generally discouraged by perceived corruption, perceived empty promises from VCDP over inputs and materials, and poor timing of input delivery that did not meet their needs.

The inclusion of such FOs hinders the ability of benefits (knowledge, skills, inputs) to reach all intended beneficiaries, and generates frustration amongst agents and FO members alike. It also hinders improvements on collective efficacy. It is also important to note that agents typically work only with the FO leader to disseminate inputs, which may enable cases of corruption to continue unnoticed. Sometimes agents attend FO meetings or make an effort to work together with all FO members; however, this depends on the area, the FO, and the agent, and is not always feasible giving agents' time and bandwidth limitations. The VCDP should

strengthen their monitoring of organizational structure and formation and encourage agents to work directly as best as possible with FO members to increase transparency. It is also important to note that while respondents reported incidences of corruption amongst FO leaders, it is not clear that this is the only source of possible corruption that hinders program success. In general, it is recommended that the VCDP institute anti-corruption measures to combat this challenge.

For all FO members and leaders, access to suitable credit and financing was a persistent challenge to achieving goals. The VCDP planned to implement new activities to address this challenge in 2020, which aim to directly link beneficiaries to suitable financial institutions, but they were not yet implemented by the time of data collection. This component should be assessed for effectiveness in future evaluations of this program, particularly its impact on women and men beneficiaries in accessing suitable financing options.

We see evidence that the VCDP also facilitated women's empowerment by increasing accessible opportunities for women to earn incomes, shift gender norms around the division of labor through gender sensitization trainings among service delivering agents and engender women's beliefs in their own capacity. However, while these positive results are promising, the qualitative findings highlighted discrimination against women service providing agents (particularly with regard to pregnancy expectations) and differences in social norms limiting women's capacity to participate in or expand opportunities across value chain nodes in both Niger and Anambra state. Future iterations of the program can strengthen its gender-specific components, include more explicit gender-focused aspects, and include context specific solutions. For example, in Niger state, where male agents are limited in their engagement with women beneficiaries, VCDP should address this issue by facilitating buy-in from women's husbands as well as employing more women agents to directly engage with women beneficiaries.

Agents also suggested improvements to the VCDP design to better address women's empowerment, including, but not limited to, targeting more women FOs to support and participate in the VCDP. One provider did not believe the VCDP went far enough to empower women, "*In fact, I believe the project can even do more in empowering the women of this community. They can take more women into training on seed production, processing, and marketing of rice and cassava*" [Niger, KII, technical agent, man]. Another thought that the program could increase the frequency and availability of trainings on financial literacy and business management, continue trainings on skill development, and facilitate linking women to credit facilities.

The gender sensitization trainings delivered by VCDP to service providing agents were effective in shifting norms around gender roles and division of labor within both the community and household. However, the VCDP did not deliver these trainings to everyone under the program structure. VCDP and similar programs should consider including mandatory gender-sensitization trainings for all beneficiaries to facilitate men's and women's acceptance of shifting gender norms in ways that may reduce women's domestic and time burdens and further support their empowerment. Suggested examples of gender-sensitization trainings the VCDP could adopt include IFAD's Household Methodologies (IFAD 2014) or Helen Keller International's Nurturing Connections Curriculum (HKI 2013).

Additionally, the gender-sensitization and technical trainings should also be designed with the potential to increase women's decision-making power and facilitate women's autonomy, among other indicators of empowerment. Such indicators measure levels of intrinsic and instrumental agency; indicators of women's intrinsic agency include factors such as autonomy in income and respect among household members, whereas those for instrumental agency include

factors such as input into productive decisions, asset ownership, control over income use, access to financial services, and workload balance (Malapit et al. 2020). Results from this study did not address gender dynamics of decision-making and women's autonomy over her own assets or income, or other noted indicators of empowerment. However, evidence from the literature (Forsythe et al. 2016) suggest women in Nigeria lacking full control over how they use their money, time, and assets, which are important aspects of women's empowerment. And evidence from studies in other contexts examining contributors to women's empowerment in value chain participation highlight the importance for programs to address the various aspects of women's intrinsic and instrumental agency in achieving empowerment (Malapit et al. 2020). The VCDP offers a strong platform for facilitating women's economic empowerment, however it could be strengthened to go further to engage both men and women in facilitating women's overall empowerment to identify and reduce contributors to women's disempowerment.

Recommendations for VCDP

In conclusion, we make some specific recommendations for strengthening the design and delivery of VCDP in future interations or strengthing similar programs delivered in Nigeria in the future. In terms of

general programming, the findings suggest it would be beneficial to:

- Increase engagement between agents and all FO members to increase transparency between VCDP and beneficiaries.
- Increase monitoring of FO organization and function.
- Directly link producers, processors, and marketers to financial institutions offering suitable credit options for men and women beneficiaries.
- Ensure delivery of inputs to FOs are timely and suitable to meet FOs' immediate needs.

- Strengthen the capacity building component of the VCDP to continue supporting FOs in meeting their collective goals.
- Implement effective anticorruption measures to ensure that all intended beneficiaries have access to program resources.

Specifically, in terms of the gender aspects of the program, the findings suggest that it would be beneficial to:

- Scale up and strengthen gender-sensitization trainings for men and women beneficiaries, as well as their household and community members.
- Deliver context specific solutions to enable all women beneficiaries to have equal access to agents and technical support in their respective value chain node.
- Increase targeting of women beneficiaries, including those participating in mixed-sex and sex disaggregated FOs to improve the frequency and availability of trainings for women to benefit from VCDP support
    - Continue skills and technical best practice trainings and integrate more trainings on financial literacy and business management for all beneficiaries.
- Continue to foster cross-node integration between value chain specific nodes, such that producer FOs can be better linked with processing FOs to improve product value across the value chain and generate incomes and employment opportunities for men and women.

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