

Unconditional Cash Transfers (UCT) in the DRC : Midline Results of a Pilot Study in an Artisanal Mining Zone in Maniema Province



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EDITORIAL

Unconditional Cash Transfers (UCT) in the DRC: Midline Results of a Pilot Study in an Artisanal Mining Zone in Maniema Province

Antwerp, June 2023

Front cover image: Improvement of the quality of housing in the UTC village. ©Rwothomio Kabandole (Eight)

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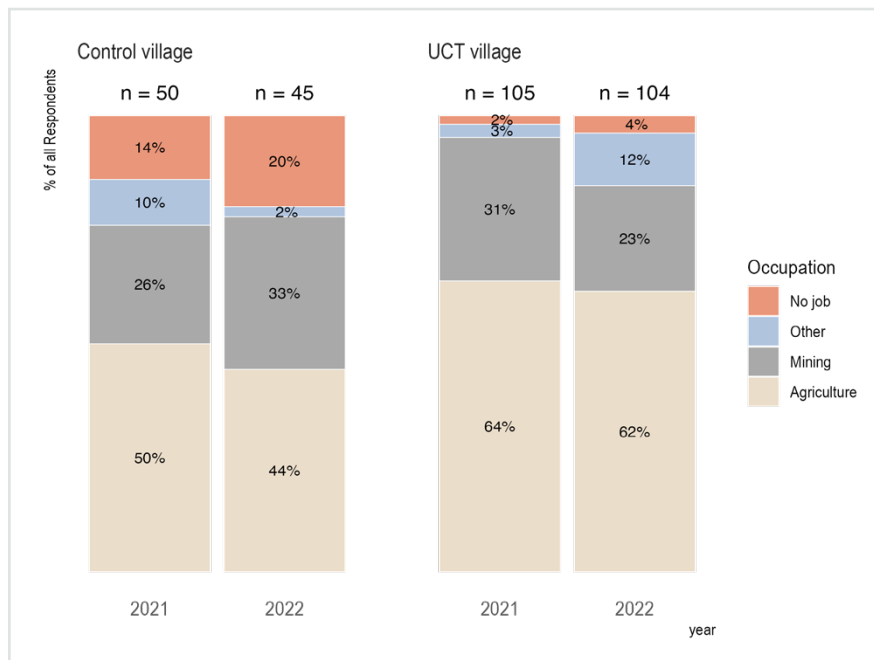
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EXECUTIVE SUMMARY

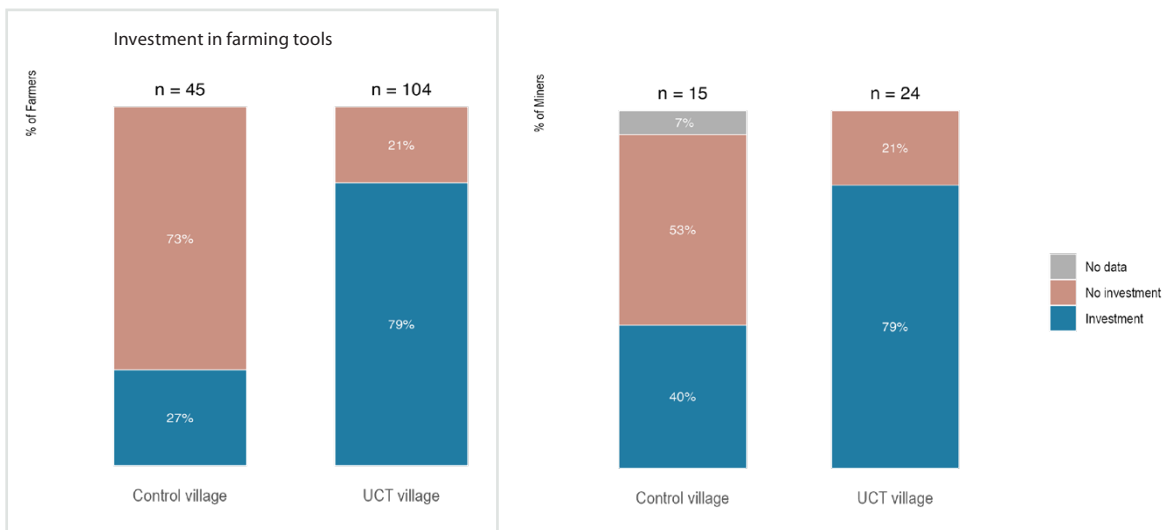
The Belgian non-profit organization Eight World, started in October 2021 a pilot project with Unconditional Cash Transfers (UCT) in a village in an artisanal mining zone in the territory of Pangji, in Maniema Province, the Democratic Republic of Congo (DRC). One year after the start of the UCT program, International Peace Information Service (IPIS) conducted a controlled midline study to monitor indicators related to the socio-economic, physical, and mental well-being of UCT recipients. IPIS assesses the emancipation and empowerment of the UCT recipients via a comparison between the UCT village and the Control village before (baseline) and after (midline) the launch of the UCT program. After one year of cash transfers, substantial changes were observed in the UCT village for several key indicators, compared to the Control village.

Variety of occupations and private entrepreneurship

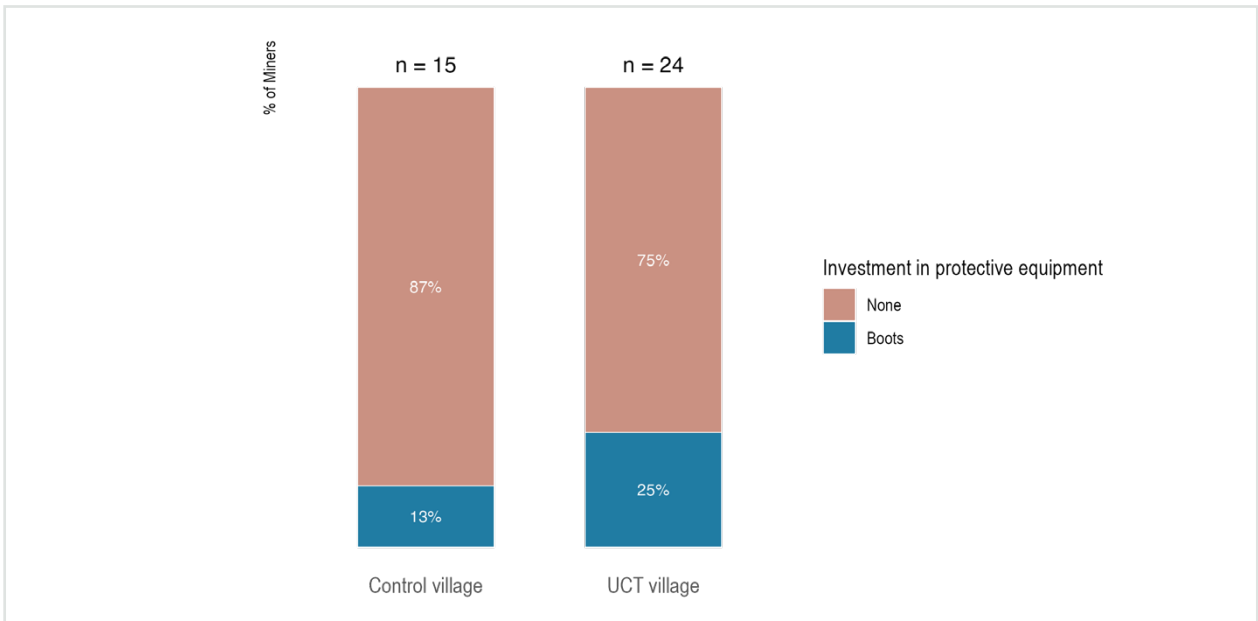
With fewer people working in the mine, the variety of professional occupations has improved and more people take on other jobs. Concomitantly, private entrepreneurship seems to be stimulated, resulting in an increase in small businesses. Moreover, compared to the control group, more UCT recipients have invested in professional mining and farming tools as well as in protective mining equipment.



Occupation variety.



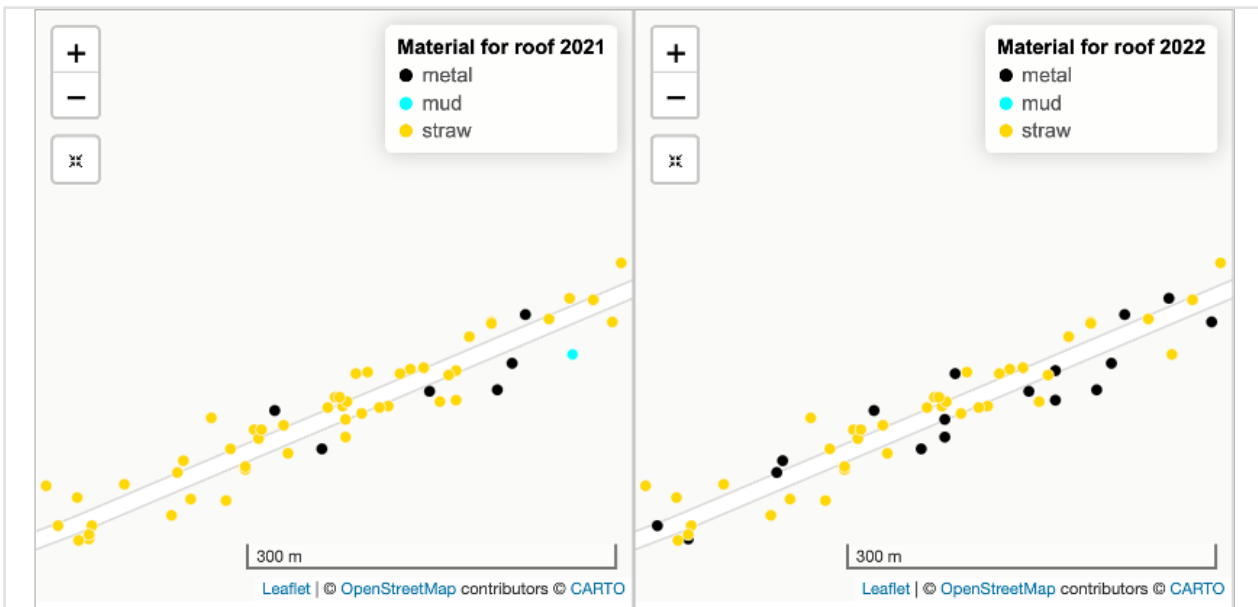
Investment in professional equipment.



Investment in professional equipment.

Improved quality of housing

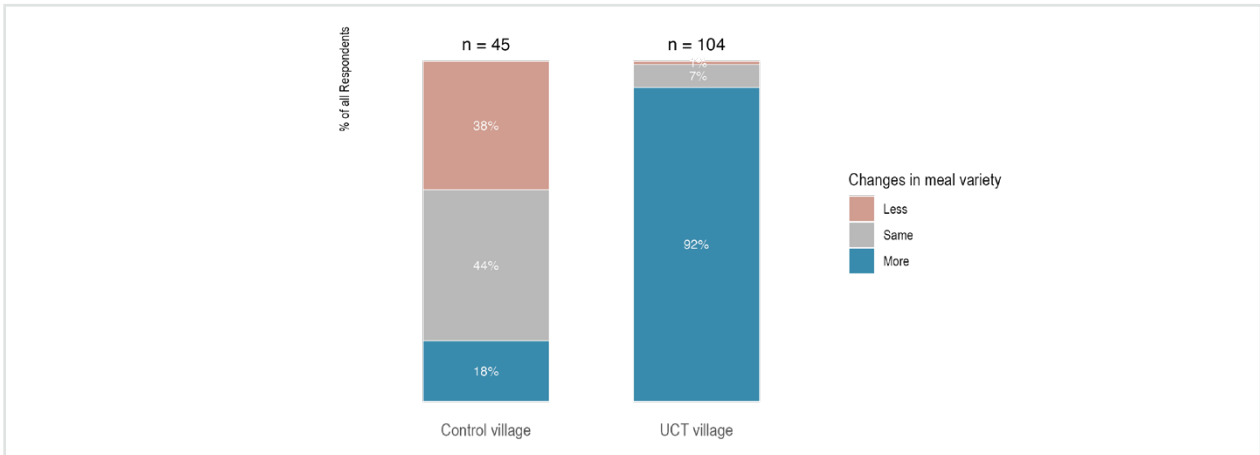
Quality of housing is an important poverty indicator. More than half of the UCT recipients have confirmed that they have invested in the improvement of their house (compared to 15.6% in the Control village). After one year of UCT, the number of households living in a house with a metal roof has substantially increased (from 6 to 17).



Households in the UCT village with a house with metal roof (black dots).

Improved food consumption and diet variety

At midline, more than 90.0% of UCT recipients assessed their diet as more varied compared to one year ago (18.0% only in the Control village). Moreover, the UCT village saw a sharp increase in the weekly spending on food (from 6,750 to 20,000 Fc according to the head of household).



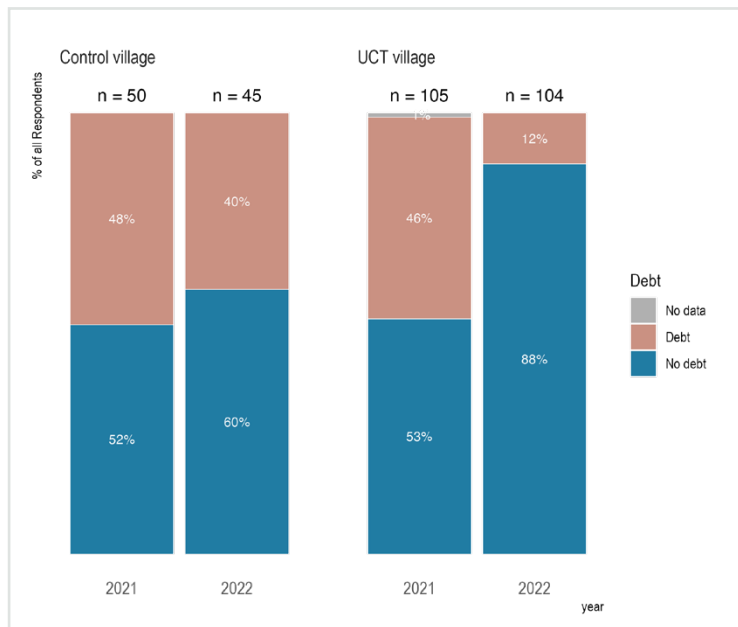
Self-assessment of diet variety.

More people with no debt

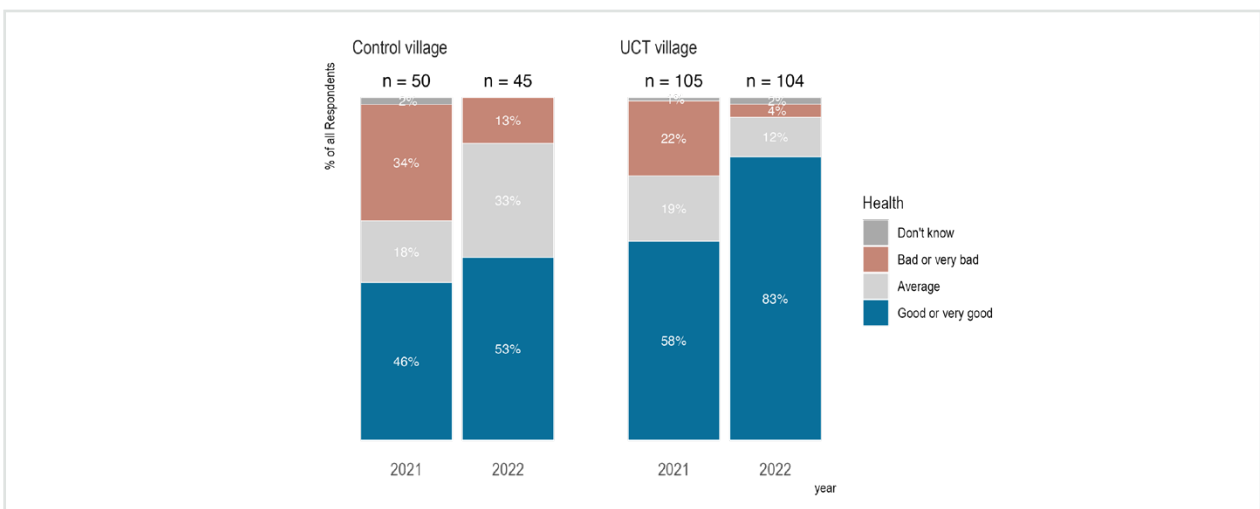
One year after baseline, the percentage of respondents admitting owing a debt has substantially decreased in the UCT village, but not in the Control village.

Improved health perception and ability to afford medication

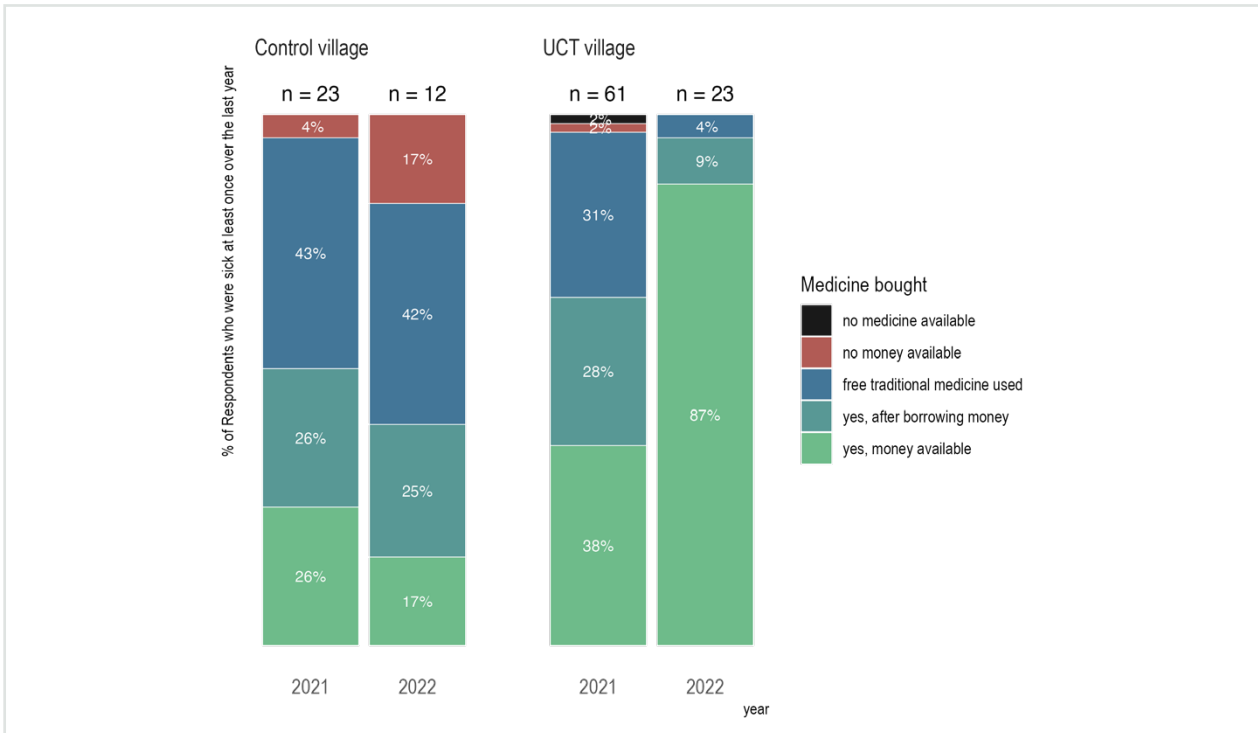
More people in the UCT village assessed their health as 'good' or 'very good', compared to the baseline, and the Control village. Moreover, a larger proportion of people in the UCT village who have been sick in the past year, confirmed that it had enough money to buy medication.



People owing a debt.



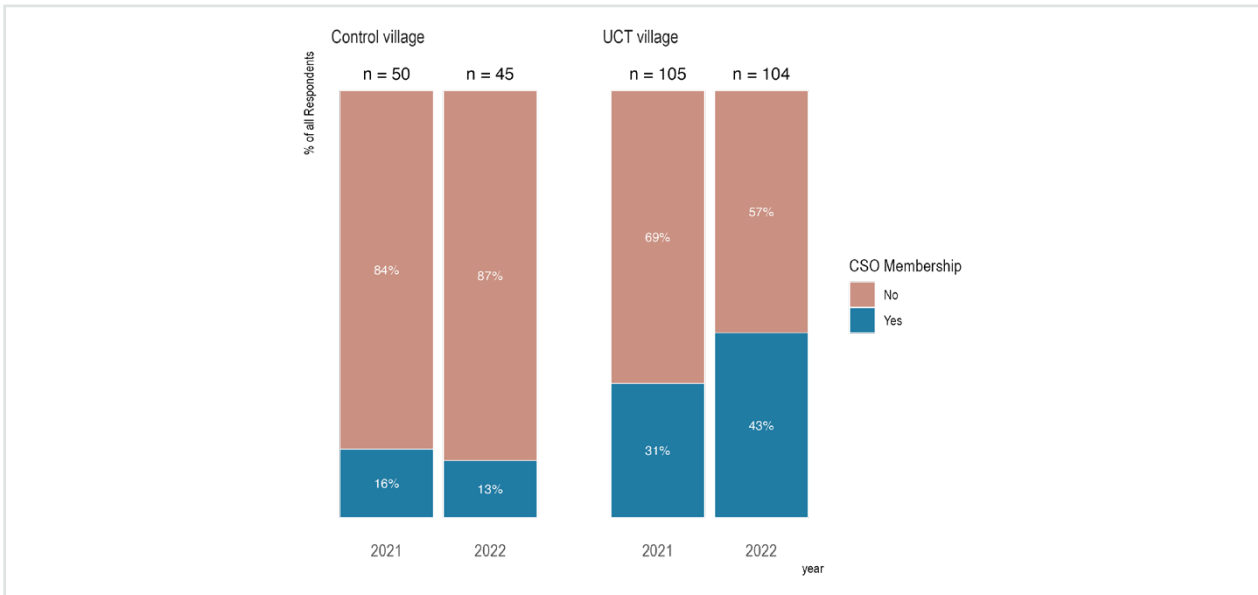
Health perception.



Ability to afford medication.

Increased participation in Civil Society Organisations (CSO)

More people in the UCT village participated in CSOs (mainly savings associations), compared to the baseline. Females did not contribute to this increase.



CSO participation.

Our results demonstrate a change for several key indicators in the UCT village one year after the start of the intervention, whereas such change did not occur in the Control village, or only to a lesser extent. These observations show evidence that the intervention has had a positive effect on the socio-economic well-being of UCT recipients in a village located in an artisanal mining zone of Maniema province.

1. INTRODUCTION

Almost 31% of the population Africa lives in severe multidimensional poverty, and 41% of the population lives on less than USD 1.90 per day (monetary poverty). The Democratic Republic of Congo (DRC) is particularly affected by poverty, with almost 37% of its population identified as severely multidimensionally poor ('severely' refers to a deprivation score of 50% or more), and about 77% of the population living on less than USD 1.90 per day.¹ Moreover, the DRC ranks 179th of 191 countries in the 2021 UNDP Human Development Index.²

Even though the DRC is one of the richest countries in the world in terms of mineral wealth (in 2011 DRC's untapped mineral reserves were estimated to be worth USD 24 trillion³), this wealth does not contribute to local development, and does not lift local artisanal and small-scale mining (ASM) communities out of poverty - for example, in Eastern Congo. The World Bank estimated in 2008 that there were between 500,000 and 2,000,000 active artisanal miners in the DRC, and that about 8 to 10 million people would depend directly or indirectly for their livelihood on ASM.⁴

In the provinces of North and South Kivu, estimates about people depending on ASM range from 1 to 1.75 million.⁵ Governmental and non-governmental initiatives to formalize the artisanal mining sector seem to have only limited (positive) impact on the working and living conditions of artisanal miners in Eastern Congo. International Peace Information Service (IPIS) estimated in 2019 that the income of artisanal miner households with one breadwinner in 3T (tin, tantalum, tungsten) mining did not cover costs of basic needs (based on a Minimum Expenditure Basket) in the mining areas of Itebero (North Kivu) and Nzibira (South Kivu).⁶ Not surprisingly, child labour is a persistent socio-economic problem in the artisanal mining sector in Eastern DRC, because many households need the extra income from their children's labour to make ends meet. This is also true in areas with 3T mines that are covered by traceability and due diligence programs such as *International Tin Supply Chain Initiative* (iTSCi), which aim to create responsible mineral supply chains, by addressing conflict financing, human rights abuses, and child labour. A recent study demonstrates that such programs did not eliminate child labour in artisanal mining in the provinces of Maniema and South Kivu.⁷

In recent years cash transfer programs have been rolled out in several countries across the world to fight poverty and to strengthen social protection, as a more straightforward alternative to interventions of the 'traditional' aid programs, the implementation of which is often complex and costly.⁸ The concept of cash transfers is simple: a small amount of money is transferred directly to the population on a regular and long-term base, aiming to improve the socio-economic well-being of poor households. There are two different approaches toward direct cash transfers: conditional (CCT) and unconditional cash transfers (UCT). CCTs are programs that transfer money to poor households on the condition that these households comply with agreements that pre-specify how the money should be spent (for example, households must use the cash to invest for the education of their children).⁹ UCT programs transfer money directly to recipients who are free to decide how to spend it, not constrained by pre-specified requirements.

Cash transfers are supposed to have an impact on poverty in general, but also on education, health, nutrition, child development, economic resilience, female empowerment, as well as mental well-being. Based on data from direct cash transfer programs around the world, Hanlon et al. (2010) conclude that

- 1 UNDP and OPHI, *Global Multidimensional Poverty Index 2022: Unpacking Deprivation Bundles to Reduce Multidimensional Poverty*, United Nations Development Programme (UNDP) and Oxford Poverty and Human Development Initiative (OPHI) Report, 2022, pp. 32-34; Multidimensional poverty Index (MPI) measures each person's deprivations across 10 indicators in three dimensions (health, education, standard of living).
- 2 UNDP, *Human Development Report 2021/2022. Uncertain Times, Unsettled Lives: Shaping our Future in a Transforming World*, New York, NY: United Nations Development Program, 2022, p. 289.
- 3 See <https://news.un.org/en/story/2011/10/390912-dr-congo-un-advises-prudent-use-abundant-resources-spur-development>.
- 4 World Bank, *Democratic Republic of Congo. Growth with Governance in the Mineral Sector*, Washington DC: World Bank Report, May 2008.
- 5 Geenen, S. and B. Radley, "In the face of reform: What future for ASM in the Eastern DRC?" *Futures*, 62 (2014), 58-66.
- 6 De Brier, G., A. Jorns, M. Geray, and A. Jaillon, *The Miner's Revenue and Basic Needs Study*, Antwerp: IPIS Report, March 2020, p. 49.
- 7 PRG/IPIS/SFR/ULula, *Evaluating Due Diligence Programs for Conflict Minerals: A Matched Analysis of 3T Mines*, Los Angeles and Antwerp, November 2020, p. 32; iTSCi is a private initiative of the International Tin Association (ITA).
- 8 Bastagli, F., et al., *Cash Transfers: What Does the Evidence Say?* London: Overseas Development Institute, July 2016.
- 9 Fiszbein, A. and N. Schady, *Conditional Cash Transfers: Reducing Present and Future Poverty*, Washington DC: World Bank Policy Report, 2009, pp. xii, 16.

(1) recipients use the money efficiently, (2) cash transfers reduce immediate poverty effectively, and (3) cash transfers have the potential to reduce long-term poverty by facilitating both economic and social development.¹⁰ Drawing on several impact studies Fiszbein and Schady summarize that CCTs have increased consumption levels among poor people; have protected households against the worst effects of unemployment and illness; have increased the bargaining power of women; have increased school enrolment among the poorest children while decreasing child labour; and have stimulated people to visit health providers. Evidence of the CCT impact on final outcomes in education and health (such as achievement and cognitive development, child height for age) is less conclusive.¹¹ Studies measuring the impact of CCTs on child labour show mixed results. A 2014 World Bank report confirms that CCTs can decrease child labour, or the number of hours weekly worked by children, while increasing school participation.¹² Del Carpio *et al.* demonstrate that CCT programs in Nicaragua, providing cash to rural households conditional on school attendance and health check-ups, reduced child labour for household chores and farm work, but increased it for commercial and retail activities, especially in those households which received an extra business grant.¹³

The effect of UCTs on the socio-economic, material and mental well-being, as well as on health outcomes and use of health facilities, has been evaluated in many empirical studies, including several ones in African countries. The 2014 World Bank report also discusses the impact of UCT programs on child labour in three countries (Ecuador, South Africa and Malawi), concluding that in general they tend to reduce children's participation in economic activities, although mixed results were observed in Malawi, where UCT lowered child labour outside the household, but seemed to have increased children's involvement in within-household tasks.¹⁴ A UCT program of the Pakistani government did reduce child labour in the medium to long run (5 years after the start of the programme), but not in the short-run (2 years after the start of the programme).¹⁵ Government UCT programs in Zambia increased consumption, food security and material well-being of rural households, as well as schooling of the children; they also strengthened people's economic capacity.¹⁶ Haushofer and Shapiro demonstrate that UCTs in rural Kenya increased consumption and savings of poor households in the short term (9 months after the start of the programme): more specifically, they observe increased food expenditures and investments in livestock and durable assets, such as metal roofs.¹⁷ Studies conducted in several African countries, measuring the UCT effect on health indicators, show mixed results: a strong positive impact in health-seeking when ill was observed in Malawi and in some age groups in Zambia and Ghana, but not in Zimbabwe, whereas the protective impact of UCTs on morbidity was rather limited in these countries.¹⁸ Another study evaluating a large-scale UCT program in Kenya, showed that cash transfers can improve mental health (e.g., reducing depressive syndromes) of young people in poor households.¹⁹ A study conducted in Malawi shows that UCTs contribute to improved energy access for ultra-poor people, in terms of ownership of improved cookstoves and lighting sources.²⁰ However, a recent World Bank paper is more nuanced about the long-term success of UCTs: while comparing UCTs with CCTs, the authors conclude that in the long term, short-

10 Hanlon, J., A. Barrientos and D. Hulme, *Just Give Money to the Poor: The Development Revolution from the Global South*. Sterling, VA: Kumarian Press, 2010.

11 Fiszbein, A. and N. Schady (2009), *op. cit.*, p. xii.

12 De Hoop, J. and F.C. Rosati, *Cash Transfers and Child Labor*, World Bank Policy Research Working Paper 6826, March 2014, pp. 10-11..

13 Del Carpio X.V., N.V. Loayza and T. Wada, "The impact of conditional cash transfers on the amount and type of child labor", *World Development*, 80 (2016), 33-47, p. 33.

14 De Hoop, J. and F.C. Rosati (2014), *op. cit.*, pp. 7-8.

15 Churchill, S.A., N. Iqbal, S. Nawaz and S.L. Yew, "Unconditional cash transfers, child labour and education: theory", *Journal of Economic Behavior and Organization*, 186 (2021), 437-457, p. 437.

16 Natali, L., *The Transformative Impacts of Unconditional Cash Transfers: Evidence from two government programs in Zambia*. Florence, Italy: UNICEF Office of Research - Innocenti Research Brief 2017-20, 2017.

17 Haushofer, J. and J. Shapiro, "The short-term impact of unconditional cash transfers to the poor: Experimental evidence from Kenya", *The Quarterly Journal of Economics*, 131, 4 (2016), 1973-2042, p. 2026.

18 Novignon, J., L. Prencipe, A. Molotsky, E. Valli, R. de Groot, C. Adamba and T. Palermo, "The impact of unconditional cash transfers on morbidity and health-seeking behaviour in Africa: Evidence from Ghana, Malawi, Zambia and Zimbabwe", *Health Policy and Planning*, 37 (2022), 607-623, p. 616.

19 Kilburn, K., H. Thirumurthy, C.T. Halpern, A. Pettifor and S. Handa, "Effects of a large-scale unconditional cash transfer program on mental health outcomes of young people in Kenya", *J. Adolesc. Health*, 58, 2 (2016), 223-229.

20 Aung, T., R. Bailis, T. Chilongo, A. Ghilardi, C. Jumbe and P. Jagger, "Energy access and the ultra-poor: Do unconditional social cash transfers close the energy access gap in Malawi?" *Energy for Sustainable Development*, 60 (2021), 102-112, p. 102.

term effects of UCTs may not be always sustained (except for lasting improvement in health and nutrition of children in beneficiary households).²¹

The Belgian non-profit organization started in 2017 a pilot project with UCT for two years, in rural Uganda, more specifically in the village of Busibi. Since then, seven more Ugandan villages have been added to the UCT program. The Institute of Development Policy (IOB) of the University of Antwerp, Belgium, conducted a controlled quantitative study, collecting data in Busibi and in a control village at three different time points: one year after the start of the programme (midline), two years after the start of the programme (endline), and two years after the end of the programme (sustainability follow-up).²² The most relevant findings of this study are:

- UCTs generated significant improvements in terms of quantity and variety of food consumption, at all stages.
- Large and sustained effects on life satisfaction (although the impact magnitude declined progressively over time).
- UCT boosted the creation of new businesses.
- Sustained positive effect on health status.
- Statistically significant long-term UCT effects on collective actions measured as demand for services (for women, not for men).
- No effect observed on mental and physical abuse of women.

2. UCT PILOT PROJECT IN THE DRC

Building on the experience gained with the Uganda project, Eight World started a pilot UCT project in an artisanal mining zone in eastern Democratic Republic of Congo (DRC) in October 2021, more specifically in the province of Maniema. To evaluate the potential short-term effects of the intervention on the well-being of the beneficiaries, International Peace Information Service (IPIS) has conducted a controlled midline study in close collaboration with Eight World, one year after the start of the UCT intervention. Two villages were selected in the territory of Pangani: a 'UCT village' and a 'Control village'. These villages are located near the commercial centre of Kalima (at approximately 105 km from the provincial capital Kindu), in a 3T mining zone that was entirely owned by the state-owned mining company *Société Aurifère du Kivu et du Maniema* (SAKIMA).²³ Several 3T mines in this zone are covered by the iTSCi traceability and due diligence program and were certified in the past as 'green' by joint validation teams (for example, the mining sites of Kimbala, Yuma, Salokwango, Nakenge, Yubuli, Bunza, Bengo and Kiyoo).²⁴

To transfer cash directly to individual beneficiaries, Eight World established a mobile money system in collaboration with the Congolese mobile phone provider M-PESA/Vodacom. Each adult (18 years and older) living in the UCT village has received a mobile phone with a sim card and receives via his/her phone USD 20 per month during a period of two years. In addition, each child living in the UCT village receives monthly USD 10 during the same period. The money for the child is transferred to the mobile phone of the mother, or, when the mother is absent, to another female caretaker (e.g., the grandmother or aunt). In case there is no female caretaker, the money goes to the male caretaker.

21 E. Artuc *et al.* *Toward Successful Development Policies. Insights from Research in Development Economics*. Washington DC: World Bank Policy Research Working Paper 9133, January 2020.

22 Grisolia, F., S. Dewachter and N. Holvoet, *Investigating the sustainability of cash transfer effects: the Busibi case*, Antwerp: IOB Analysis and Policy Brief N° 50, January 2023.

23 SAKIMA ceased industrial mining activities and allows ASM on its concessions. Recently, SAKIMA sold some concessions around Kalima to Kalima Mining Company SA.

24 Since 2012, mining sites should be validated as 'green' by a joint validation team including representatives of the Congolese government, local civil society organizations, international organizations in charge of traceability of minerals, and United Nations agencies. "Green" means that the absence of armed actors in the site has been confirmed, and that the site has been assessed for a range of other risks defined in the OECD Due Diligence Guidance (including child labor). Officially, only minerals from "green" sites can be exported.

3. METHODOLOGY

3.1. Controlled study

We opted for a controlled study to monitor several indicators related to the socio-economic, physical, and mental well-being of UCT recipients as well as to their emancipation and empowerment. A controlled study approach allows us to evaluate potential effects of an intervention (UCT) in the group of people receiving cash transfers (inhabitants of the UCT village), by monitoring specific indicators over time in comparison with the group of people not receiving UCT (the inhabitants of the Control village). The control group should be as similar as the UCT group (the population of the UCT village receiving cash transfers), and key differences between these groups need to be considered before evaluation of UCT. A comparison with a control group aims also to identify changes that may occur over time on a larger scale and irrespective of the UCT program.

A baseline survey was conducted in October 2021 in the UCT village and the Control village to measure a broad range of socio-economic indicators, two weeks before the start of the intervention (i.e., before the first cash transfer was performed in the UCT village).²⁵ Every single adult resident in the UCT village and the Control village, was included in this baseline survey. A midline survey was performed one year later, in October 2022. The endline assessment will be done in October 2023, followed by a follow-up survey two years after the end of the program.

The midline study aims to assess potential short-term effects on socio-economic, physical, and mental well-being, and on emancipation and empowerment of the population of the UCT village, in comparison with the control group.

3.2. Survey questionnaire

The baseline questionnaire was designed to measure several indicators of individual socio-economic, physical, and mental well-being, as well as indicators related to collective participation and independent decision making. The Organization for Economic Co-operation and Development (OECD) identifies three dimensions of well-being namely, (1) quality of life, (2) material living conditions, and (3) sustainability over time. *Material living conditions* include income and wealth (consumption possibilities), jobs and housing. *Quality of life* includes health, work and life balance, education, social connections, civic engagement, environmental quality, personal security, and subjective well-being.²⁶ The questionnaire covers most of the aspects discussed by OECD (2011), using open and closed-ended questions.²⁷

For the midline survey the same questionnaire was used to monitor the potential effect of the UCT on people's well-being one year after the start of the intervention, complemented with some additional quantitative and qualitative questions about investment behaviour in the previous year, and about the spending of the monthly transferred money. The questions related to investments were asked in both the UCT and Control village, while the questions on spendings using UCT money were only asked in the UCT village.

3.3. Data analysis

We performed frequency analysis on the answers of the participants for each survey item related to a range of socio-economic indicators. To assess the short-term effects of UCT on the UCT village, we compared answers to the same set of questions between baseline (October 2021) and midline (October 2022) surveys for both the UCT village and the Control village. In addition, we analysed the frequency of

25 Gobbers, E. and Muller, T. Unconditional Cash Transfers in the DRC: A Comparative Baseline Study in an Artisanal Mining Zone in Maniema Province, Antwerp: IPIS Report, January 2022.

26 OECD. *How is life? Measuring Well-being*. OECD Publishing, 2011.

27 Some questions included in this questionnaire, are inspired by the questionnaire developed by researchers of the IOB of the University of Antwerp, for the Busibi studies, see Grisolia, F., S. Dewachter and N. Holvoet (2023), op. cit.

answers to the additional quantitative questions related to investments and spendings. All analysis were performed using R (version 4.0.2).

The relatively small number of inhabitants in the Control village (N= 45) did not allow to apply more advanced statistical methods – such as a *matching strategy* between the inhabitants of the two villages – to isolate and quantify statistically the effect of UCT alone from other confounding variables, which represents a limit of our study. However, to better identify which differences could be solely attributed to UCT in this pilot study, we cross-checked the changes observed between baseline and midline in the UCT village with direct answers to a range of qualitative questions on the use of UCT money. Moreover, a comparison of the changes in the UCT village between baseline and midline with the evolution observed in the meantime in the Control village can provide more evidence towards the effects (or lack of) of UCT with regard to key indicators.

3.4. Selection of the UCT and Control villages

The UCT village (the village whose population participates in the UCT program) and the Control village were selected along several villages in a 3T mining zone in the territory of Pangí, in Maniema province. The Control village is located along the road connecting Kindu with Kalima, and the UCT village along the road connecting Kalima with the mineral trading center of Mukombe. This area was selected because it is not affected by armed conflicts, and it has enjoyed relative peace for many years now. The selection of the UCT and Control villages was based on several pre-specified conditions such as:

- A population of 150 adults or less
- A comparable proportion of children (less than 18 years old)
- A mixed population of miners and farmers
- Comparable proximity of and accessibility to urban commercial centers
- Comparable proximity of and accessibility to 3T mining sites

The main characteristics of the two villages are described in Table 1:

Table 1: General characteristics of UCT and Control village at baseline.²⁸

| Characteristics | UCT village | Control village |
|-------------------------------------|-----------------------------|-----------------------------------|
| Population (total) | 277 | 114 |
| Proportion children | 57.8% | 55.3% |
| Accessibility | Located on the main road | Located on the main road |
| Proximity of urban center | Yes | Yes |
| Proximity of 3T mines | Yes | Yes |
| Professional activities | Mining/agriculture | Mining/agriculture |
| Commercial activities | Sales agricultural products | Sales agricultural products |
| Electricity | Yes | Yes |
| School | Yes | No (but school in nearby village) |
| Price food products (in Fc): | | |
| salt | 1,500 Fc/unit | 2,000 Fc/unit |
| sugar | 1,000 Fc/unit | 3,000 Fc/unit |
| manioc flour | 200 Fc/unit | 300 Fc/unit |
| rice | 800 Fc/unit | 1,500 Fc/unit |
| palm oil | 1,200 Fc/unit | 1,500 Fc/unit |

²⁸ Gobbers, E. and Muller, T. (2022), op. cit., pp. 10-11.

The characteristics of both villages are relatively similar, although the population is larger in the UCT village, the Control village does not have a school (children are attending school in a nearby village), and the prices of food products seemed higher in the control village at baseline. Some of these prices changed substantially over time as was observed at midline monitoring (one year after the start of the program) (Table 2). The increase in food prices between 2021 and 2022 may be explained by the international crisis caused by the Russia-Ukraine war, which is known to have had a substantial impact on food and fuel prices in African countries.²⁹ Increases are also much sharper in the UCT village than in the Control village. As food prices were higher in the Control village at baseline, the price differences between the two villages are less pronounced in 2022 than in 2021.³⁰ However, it is unclear why, in the meantime, prices for rice and palm oil have slightly decreased in the Control village.

Table 2: Price comparison between 2021 and 2022 for food products.

| Food product | UCT village | | | Control village | | |
|---------------------|-----------------------|-----------------------|--------------|-----------------------|-----------------------|--------------|
| | 2021 (Fc per unit) | 2022 (Fc per unit) | % difference | 2021 (Fc per unit) | 2022 (Fc per unit) | % difference |
| Salt | 1,500 | 2,500 | + 67 | 2,000 | 2,500 | + 25 |
| Sugar | 1,000 | 4,500 | + 350 | 3,000 | 4,500 | + 50 |
| Manioc flour | 200 | 500 | + 150 | 300 | 400 | + 33 |
| Rice | 800 | 1,500 | + 88 | 1,500 | 1,200 | -20 |
| Palm oil | 1,200 | 1,500 | + 25 | 1,500 | 1,300 | -13 |
| Chicken | 15,000 | 25,000 | + 67 | - | 20,000 | - |



Cassiterite.

29 UNDP, The Impact of the War in Ukraine on Sustainable Development in Africa, Regional Bureau for Africa, United Nations Development Program, May 2022.

30 These higher prices in the Control village at baseline, could be explained by the fact that some food stuffs can only be bought from travelling vendors passing through the village.

4. RESULTS

4.1. Baseline study

The results of the baseline study conducted in October 2021 show that the populations of the two villages are in general comparable: Multivariate Correspondence Analysis (MCA) based on the baseline data, demonstrates that the statistical profile of correspondents was similar in both villages relative to key socio-economic indicators.³¹ We however reported differences for several indicators, including household composition, education level of adults, proportion of children combining school and work, proportion of households with at least one miner, possession of consumer goods, health perception and medicine spending, safety feeling, number of meals per day, CSO membership, and independent decision-making.

We also noticed differences between male and female adults for several variables, including education level, type of employment, owing a debt, health perception and illness (mainly in the Control village), safety feeling, and civic engagement (mainly in the Control village). Finally, in the UCT village and/or the Control village, the baseline data also revealed statistical relationships between specific variables, including gender and education, health perception and education, and gender and health perception.

4.2. Demographics

The number of adult survey respondents is slightly lower in 2022, compared to 2021 baseline, in both the UCT village and the Control village (from 117 to 104, and from 50 to 45, respectively). More importantly, compared to the baseline study, six households in the UCT village were omitted from this midline study due to absence or data entry errors³². Consequently, the total number of adults, children, and households differ slightly from the figures reported in the baseline study (Table 3).

Table 3: Population characteristics in the 2022 midline analysis.

| | UCT village | Control village |
|---------------------------------------|-------------|-----------------|
| Total population in the study | 244 | 108 |
| Number of adults | 104 (42.6%) | 45 (41.7%) |
| Number of children (< 18 y) | 140 (57.4%) | 63 (58.3%) |
| Number of households | 58 | 18 |

Demographic data of the populations in both villages is reported as follows:

- At the **individual level (adults)**, age, gender, marital status, education level, and employment were analysed (Table 4).
- At the **individual level (gender-disaggregated)**, education level and employment were analysed (Table 5).
- At the **household level**, number of adults and children, the highest level of education of adults, and types of employment of adults, were analysed (Table 7).

The total population in the UCT village is more than double the population in the Control village, but the ratio adults/children is highly similar in both villages.

Looking into the composition of households, a higher proportion of large households (with 7 and more members) is present in the Control village, compared to the UCT village (33.4% versus 13.8%).

31 Gobbers, E. and Muller, T. (2022), op. cit., pp. 39-40.

32 Members of five households were temporarily absent during the survey period for different reasons (bereavement, seasonal agricultural work); one household was omitted from analysis because of data entry errors.

Moreover, the proportion of households with four and more adults is also higher in the Control village (22.3% compared to 6.9% in the UCT village), as well as the proportion of households with four and more children (44.4% compared to 27.6% in the UCT village). The proportion of one-adult households in the UCT village is more than three times the proportion in the Control village (36.2% in the UCT village, compared to 11.1% in the Control village).

Table 4: General demographics of surveyed populations in the 2022 midline analysis.

| | UCT village (N = 104) | Control village (N = 45) |
|------------------------------|-----------------------|--------------------------|
| Average age (in year) | 37.2 | 36.8 |
| Gender (number/%) | | |
| • <i>male adults</i> | 46 (44.2%) | 20 (44.4%) |
| • <i>female adults</i> | 58 (55.8%) | 25 (55.6%) |
| Marital status | | |
| • <i>married</i> | 77 (74.0%) | 35 (77.8%) |
| • <i>not married</i> | 7 (6.7%) | 5 (11.1%) |
| • <i>divorced</i> | 9 (8.7%) | 2 (4.4%) |
| • <i>widow(er)</i> | 11 (10.6%) | 3 (6.7%) |
| Education | | |
| • <i>none</i> | 16 (15.4%) | 14 (31.1%) |
| • <i>primary</i> | 37 (35.6%) | 16 (35.6%) |
| • <i>secondary</i> | 40 (38.5%) | 13 (28.9%) |
| • <i>tertiary</i> | 11 (10.6%) | 2 (4.4%) |
| Employed (yes) | 100 (96.2%) | 36 (80.0%) |

The proportion of low-educated (i.e., no education or only primary school) villagers is higher in the Control village (66.7%) than in the UCT village (51.0%), with the percentage of people without any education, double as high. However, the proportion of households with at least one member who received at least secondary education is comparable in both villages (67.2% of or 39 out of 58 households in the UCT village, and 66.7% or 12 out of 18 households in the Control village). Conversely, the employment rate is higher in the UCT village, compared to the Control village (96.2% and 80.0%, respectively), which is comparable to the baseline situation with 98.1% in the UCT village and 86.0% in the Control village.

Table 5: Gender-disaggregated demographics in the 2022 midline analysis.

| | UCT village | | Control village | |
|-------------------------|------------------|--------------------|------------------|--------------------|
| | Male (n = 46) | Female (n = 58) | Male (n = 20) | Female (n = 25) |
| Education: | | | | |
| • <i>none</i> | 2 (4.3%) | 14 (24.1%) | 2 (10.0%) | 12 (48.0%) |
| • <i>primary</i> | 11 (23.9%) | 26 (44.8%) | 9 (45.0%) | 7 (28.0%) |
| • <i>secondary</i> | 22 (47.8%) | 18 (31.0%) | 8 (40.0%) | 5 (20.0%) |
| • <i>tertiary</i> | 11 (23.9%) | 0 (0.0%) | 1 (5.0%) | 1 (4.0%) |
| Employment (yes) | 44 (95.7%) | 56 (96.6%) | 17 (85.0%) | 19 (76.0%) |

The data confirm gender inequality evidence from the literature³³ (Table 5): in both villages, we observed a higher percentage of female inhabitants who received no education or who attended primary school only (68.9% of female compared to 28.3% of males in the UCT village; 76.0% of women compared to

33 See UNDP Gender Inequality Index (GII) (2015-2019) (<http://hdr.undp.org/en/content/gender-inequality-index-gii>)

55.0% of males in the Control village) (Figure 1). Remarkably, the proportion of low-educated men in the Control village was almost twice as large as in the UCT village. The proportion of employed female respondents was lower in the Control village (76.0%) than in the UCT village (96.6%), which is comparable with the baseline situation.

4.3. Potential effect of UCT on occupational activities and entrepreneurship

The UCT and the Control village have populations which are mainly composed of farmers and miners, with farming being the predominant occupation in both villages. The employment rate at baseline was very high (about 98.1% and 86.0% in the UCT village and the Control village, respectively), and was still high one year later, although the rate decreased slightly in the Control village compared to the previous year (96.2% and 80.0%, respectively) (Table 4). The main reasons for not having a job were retirement, medical condition and studying.

Table 6: Employment and entrepreneurship at baseline and after one year of UCT.

| Employment | UCT village | | Control village | |
|---|-----------------------|----------------------|----------------------|---------------------|
| | Baseline (N = 105) | Midline (N = 104) | Baseline (N = 50) | Midline (N = 45) |
| Artisanal mining | 33 (31.4%) | 24 (23.1%) | 13 (26.0%) | 15 (33.3%) |
| Agriculture* | 67 (63.8%) | 64 (61.5%) | 25 (50.0%) | 20 (44.4%) |
| Other job** | 3 (2.9%) | 12 (12.0%) | 5 (10.0%) | 1 (2.2%) |
| Combining mining with other job*** | 29 (27.6%) | 22 (21.2%) | 8 (16.0%) | 10 (22.2%) |
| Combining agriculture with other job**** | 1 (1.0%) | 5 (4.8%) | 1 (2.0%) | 0 (0.0%) |
| Own business***** | 15 (14.3%) | 20 (19.2%) | 7 (14.0%) | 3 (6.7%) |

* Some combine farming with another job such as taxi driver, trader, or teacher (school, kindergarten), but mentioned 'farming' first.

** Trader, but also teacher (school, kindergarten), taxi driver, or public servant; some respondents reported 'agriculture' in combination with 'non-mining, non-agricultural job' as their primary occupation.

*** Mainly agriculture

**** in combination with teacher, trader, taxi driver, preacher

***** Several people started a business in combination with a mining or farming job

Comparing the findings of the baseline with those of the 2022 midline survey (Table 6), we observe that:

- The number of adult miners has decreased in the UCT village from 33 to 24 adults, a difference of 8.3 percentage points (pp), whereas it has slightly increased in the Control village from 13 to 15 adults (Figure 1).
- Concomitantly, the number of adults performing other jobs (i.e., a non-mining, non-agricultural profession only) has clearly increased in the UCT village (from 3 to 12 adults, a difference of 9.1 pp), whereas it has decreased in the Control village (from 5 to 1 adult, a difference of 7.8 pp).
- The same trend exists about the number of villagers who confirmed that they have their own business (a shop, restaurant, or other form of private business), with an increase from 15 to 20 adults in UCT village, whereas it decreased from 7 to 3 adults in the Control village.

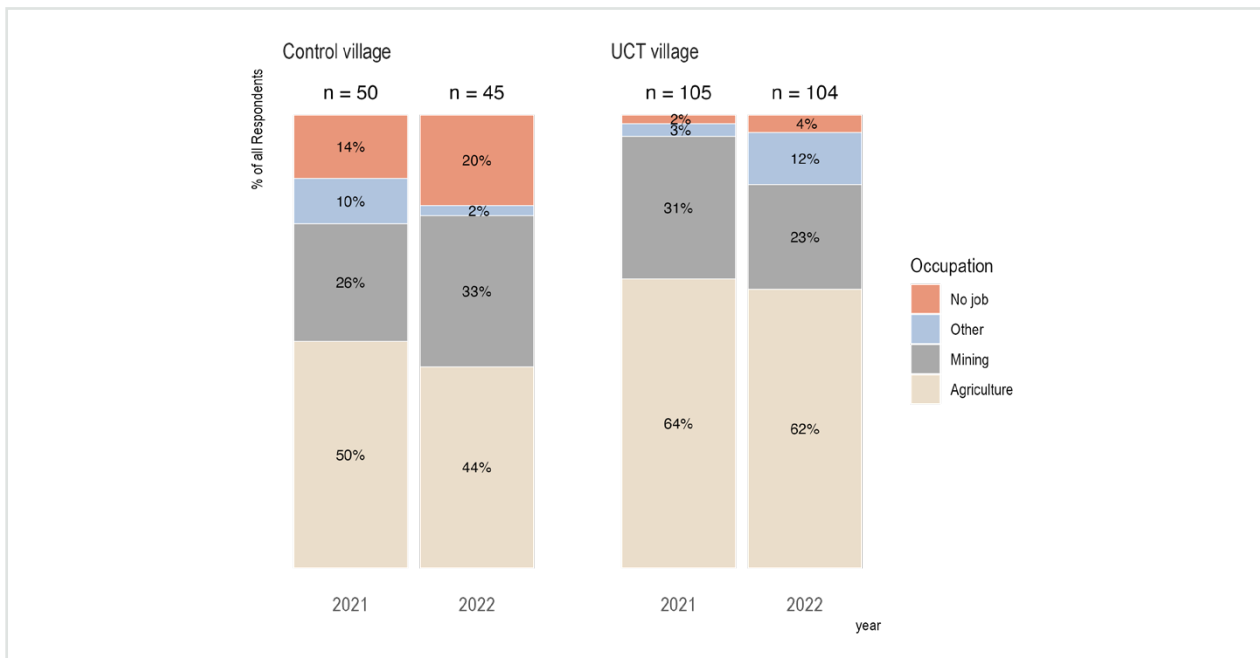


Figure 1: Occupation variety at baseline and after one year of UCT.

The data suggest that UCT improves the variety of occupations, which is associated with a decreasing number of people working in an artisanal mine. In the meantime, UCT seems to stimulate entrepreneurship and the start-up of new small businesses (Figure 5). Twelve UCT recipients (members of seven different households) have indeed explained that they used, or are saving, the UCT money to buy a motorbike to start a taxi-business, while another habitant has confirmed having injected the UCT money in an existing food shop (at baseline most of the reported businesses were small food and household goods shops).

Analysis of employment at the individual and household levels, confirms that agriculture is the dominant occupational activity in both villages, even more so because many miners have reported 'agriculture' as their secondary occupation (Table 6 and 7). Interestingly, more people in the UCT village confirmed having invested in the past year in agricultural tools (such as hoes and machetes), than in the Control village (78.8% and 26.6% of respondents, respectively) (Figure 2).

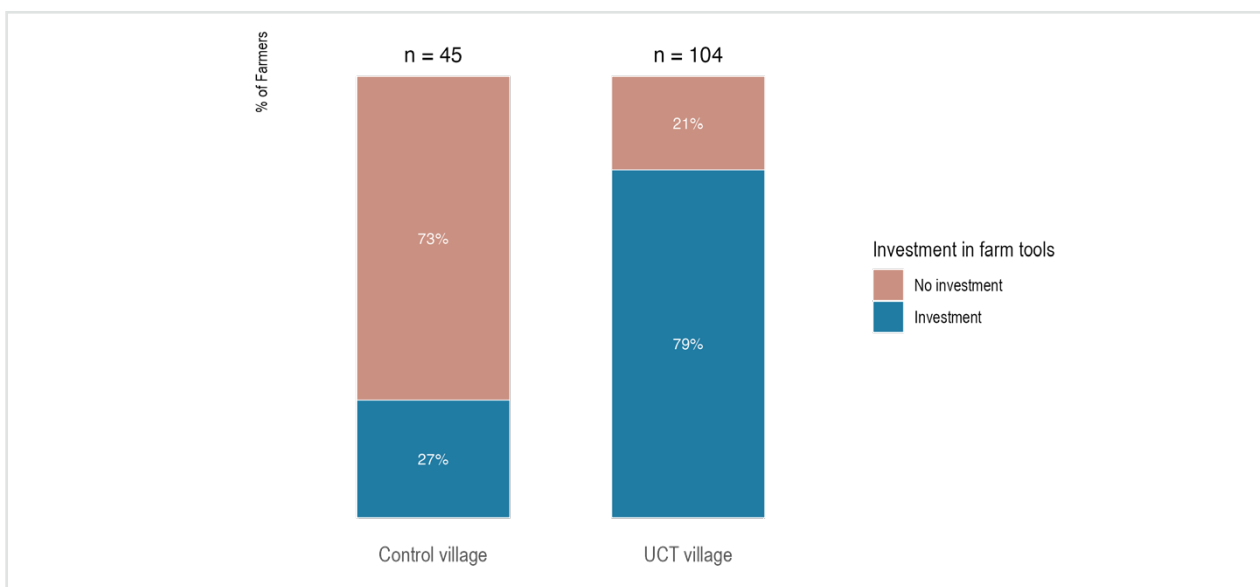


Figure 2: Investment in farming tools at 2022 midline analysis.

Table 7: Employment at household level at baseline and after one year of UCT.

| Households with: | UCT village | | Control village | |
|--------------------------------------|----------------------|---------------------|----------------------|---------------------|
| | Baseline (N = 58) | Midline (N = 58) | Baseline (N = 18) | Midline (N = 18) |
| Presence of miner | 30 (51.7%) | 23 (39.7%) | 12 (66.7%) | 12 (66.7%) |
| Presence of farmer | 54 (93.1%) | 45 (77.6%) | 16 (88.9%) | 16 (88.9%) |
| Presence of non-mining, non-agri job | 3 (5.2%) | 12 (20.7%) | 4 (22.2%) | 1 (5.6%) |
| Own business | 11 (19.0%) | 15 (25.9%) | 7 (38.9%) | 3 (16.7%) |

The observations at the individual level are confirmed by the data at household level: comparing the baseline with the findings of the 2022 midline survey, the proportion of households with at least one miner has decreased in the UCT village from 30 to 23 households (a difference of 12 pp), whereas there was no change in the Control village (the same applies to households with at least one farmer); we notice a strong increase in the proportion of households with at least one member doing a non-mining, non-agricultural job, in the UCT village from 3 to 12 households (15.5 pp), whereas we observed a decrease in the Control village (from 5 households to 1). Concomitantly, proportionally more households in the UCT village have their own business compared to the baseline (from 11 to 15 households), whereas the inverse is true in the Control village (from 7 to 3 households).

Analysis of gender-disaggregated data regarding employment, reveals that a clear gender division of labour exists in both villages, where most males worked in the mine, and most females in agriculture (Table 8, Figure 3). In the UCT village, none of the female habitants worked in the mine.

Table 8: Gender-disaggregated employment in the 2022 midline analysis.

| Employment | UCT village | | Control village | |
|------------------|------------------|--------------------|------------------|--------------------|
| | Male (n = 46) | Female (n = 58) | Male (n = 20) | Female (n = 25) |
| Artisanal mining | 24 (52.2%) | 0 (0.0%) | 12 (60.0%) | 3 (12.0%) |
| Agriculture | 18 (39.1%) | 46 (79.3%) | 4 (20.0%) | 16 (64.0%) |

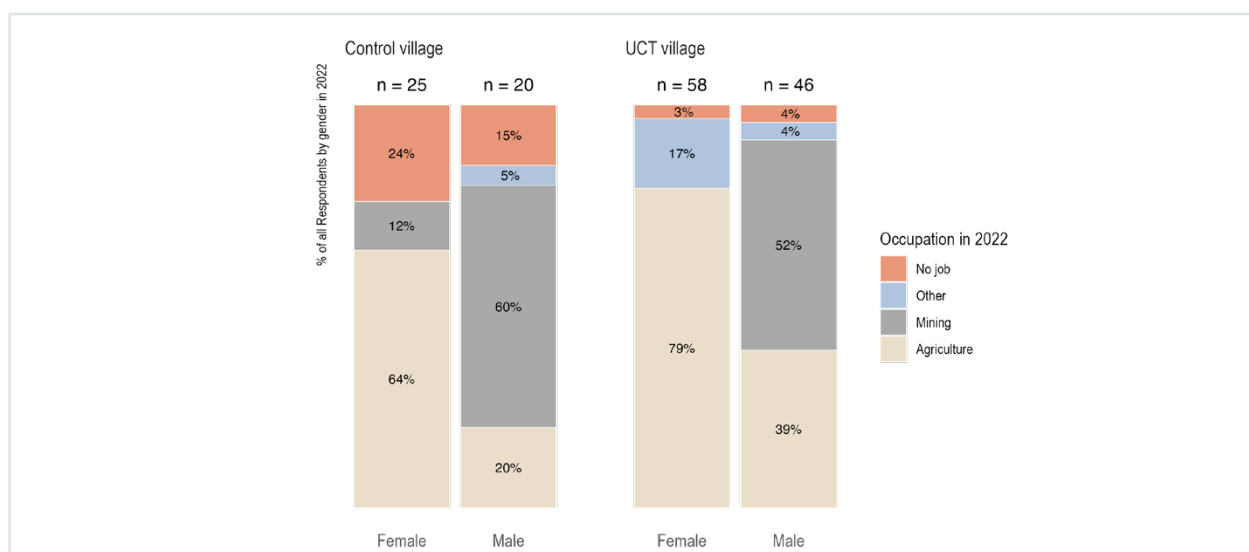


Figure 3: Gender-disaggregated employment in the 2022 midline analysis.

4.3.1. Artisanal mining

Not only the number of miners in the UCT village has decreased one year after the start of the intervention (Table 6), also the worktime per week seems slightly reduced. Between 2021 and 2022, the average number of days per week that artisanal miners work in the mine has decreased from 4.5 to 3.7 days in the UCT village, whereas it remained stable in the Control village (Table 9).

Although many miners in both villages did not use protective equipment while working in the mine, more miners in the UCT village than in the Control village, have invested in protective mining equipment in the past year (those who confirmed using or having invested in protective gear, referred only to 'boots') with 25% (6 out of 24 miners) and 13% (2 out of 15) of the miners, respectively (Figure 4).

Likewise, proportionally more people have invested in a variety of mining tools in the UCT village during the past year (such as spades, crowbars, and pickaxes), compared to the Control village (where miners mainly invested in new spades) with 79% (19 out of 24) and 40% (6 out of 15) of the miners, respectively (Figure 5).

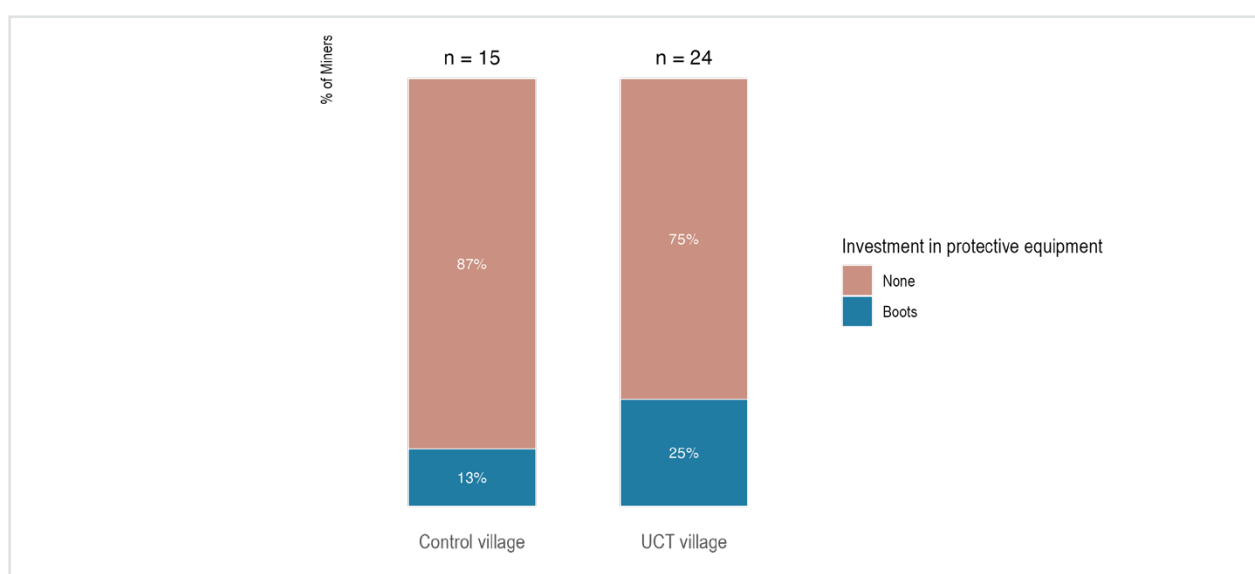


Figure 4: Investment in protective mining gear in the 2022 midline analysis.

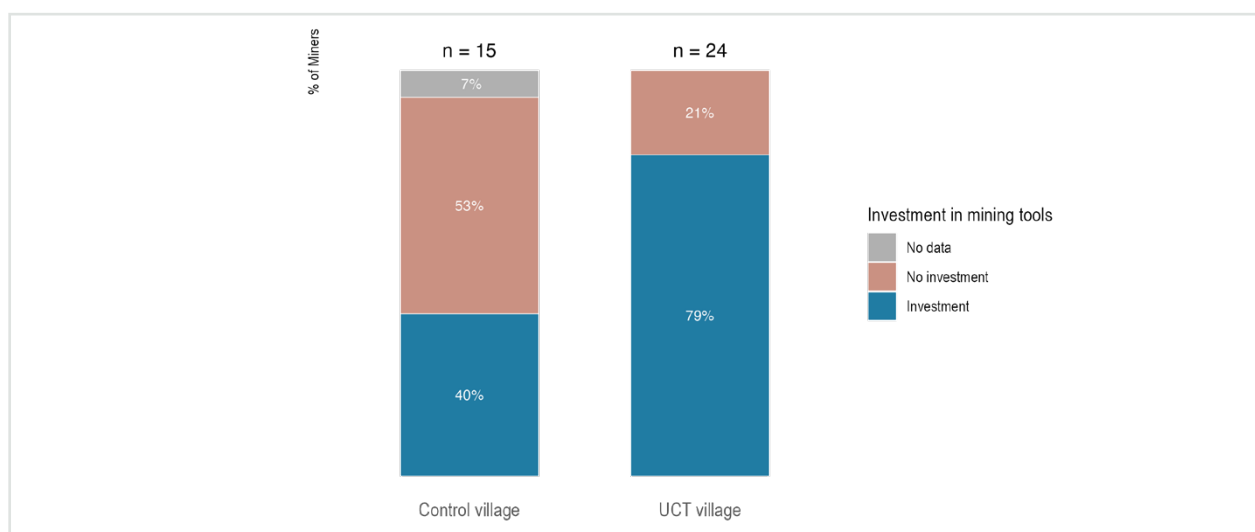


Figure 5: Investment in mining tools in the 2022 midline analysis. ('no data' corresponds to one respondent in the Control village that did not answer the question)

Table 9: Artisanal miners at baseline and after one year of UCT.

| Miners | UCT village | | Control village | |
|-------------------------------------|----------------------|---------------------|----------------------|---------------------|
| | Baseline (n = 33) | Midline (n = 24) | Baseline (n = 13) | Midline (n = 15) |
| Average number of working days/week | 4.5 | 3.7 | 4.2 | 4.4 |
| Protective equipment (yes) | 10 (30.3%) | 8 (33.3%) | 6 (46.2%) | 2 (13.3%) |
| Invested in protective equipment | -* | 6 (25.0%) | -* | 2 (13.3%) |
| Invested in mining equipment | -* | 19 (79.2%) | -* | 6 (40.0%) |

*The questions about investment in equipment in the past year, were not asked in the baseline assessment.

4.3.2. Entrepreneurship

We already reported an increase in small private businesses in the UCT village, compared to the Control village where we saw a decrease one year after baseline (Tables 6 and 7). The few remaining shops in the Control village are food shops, whereas in the UCT village we observed food shops and household item shops, as well as motorbike taxi companies. Especially taxi businesses have been emerging in the year following the start of the UCT intervention, which seems to be linked to the UCT program, as several respondents confirmed that they used the money to buy, or to save up to buy a motorbike (see 4.3) (Figure 6).

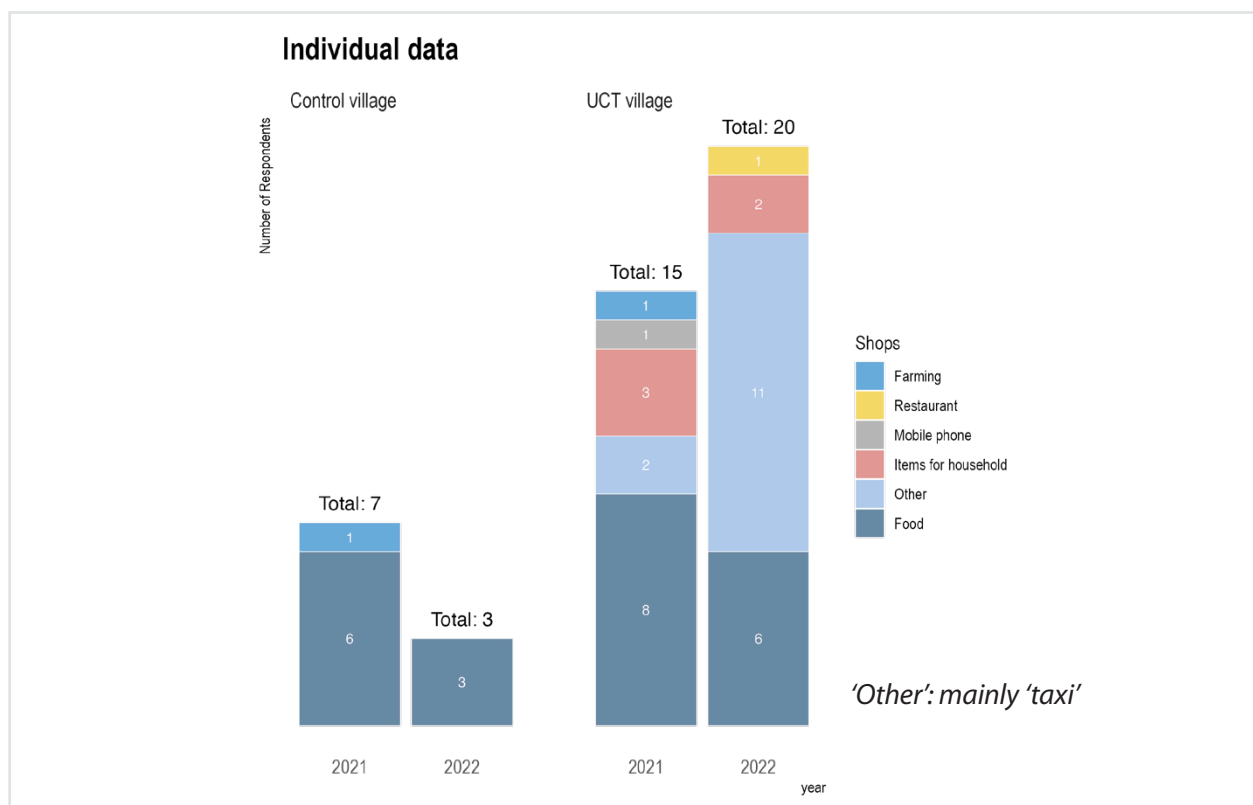


Figure 6: Entrepreneurship at baseline and after one year of UCT.

Whereas the proportion of villagers involved in a private business, was comparable in both villages at baseline, substantial differences have occurred in the 2022 midline survey, the proportion of people running a business in the UCT village being almost three times that in the Control village.

4.4. Children

The data about the education of the children is disaggregated by sex and age group in Table 10.

Table 10: Children age categories and education in the 2022 midline analysis.

| | UCT village (N = 140) | | Control village (N = 63) | |
|---------------------------|-----------------------|------------|--------------------------|------------|
| | Male | Female | Male | Female |
| Age: < 6 y | 22 (15.7%) | 26 (18.6%) | 9 (14.3%) | 16 (25.4%) |
| Age: 6 – 12 y | 37 (26.4%) | 30 (21.4%) | 18 (28.6%) | 15 (23.8%) |
| School (6 – 12 y) | 37 (26.4%) | 30 (21.4%) | 17 (27.0%) | 15 (23.8%) |
| Age: 13 – 17 y | 18 (12.9%) | 7 (5.0%) | 2 (3.2%) | 3 (4.7%) |
| School (13 – 17 y) | 17 (12.1%) | 7 (5.0%) | 2 (3.2%) | 3 (4.7%) |

In both villages the population of children is relatively young: 90.0% of children (126/140 children for 58 households) in the UCT village, and 92.1% of children (58/63) in the Control village, are 12 years of age or younger.

4.4.1. Education

Contrary to secondary school education, primary school education is compulsory in the DRC. On average children start primary school at the age of 6 years. Public primary education is free of charge (which means that parents do not have to pay school fees), but secondary school is not (in rural areas of Maniema province parents must pay 5,000 Fc/child). Additional costs in primary and secondary school are related to school uniforms, pens, notebooks, etc.

Except one boy in UCT village and one boy in Control village, all the children of both villages in the 6-17 years age group attend school.

4.4.2. Children and work

As mentioned in the previous sections almost all children in the 6 - 17 years age group, attended school in 2022 – the two boys who did not attend school (for medical reasons), did also not work. Compared to 2021, less children in both villages combined school with work in 2022: 32 children versus 37 in the UCT village, and 21 children versus 23 in the Control village. Also proportionally, a decrease in both villages can be noticed: in the UCT village, 34.8% of all children in the 6-17 years age group (32 out of 92 children) combined school with work in 2022, compared to 45.7% (37 out of 81 children) in 2021; in the Control village, 55.3% of all children in the 6-17 years age group (21 out of 38 children) combined school in work in 2022, compared to 63.9% (23 out of 36 children) in 2021.

In both villages, most children worked in agriculture (which is in line with the primary occupation of their parents), whereas a minority of the children worked in a mine: in 2022 only 5 children in the UCT village worked in a mine, compared to 30 children who did agricultural work; and only 3 children in the Control village worked in a mine, compared to 20 in agriculture (Table 11).

We observe a strong reduction of the number of children performing mining activities in the UCT village between 2021 and 2022 (from 15 to 5 children) – this reduction is less pronounced in the Control village, from 5 to 3 children. The same applies for the number of households with at least one child working in a mine: in the UCT village the number of these households reduced substantially from 11 to 4 (although the

number of households with children doing any kind of work in general, slightly increased), whereas in the Control village data show a moderate decrease from 5 to 3 households (Tables 11 and 12).

It is noteworthy that the Congolese legislation allows child labour as from 16 years old, under strict conditions.³⁴ For example, children are not allowed to do work that is considered as dangerous and unhealthy; the Ministerial Decree of 2008 lists light agricultural activities that can be performed by children under 18 years of age.

Table 11: Children and work at baseline and after one year of UCT.

| Children (6 – 17 years): | UCT village | | Control village | |
|--------------------------------|-------------------|------------------|-------------------|------------------|
| | Baseline (n = 81) | Midline (n = 92) | Baseline (n = 36) | Midline (n = 38) |
| Combining work/school | 37 (45.7%) | 32 (34.8%) | 23 (63.9%) | 21 (55.3%) |
| Working in a mine* | 15 (18.5%) | 5 (5.4%) | 5 (13.9%) | 3 (7.9%) |
| Working in agriculture* | 33 (40.7%) | 30 (32.6%) | 21 (58.3%) | 20 (52.6%) |
| Doing other job* | 6 (7.4%) | 8 (8.7%) | 2 (5.6%) | 0 (0.0%) |

* Some children combine different types of work: consequently, the same child can appear in the statistics of “working in mine”, “working in agriculture” or “doing other job”.

Table 12: Households with children who work at baseline and after one year of UCT.

| Households with children: | UCT village | | Control village | |
|-------------------------------|--------------------|-------------------|--------------------|-------------------|
| | Baseline (n = 45)* | Midline (n = 45)* | Baseline (n = 15)* | Midline (n = 15)* |
| Combining work/school | 18 (40.0%) | 20 (44.4%) | 11 (73.3%) | 8 (53.3%) |
| Working in a mine | 11 (24.4%) | 4 (8.9%) | 5 (33.3%) | 3 (20.0%) |
| Working in agriculture | 18 (40.0%) | 20 (44.4%) | 11 (73.3%) | 8 (53.3%) |
| Doing other job | 6 (13.3%) | 8 (17.8%) | 2 (13.3%) | 0 (0.0%) |

* Total number of households with children

It is difficult to assess the impact of UCTs on all child labour in this pilot study. As almost all children in the 6 – 17 years age group attended school in both villages in 2021 and 2022, none of the children were full-time employed (either in a mine, or in farming, or any other job). Moreover, as aforementioned, child labour is not fully prohibited by the Congolese law, but only subject to strict conditions.

Between 2021 and 2022, both villages saw a slight reduction in the number of children, combining school and work.-At baseline, proportionally more children combined school with work in the Control village (63.9%), compared to the UCT village (45.7%). However, during the baseline survey, children in both villages could not go to school because of a teachers’ strike. We can therefore not exclude that more children than usual were doing some kind of work because of their free time. During the midline survey, there was no strike, and the schools were open, which may partly explain the decrease in child labour we observed. However, in the UCT village, the decrease in number of households with at least one adult artisanal miner (from 30 to 23) might also explain the strong reduction of children working in a mine in the UCT village (from 15 to 5 children) between 2021 and 2022.

34 See the Ministerial Decree N° 12/CAB.MIN/TPSI/045/08 of 8 August 2008 defining the conditions of child labour, and the Child Protection Law N° 09/001 of 10 January 2009.

4.5. Potential effect of UCT on socio-economic well-being

4.5.1. Housing and electricity

People used different materials in the construction of their houses: in both villages the houses have either brick or mud walls (50.0% brick/50% mud in the UCT village; 71% brick/29% mud in the Control village). At baseline, most households in both villages lived in a house with a thatched roof, and only a few had a roof of corrugated sheets (metal roof). However, one year after the start of the UCT program, the number of households in the UCT village, living in a house with corrugated sheets has increased from 6 (10.3% of the total number of households) to 17 (29.3%), whereas this number only increased from 1 (5.6%) to 2 (11.1%) households in the Control village.

These findings corroborate the observation that proportionally more people in the UCT village have invested in the construction and renovation of their houses in the past year, compared to the Control village: 56.7% (59/104) of the inhabitants of the UCT village have invested in the improvement of the quality of their house (most of them have improved the roof of their home, some of them also mentioned the walls) compared to 15.6% (7/45) in the Control village. Additionally, 38.3% of respondents in the UCT village who were asked how they have spent the UCT money, answered that they used it to renovate their house (especially the roof), or that they were saving the money to be able to perform renovation or construction works. Figure 7 helps to clearly visualise the effect of the UCT program on the number of metal roofs in the UCT village.

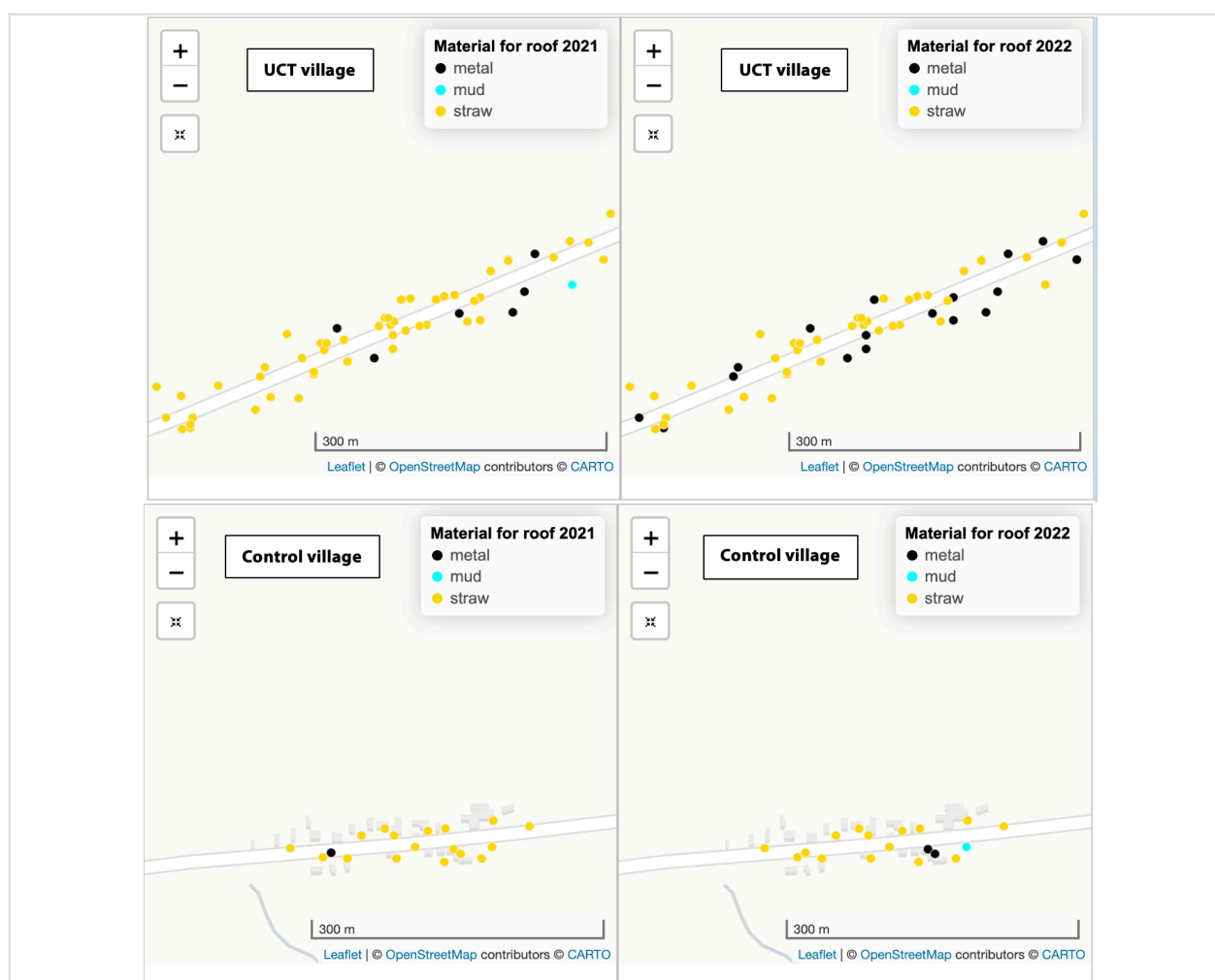


Figure 7: Households with thatched (yellow dots) and metal (blue dots) roofs in UCT and Control village at baseline and after one year of UCT. All houses in the villages are located along the main street.

Moreover, in the UCT village, we notice a larger increase in households with at least one member reporting having access to electricity, compared to the Control village: at baseline the proportions of these households were comparable (51.7% and 50.0% respectively); one year later this proportion has increased with 40% (from 30 households to 42, or 72.4%) in the UCT village, and with 22% (from 9 to 11, or 61.1%) in the Control village. Interestingly, 12.5% of respondents in the UCT village, explain that they used part of the UCT money to buy a battery or solar panels, the latter being the main source of electricity in the two villages.

4.5.2. Livestock, fish farming and consumer goods

The capacity to invest in livestock was assessed both at the individual and the household level (Table 11). There is no substantial difference between the baseline and the midline survey regarding the number and proportion of respondents who confirmed that they possessed livestock. Likewise, the number and proportion of households in both villages, with at least one adult who confirmed that he/she possessed livestock, was not substantially different between baseline and midline survey. Similarly, both villages were comparable in terms of proportions of households keeping any type of livestock with no difference over time. However, almost half of the respondents in the UCT village have invested in their livestock (e.g., poultry, sheep, goat, pig, cattle) in the past year, compared to a bit more than a quarter in the Control village (Figure 8). In addition, almost 20.0% of the respondents in the UCT village have specified that they have used part of the UCT money to invest in fishpond construction for fish farming.

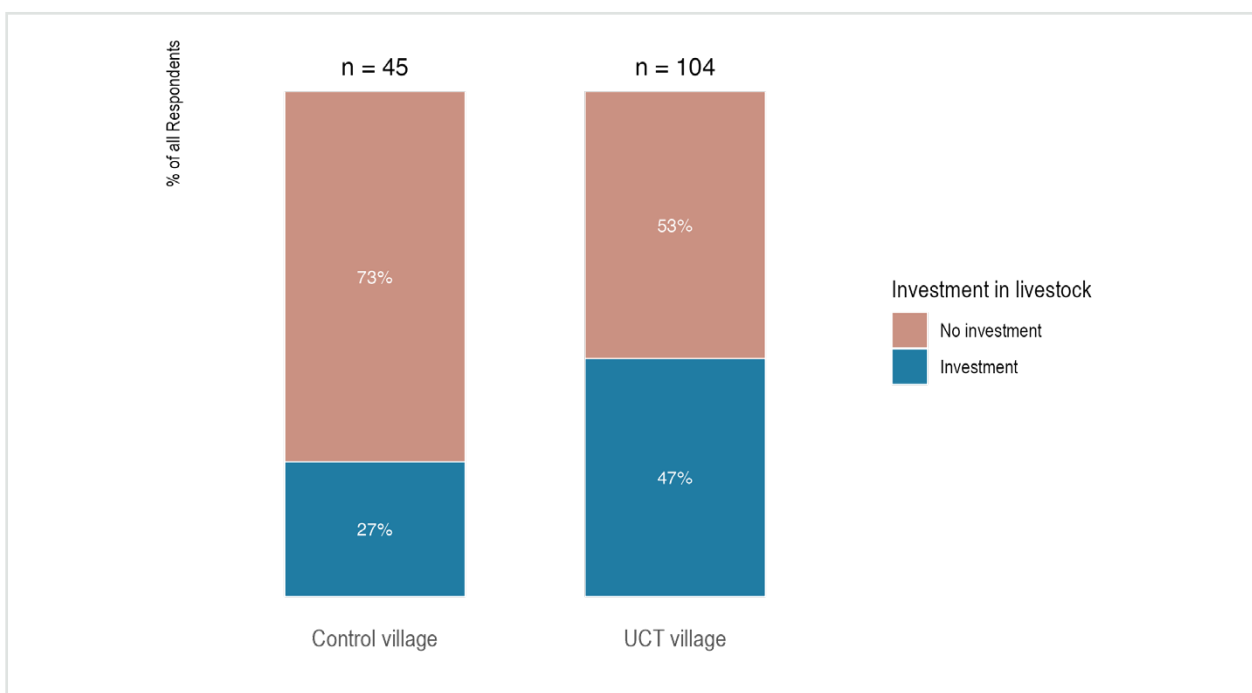


Figure 8: Investment in livestock after one year of UCT.

Table 13: Being in possession of livestock and having invested in livestock at baseline and after one year of UCT.

| | UCT village | | Control village | |
|-----------------------------|-----------------------|----------------------|----------------------|---------------------|
| Individual level | | | | |
| | Baseline (N = 105) | Midline (N = 104) | Baseline (N = 50) | Midline (N = 45) |
| Livestock | 64 (61.0%) | 62 (59.6%) | 24 (48.0%) | 21 (46.7%) |
| Livestock investment | - | 49 (47.1%) | - | 12 (26.7%) |
| Household level | | | | |
| | Baseline (N = 58) | Midline (N = 58) | Baseline (N = 18) | Midline (N = 18) |
| Livestock | 36 (62.1%) | 35 (60.3%) | 11 (61.1%) | 10 (55.6%) |
| Livestock investment | - | 29 (50.0%) | - | 7 (38.9%) |

Table 14 shows the availability of several consumer goods at household level (i.e., at least one member of a household confirmed possessing a specific consumer good from a fixed list, including radio, TV, bicycle, motorbike, car, refrigerator, generator). None of the households in both villages did possess a car, a refrigerator, or a generator – as solar panels are used to generate electricity in both villages, there is no need for generators.

Remarkably, the numbers and proportions of households in the UCT village, with at least one adult who has confirmed having a radio or a television, have increased about 2.4 times, one year after the start of the intervention; the number and proportion of households in the UCT village, with a least one adult having a motorbike, have increased about 3.7 times. The latter corroborates the increase in taxi-motorbike businesses in the UCT village since the baseline assessment. We observed no such increase in the Control village, although it must be said that the proportion of households with at least one adult possessing a radio, was very high at baseline (88.9%).

Table 14: Availability of consumer goods at household level at baseline and after one year of UCT.

| | UCT village | | Control village | |
|---|------------------------------|-----------------------------|------------------------------|-----------------------------|
| At least one member/ household | Baseline (N = 58) | Midline (N = 58) | Baseline (N = 18) | Midline (N = 18) |
| Radio | 17 (29.3%) | 41 (70.7%) | 16 (88.9%) | 15 (83.3%) |
| TV | 9 (15.5%) | 22 (37.9%) | 2 (11.1%) | 0 (0.0%) |
| Bicycle | 3 (5.1%) | 2 (3.4%) | 0 (0.0%) | 0 (0.0%) |
| Motorbike | 3 (5.2%) | 14 (24.1%) | 0 (0.0%) | 0 (0.0%) |

Almost half of the respondents in the UCT village (45.2%) specified that they bought a variety of household goods, such as a mattress, chairs, a television, a radio, clothing, and kitchenware.

4.5.3. Nutrition and diet variety

Table 15: Number of meals per day at baseline and one year after the start of UCT.

| Meals | UCT village | | Control village | |
|-----------------|-----------------------|----------------------|----------------------|----------------------|
| | Baseline (N = 105) | Midline (N = 104) | Baseline (N = 50) | Midline* (N = 45) |
| One meal/day | 13 (12.4%) | 0 (0.0%) | 0 (0.0%) | 3 (6.7%) |
| Two meals/day | 67 (63.8%) | 74 (71.2%) | 48 (96.0%) | 38 (84.4%) |
| Three meals/day | 25 (23.8%) | 30 (28.8%) | 2 (4.0%) | 3 (6.7%) |

* One respondent claimed having 5 meals per day

One year after the start of the UCT intervention, no respondent reported having only one meal in the UCT village, while the number of adults taking three meals per days increased (from 25 to 30); the proportion of people in the Control group taking at least two meals per day remained high at the time of the 2022 midline study (91.1% of all respondents), although there were also three respondents indicating that they had only one meal per day.

Among the group of 13 people who took only one meal per day in the UCT village at baseline, 61.5% of them were females, and 46.2% of them were the only adult in the household (5 out of 6 were females); 2 out of 3 respondents in the Control village, having one meal per day, were females at the time of the midline survey.

Villagers were also asked if there were days in the past month, they did not have enough to eat. The findings of the 2022 midline survey clearly indicate a marked decrease in UCT village over the past year from 76.0% to 24.0% of respondents in the UCT reporting they had days they could not eat enough, and a more moderate decrease from 86.0% to 77.8% in the Control village.

Although the proportions of respondents eating at least two meals per day were comparable in both villages at the time of the 2022 midline survey, we notice a remarkable difference between both villages with respect to diet variety. Respondents were asked if they considered their diet as less, more, or equally varied compared to one year ago: 92.3% of adults in the UCT village (96 out of 104) confirmed a more varied diet, compared to only 17.8% in the Control village (8 out of 45) (Figure 9).

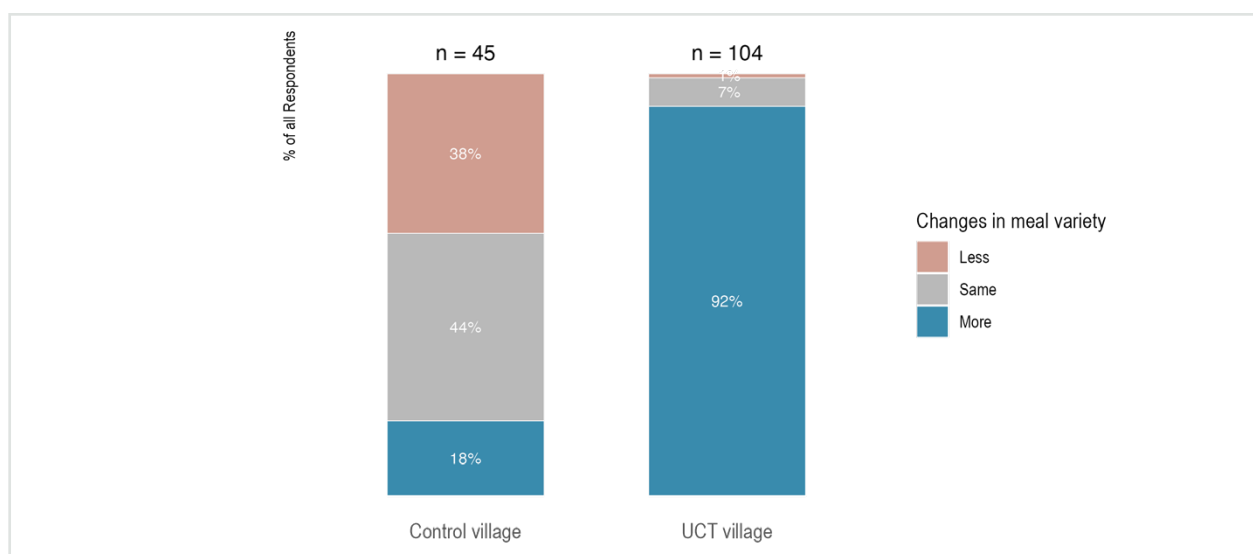


Figure 9: Self-assessment of diet variety after one year of UCT.

To get a sense of the variety of people’s diet, we asked what foodstuffs they eat daily, once or a few times a week, and less than once a week (respondents could select foodstuffs from a multiple-choice list) (Table 16).

Table 16: Diet variety (daily and weekly) at baseline and one year after UCT.

| Meals | UCT village | | Control village | |
|---|-----------------------|----------------------|----------------------|---------------------|
| | Baseline (N = 105) | Midline (N = 104) | Baseline (N = 50) | Midline (N = 45) |
| Daily meals | | | | |
| Only fufu or rice + vegetables | 97 (92.4%) | 89 (85.6%) | 45 (90.0%) | 44 (97.8%) |
| Fish | 4 (3.8%) | 11 (10.6%) | 4 (8.0%) | 0 (0.0%) |
| Meat (poultry, beef, pork, sheep, goat) | 3 (2.9%) | 3 (2.9%) | 0 (0.0%) | 0 (0.0%) |
| Once or a few times a week | | | | |
| Fish | 87 (82.9%) | 71 (68.3%) | 41 (82.0%) | 33 (73.3%) |
| Bush meat | 13 (12.4%) | 7 (6.7%) | 3 (6.0%) | 2 (4.4%) |
| Meat (poultry) | 10 (9.5%) | 6 (5.8%) | 1 (2.0%) | 0 (0.0%) |
| Meat (beef, pork, sheep, goat) | 14 (13.3%) | 64 (61.5%) | 6 (12.0%) | 10 (22.2%) |

Fufu (or rice, but less frequent) combined with vegetables (often *sombe* or cassava leaves) is a basic meal consumed daily by most of the inhabitants of both villages, while fish and meat are rarely eaten on a daily base. However, we observe a slight decrease between 2021 and 2022 in the proportion of people eating only ‘fufu and vegetables’ daily in the UCT village (from 92.4% to 85.6%), with a concomitant increase in people consuming fish daily (from 3.8% to 10.6%); the inverse is true in the Control village. More pronounced is the change in meat (beef, pork, sheep, goat) consumption on a weekly basis in the UCT village one year after the start of the intervention: the number of adults eating meat weekly has increased by more than 4.5 times (from 14 to 64, or proportionally from 13.3% to 61.5%). By comparison, the data show a more modest increase in the Control village, from 12.0% to 22.2% (see also Figures 10 and 11).

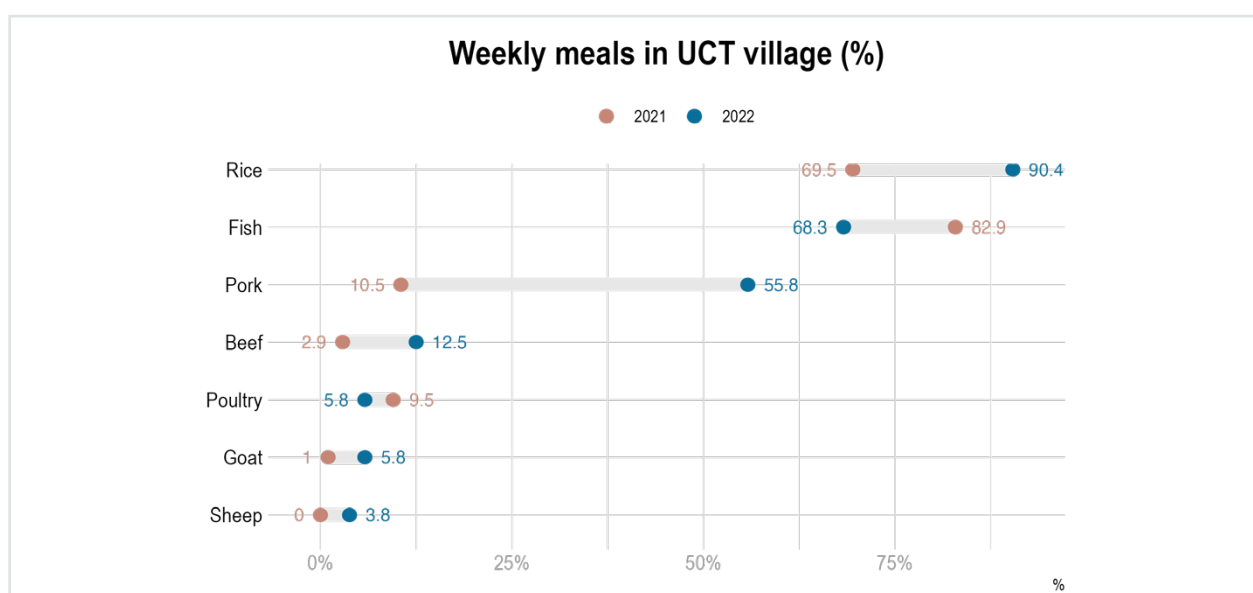


Figure 10: Foodstuffs consumed once or a few times a week in the UCT village at baseline (2021) and after one year of UCT (2022).

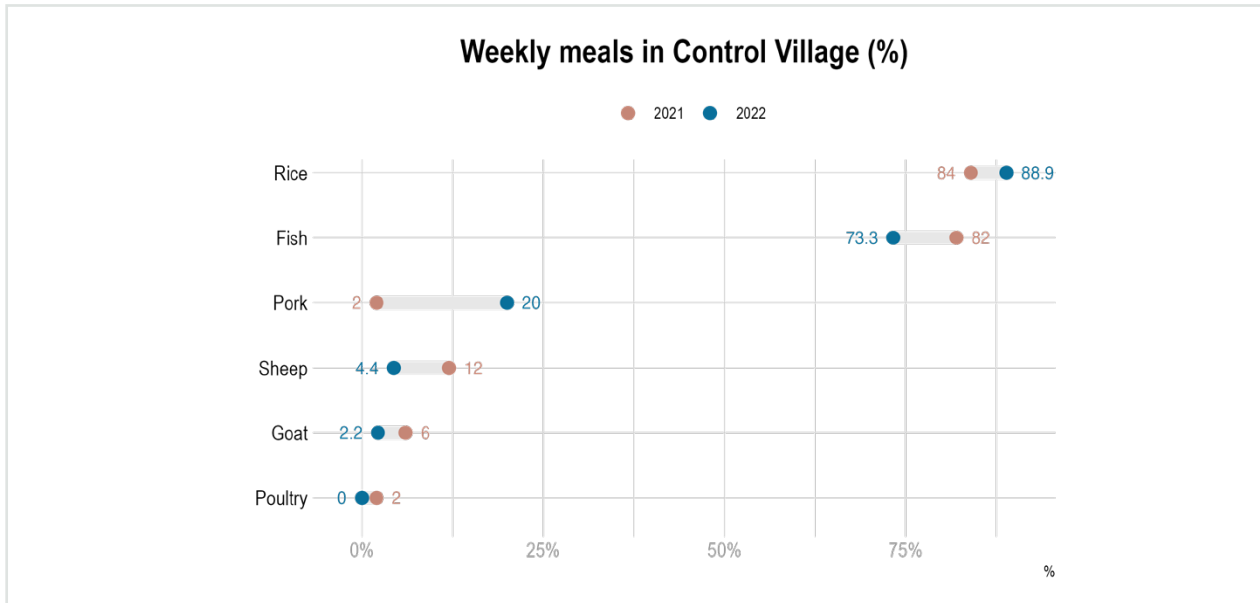


Figure 11: Foodstuffs consumed once or a few times a week in the Control village at baseline (2021) and at midline (2022).

Gender-disaggregated data show moderate differences between male and female respondents in the UCT village: at baseline, women represented 42.9% of adults (6 out of 14) who indicated that they consumed meat on a weekly base: one year later, they were 53.1% (34 out of 64).

About 27% of the respondents in the UCT village explicitly mentioned food when asked how they have spent the UCT money during the past month (some of them specifying ‘meat’ or ‘fish’). By asking the head of household and the spouse(s) to estimate separately the amount of money (in *Franc Congolais*, Fc) spent on a weekly base for food, we assessed changes in household weekly spending between 2021 and 2022 (Table 17)³⁵, and we indeed observe a more substantial increase in the UCT village than in the Control village.

Table 17: Median weekly spending on food (in Franc Congolais) at baseline and after one year of UCT.

| Weekly spending on food | UCT village | | Control village | |
|--------------------------------|---------------|--------------|-----------------|--------------|
| | Baseline (Fc) | Midline (Fc) | Baseline (Fc) | Midline (Fc) |
| Estimated by head of household | 6,750 | 20,000 | 3,750 | 9,750 |
| Estimated by spouse | 5,000 | 17,500 | 6,000 | 10,000 |

At the time of the midline assessment, the median weekly spending on food was higher in both the UCT and the Control village in comparison with the baseline. However, this increase was larger in the UCT village (2.9 to 3.5 times depending on who answered the question), than in the Control village (1.7 to 2.6 times).

As mentioned in part 3.4, prices for several basic food stuffs (e.g., manioc flour) have increased between the baseline and the assessment in 2022, but this price increase was more pronounced in the UCT village than in the Control village. In 2022, people had therefore to pay more for the same amount of certain food, but some of them did not necessarily consume more food than a year ago (and probably even less). Anyway, inhabitants of the UCT village spent in general more on food one year after the start of the UCT intervention, compared to the Control group. The difference in weekly spending on food between

35 At the current exchange rate 1 USD = 2,000 Fc.

baseline and midline is statistically significant for the UCT village (Wilcoxon signed rank test, $p < .001$, effect size $r = 0.66$, $n = 58$) (Figure 12). This observation is further substantiated by personal testimonies of UCT recipients, who have confirmed that they used part of the UCT money to buy food stuffs, enabling them to increase the variety of their diet.

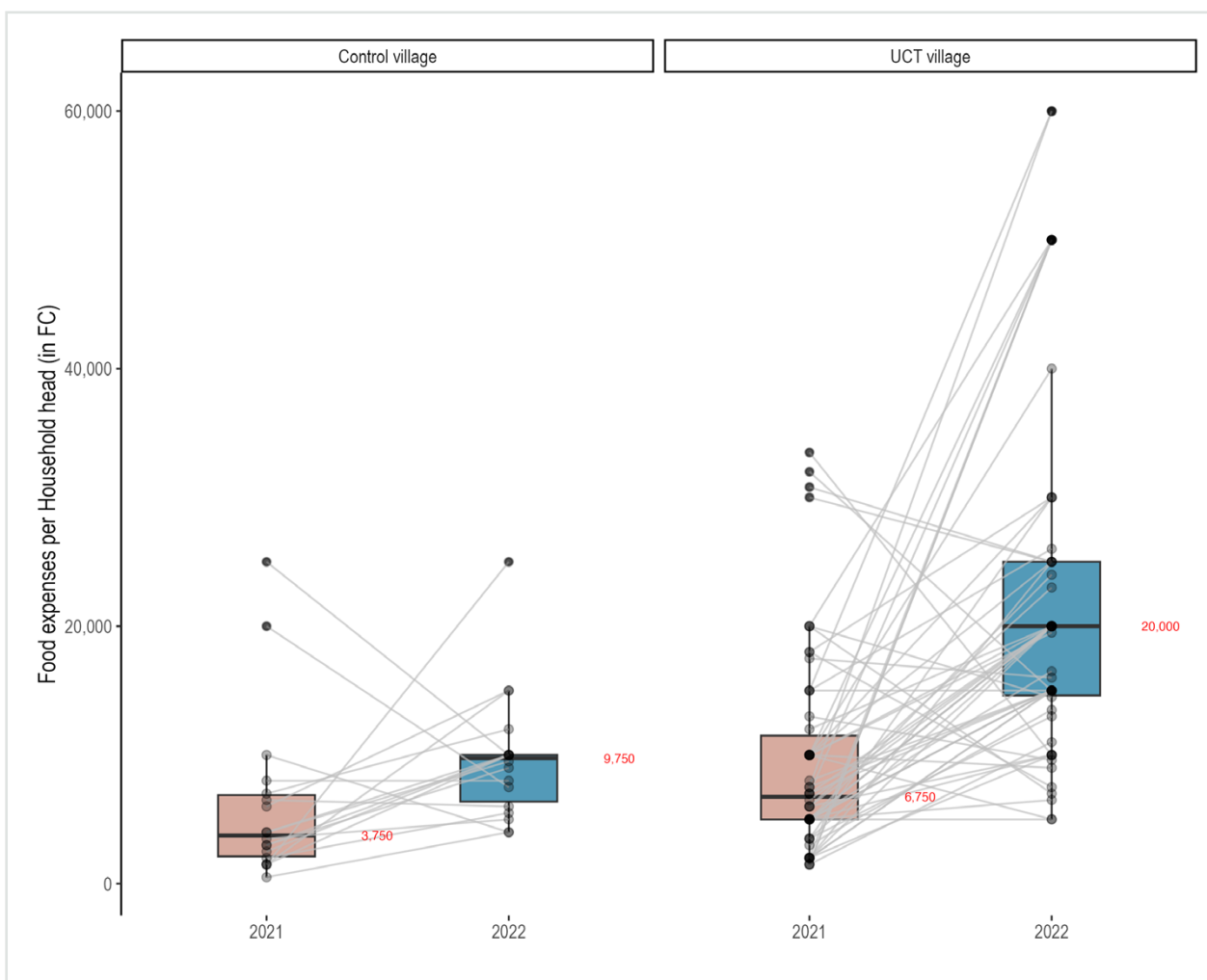


Figure 12: Weekly spending on food at baseline and after one year of UCT. The median is indicated in red and the grey lines show the evolution in food expenses of each individual household between baseline and midline.

4.5.4. Debts and savings one year after the start of UCT

At baseline almost half of the respondents in the UCT village (45.7%) and in the Control village (48.0%) admitted that they owe a debt. Remarkably, the number of respondents who confirmed having debts decreased substantially in the UCT village (from 48 at baseline to 12 at the time of the midline assessment, i.e. from 45.7% to 11.5% of the respondents), whereas this decrease was less pronounced in the Control village (from 48% to 40%) (Figure 13).

The gender-disaggregated data also show differences between baseline and midline assessments: at baseline, the proportion of males having debts was slightly higher than females in both villages (48.9% vs 43.1% in the UCT village; 59.1% vs 39.3% in the Control village). At the time of the midline assessment, there was no difference anymore between female and male respondents in the Control village (40.0% of women and men), whereas in the UCT village the proportion of women having debts (6.9%) was clearly lower than men having debts (17.4%).

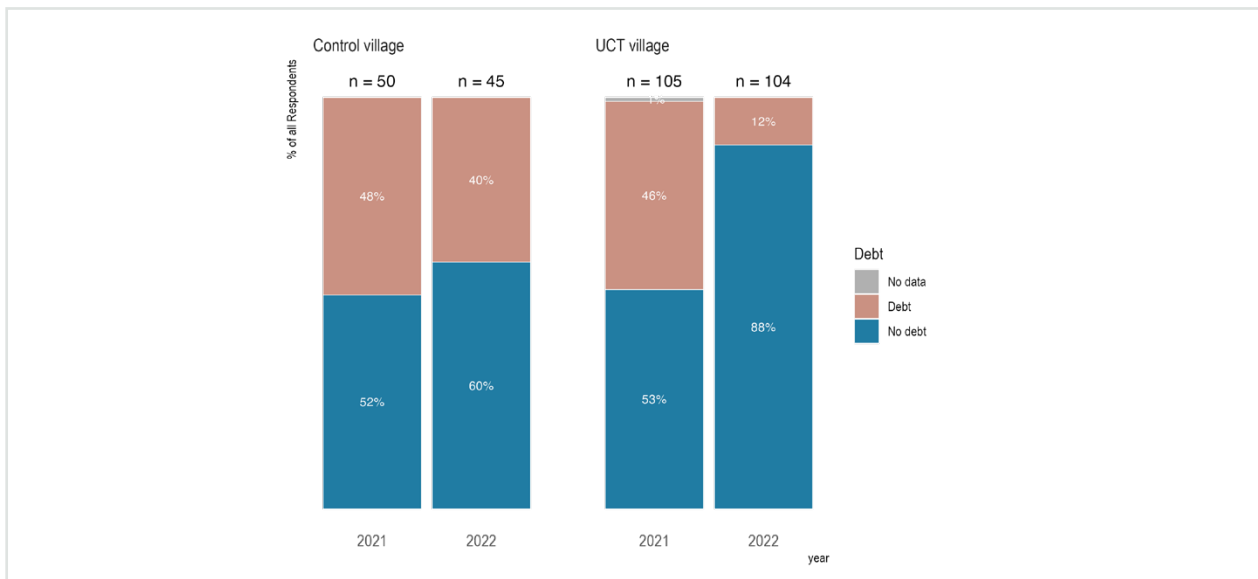


Figure 13: People owing a debt at baseline and after one year of UCT.

Remarkably, several respondents owing a debt, also answered that they were able to save money. This apparent contradiction could be partially explained by the fact that some of the villagers are member of savings and credit associations or groups (e.g., *mutuelles*, *tontines*) (see 4.7.1). Members of these associations are expected, and have the moral obligation, to contribute financially to the association on a regular basis.³⁶ When members are not able to pay their contributions (e.g., for economic reasons), they start accumulating debt while participating in a savings system. Otherwise, members of credit associations who contribute regularly, can ask the association for a loan, which has to be reimbursed. This is again a situation of debt creation while saving money by participating in a savings system. And indeed, 8 out of the 12 respondents (66.7%) in the UCT village who confirmed having debts in the midline assessment, were member of a savings association.

The proportion of respondents claiming that they were able to save money, drastically decreased in the Control village from 98.0% to 24.4%, between baseline and midline assessment; this proportion decreased moderately in the UCT village from 91.4% to 70.2%. Increased prices for basic products and foodstuffs, combined with the fact that several UCT recipients have invested their money in housing, professional equipment, livestock, and household goods and food stuffs, might be at the basis of these differences between baseline and midline findings.

4.6. Potential effect of UCT on health and on ability to afford medication

4.6.1. Health perception

Self-perceived health as well as the ability to afford medication was assessed at baseline and midline (Tables 18 and 19; Figures 14 and 15). At baseline, the proportion of inhabitants perceiving their health as *good* or *very good* (respondents were asked 'how would you assess your health today?') was higher in the UCT village than in the Control village (58.1% against 46.0%). Inversely, the proportion of people self-assessing their health as *bad* or *very bad* was lower in the UCT village. A year later, the number of respondents feeling healthy or very healthy, increased substantially in the UCT village to reach 82.7%, contrary to the Control village (53.0%) where more people also assessed their health as 'average' compared to the baseline (from 18.0% to 33.3%).

36 Bouman, F.J.A., "Rotating and accumulating savings and credit associations: A development perspective", *World Development*, 23, 3 (1995), 371-384; Le Polain, M., "Dettes et liens: Deux moteurs de l'épargne populaire au Sud Kivu (R.D. Congo)", *Mondes et Développement*, 46, 181 (2018); 41-56.

Moreover, in both villages less people experienced their health condition as *bad* or *very bad*, compared to the baseline, although this change was more pronounced in the UCT village (from 21.9% to 3.8%, Figure 14).

Table 18: Health perception at baseline and after one year of UCT.

| Health perception | UCT village | | Control village | |
|-----------------------|-----------------------|----------------------|----------------------|---------------------|
| | Baseline (N = 105) | Midline (N = 104) | Baseline (N = 50) | Midline (N = 45) |
| Good/very good | 61 (58.1%) | 86 (82.7%) | 23 (46.0%) | 24 (53.3%) |
| Average | 20 (19.1%) | 12 (11.5%) | 9 (18.0%) | 15 (33.3%) |
| Bad/very bad | 23 (21.9%) | 4 (3.8%) | 17 (34.0%) | 6 (13.3%) |
| Don't know | 1 (1.0%) | 2 (2.0%) | 1 (2.0%) | 0 (0.0%) |

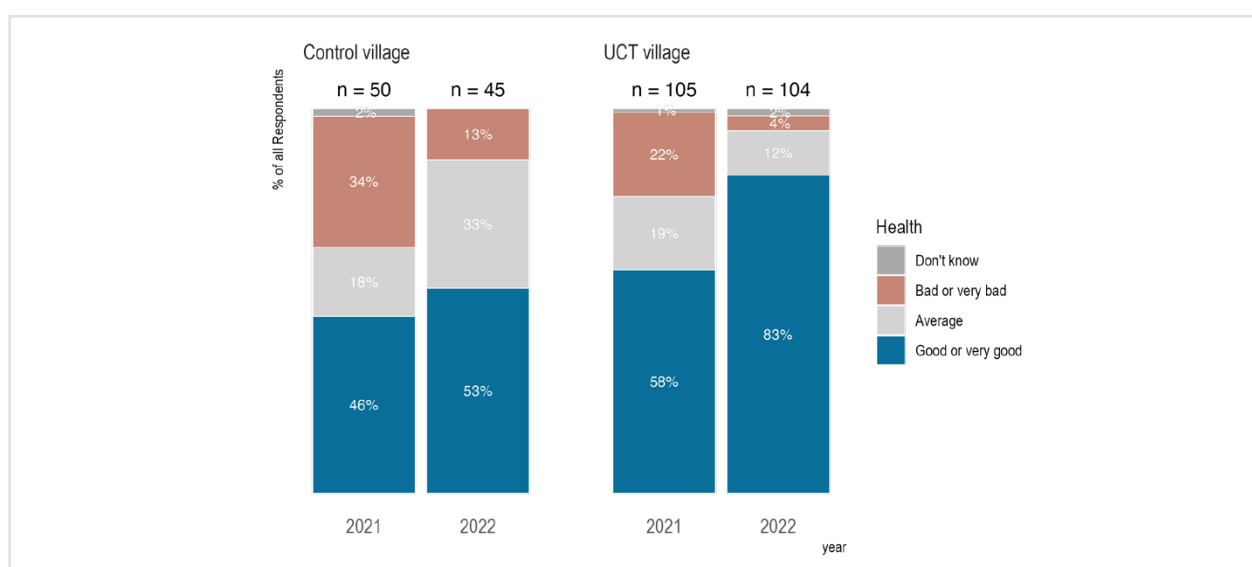


Figure 14: Health perception at baseline and after one year of UCT.

In the baseline study, we observed a significant relationship between health perception and level of education in the Control village where people with a higher education tend to feel healthier. In the UCT village, although suggestive of an association, the test did not achieve statistical significance.³⁷

As the proportion of villagers who did not receive education or only primary school is higher in the Control village than in the UCT village, it cannot be excluded that the differences regarding health perception between the UCT village and the Control village in the midline assessment, are caused by an association between health perception and level of education.

4.6.2. Physical health of adults and children

In both villages, the proportion of respondents who were seriously ill at least once over the past year was lower in midline than baseline assessment (from 58.1% to 22.1% in UCT village and from 46.0% to 26.7% in Control village) (Table 19). We however observe differences regarding the ability to afford medication at midline between the two villages.

³⁷ Gobbers, E. and Muller, T. (2022), op. cit., p. 27.

While at baseline, an important proportion of people who had been ill in the past year used traditional, free-of-charge medicine in both villages (31.1% in the UCT village and 43.5% in the Control village), at midline, this proportion substantially decreased in the UCT village (4.3%), whereas it remained stable in the Control village. Inversely, the proportion of respondents who were sick in the past year, and who had money to pay for the medication, increased considerably in the UCT village (from 37.7% at baseline to 87.0% at midline), while it decreased in the Control village (from 26.1% to 16.7%) (Figure 15 and Table 19).

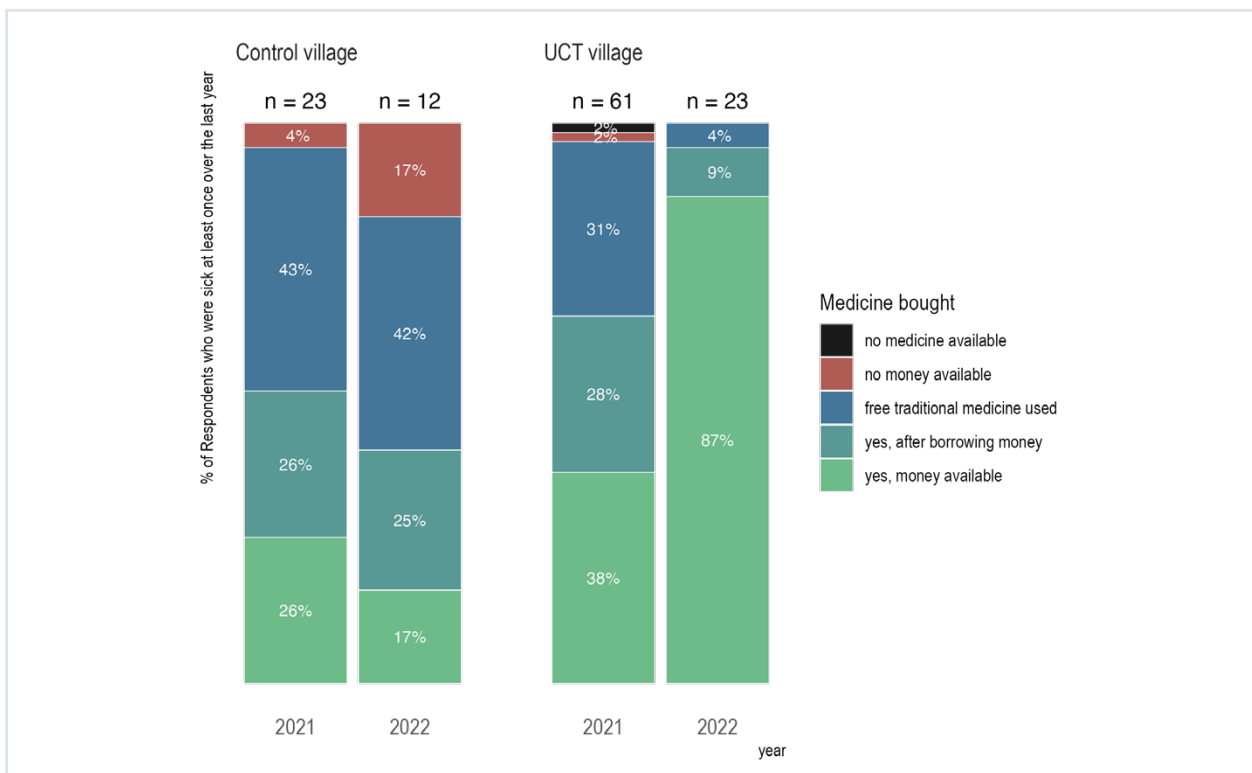


Figure 15: Respondents' ability to buy medication at baseline and after one year of UCT.

Table 19: Respondents' health condition in the previous year and ability to buy medication, at baseline and after one year of UCT.

| Illness | UCT village | | Control village | |
|-------------------------------------|-----------------------|----------------------|----------------------|---------------------|
| | Baseline (N = 105) | Midline (N = 104) | Baseline (N = 50) | Midline (N = 45) |
| Seriously ill in past year | 61 (58.1%) | 23 (22.1%) | 23 (46.0%) | 12 (26.7%) |
| Ability to buy medication | (n = 61) | (n = 23) | (n = 23) | (n = 12) |
| Yes, I had money | 23 (37.7%) | 20 (87.0%) | 6 (26.1%) | 2 (16.7%) |
| Yes, I borrowed money | 17 (27.9%) | 2 (8.7%) | 6 (26.1%) | 3 (25.0%) |
| No, I did not have money | 1 (1.6%) | 0 (0.0%) | 1 (4.3%) | 2 (16.7%) |
| No, medication not available | 1 (1.6%) | 0 (0.0%) | 0 (0.0%) | 0 (0.0%) |
| I used traditional medicine | 19 (31.1%) | 1 (4.3%) | 10 (43.5%) | 5 (41.6%) |

Table 20 shows the health situation of children during the past year at the household level, in the baseline and midline assessments (i.e., in how many households children were seriously ill at least once in the previous year), and the ability of the parents to afford medication for their sick children.

Table 20: Children’s health condition and ability to buy medication at household level at baseline and after one year of UCT.

| Sick children at household level | UCT village | | Control village | |
|-------------------------------------|-----------------------|----------------------|-----------------------|----------------------|
| | Baseline (n = 45)* | Midline (n = 45)* | Baseline (n = 15)* | Midline (n = 15)* |
| Seriously ill in past year | 36 (80.0%) | 29 (60.0%) | 14 (93.3%) | 9 (60.0%) |
| Ability to buy medication | (n = 36)** | (n = 29)** | (n = 14)** | (n = 9)** |
| Yes, I had money | 21 (58.3%) | 28 (96.6%) | 9 (64.3%) | 5 (55.6%) |
| Yes, I borrowed money | 18 (50.0%) | 2 (6.9%) | 10 (71.4%) | 3 (33.3%) |
| No, I did not have money | 2 (5.6%) | 0 (0.0%) | 0 (0.0%) | 2 (22.2%) |
| No, medication not available | 0 (0.0%) | 0 (0.0%) | 0 (0.0%) | 0 (0.0%) |
| I used traditional medicine | 6 (16.7%) | 0 (0.0%) | 1 (7.1%) | 2 (22.2%) |

* Households with children

** Households with sick children; in some of these households, different adults gave different answers (e.g., ‘Yes, I had money’, ‘Yes, I borrowed money’)

Remarkably, the proportion of households with sick children during the past year, decreased in both villages to become comparable (60.0%). The proportion of households that was able to buy medication for their sick children increased strongly at midline in the UCT village (from 58.3% to 96.6% with an increase in absolute figures from 21 to 28 households) while it decreased slightly in the Control village (from 64.3% to 55.6%). Concomitantly, we observe at midline that no household had used free traditional medicine over the past year in the UCT village, whereas they were 6 households at baseline to use them.

4.6.3. Mental well-being

4.6.3.1. *Perception of happiness*

Respondents were asked to assess their state of happiness by selecting one of several choices, namely ‘very good’, ‘good’, ‘moderate’, ‘bad’, ‘very bad’, ‘do not know’. They were also asked to explain their choice by selecting one or several answer options related to family, marriage, education of children, health, work, money, housing, nutrition, security, and other reasons.

In the midline survey, the proportion of respondents in the Control village assessing their state of happiness as *good* or *very good*, dropped substantially from 88.0% (44/50) at baseline to 44.4% (20/45), whereas this proportion increased moderately in the UCT village from 81.0% (85/105) to 95.2% (99/104). Remarkably, the part of respondents in the UCT village who had assessed their state of happiness as ‘very good’ dropped from 38.1% (40/105) at baseline to 11.6% (11/104) in the midline assessment. Concomitantly, the percentage of people feeling unhappy or very unhappy increased considerably in the Control village from 2.0% (1/50) at baseline to 15.6% (7/45) in the midline assessment and decreased in the UCT village from 4.8% (5/105) to 1.0% (1/104). In the UCT village the most frequent mentioned cause of happiness was ‘family’ (57.6% of those who claimed to be (very) happy at baseline, and 89.9% at midline), followed by ‘money’ (34.1% and 32.3%, respectively at baseline and at midline).

However, the results regarding ‘happiness’ should be considered with caution: in the UCT village they probably have been positively influenced by the implementation of the project, whereas in the Control village where some inhabitants had heard about a UCT program in another village, responses could have been negatively influenced by the fact that the village was not selected for such a project. More in general, the arrival of a surveyor in the village may introduce a bias by creating expectations about the implementation of future projects in the community, which can impact the respondent’s answers about happiness.

4.6.3.2. Safety perception

Safety is an important factor in daily life in Eastern Congo, which has a tremendous impact on the well-being of Congolese citizens. Unlike the situation in the provinces of North Kivu, South Kivu and Ituri, the larger part of the province of Maniema has been peaceful for several years and has been spared from violence by non-state armed groups.

The inhabitants of the UCT village and the Control village were asked if they feel secure in their villages, and why they feel secure or insecure. The midline assessment revealed some changes compared to baseline: the number and proportion of people feeling secure increased in both villages, but this increase was more pronounced in the Control village (from 56.0% to 77.8%); concomitantly the proportion of people feeling unsafe decreased drastically in the Control village (from 26.0% to 2.2%). However, as the proportion of respondents in the UCT village feeling safe was already large at baseline (86.7%), and the proportion of those feeling bad was small (2.9%), there was not much room for improvement (Table 21). At baseline, respondents who answered they felt unsafe interpreted the concept of 'safety' differently between villages: people in the UCT village referred mainly to physical safety, whereas some habitants in the Control village had a wider interpretation, including food and environmental safety. This difference was not observed at midline as respondents in both villages interpreted 'safety' in a more similar way. People felt safe (or very safe) in their village mainly because:

- they did not suffer from 'harassments' (47.1% and 24.4% of respondents in the UCT and the Control village, respectively).
- they live in harmony in their village (23.1% and 31.1% of the respondents in the UCT and the Control village, respectively).
- they live in a peaceful area (no rebellion, no war) (6.7% and 6.7% of respondents in the UCT and the Control village, respectively).
- They can peacefully work in the fields or in the mines (2.9% and 8.9% of respondents in the UCT and the Control village, respectively).

Table 21: Perception of safety in the village at baseline and after one year of UCT.

| Safety | UCT village | | Control village | |
|-----------------------|-----------------------|----------------------|----------------------|---------------------|
| | Baseline (N = 105) | Midline (N = 104) | Baseline (N = 50) | Midline (N = 45) |
| Good/very good | 91 (86.7%) | 98 (94.2%) | 28 (56.0%) | 35 (77.8%) |
| Average | 10 (9.5%) | 6 (5.8%) | 7 (14.0%) | 9 (20.0%) |
| Bad/very bad | 3 (2.8%) | 0 (0.0%) | 13 (26.0%) | 1 (2.2%) |
| Don't know | 1 (1.0%) | 0 (0.0%) | 2 (4.0%) | 0 (0.0%) |

At baseline, there was a clear difference between males and females in the Control village regarding their perception of safety: 46.4% of females felt safe/very safe in the Control village, versus 68.2% of males, and 35.7% of females felt unsafe/very unsafe compared to 13.6% of males. This difference was still observable in the midline survey, but less pronounced than in the baseline, with 72.0% of females and 85.0% of males feeling safe/very safe. While in the UCT village, 79.3% of females and 95.7% of males felt safe in their village at baseline, there was no difference anymore at midline.

4.7. UCT and collective participation

Based on previous experiences in the villages of Busibi and Kyataruga in Uganda³⁸, it was hypothesised that UCT could have an influence on collective participation, and on empowerment of citizens in general, and women in particular. The baseline and midline surveys captured data on citizens' participation in civil society organisation (CSO), civic engagement, and decision-making.

4.7.1. Civil society – membership of a CSO

At baseline, proportionately twice as many people participated in CSOs in the UCT village (31.4% of the respondents, or 33 out of 105), compared to the Control village (16.0%, or 8 out of 50). These proportions have changed in the midline survey: the proportion of people participating in CSOs substantially increased in the UCT village (from 31.4% to 43.3%), whereas it slightly decreased in the Control village (from 16.0% to 13.3%) (Figure 16). Interestingly, one year after the start of the UCT program, 43.3% of respondents in the UCT village (45/104) confirmed to be a member of a savings organisation - actually everybody that is a member of a CSO, one of them being also a member of a mining cooperative and another one being member of a church -, whereas most of the CSO members in the control group were adhering a mining cooperative (5 out of 6).

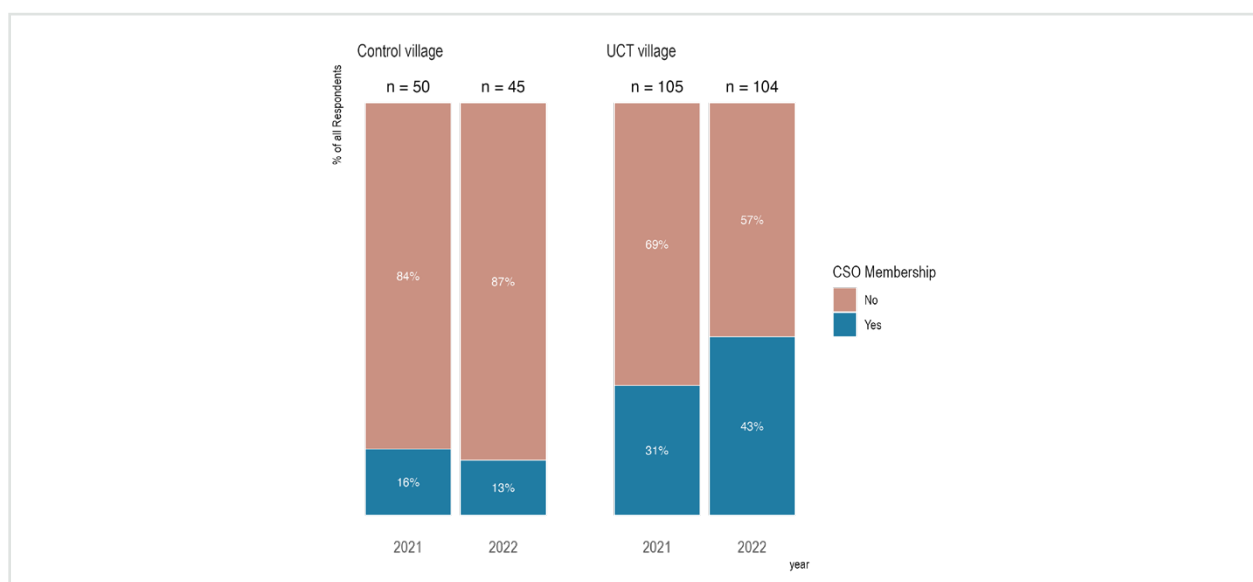


Figure 16: CSO membership at baseline and one year after the UCT.

Moreover, we observed differences between males and females in both villages (Table 22, Figure 17).

Table 22: Gender-disaggregated data on CSO participation in the 2022 midline analysis.

| CSO participation | UCT village | | Control village | |
|-------------------|------------------|--------------------|------------------|--------------------|
| | Male (n = 46) | Female (n = 58) | Male (n = 20) | Female (n = 25) |
| Yes | 27 (58.7%) | 18 (31.0%) | 5 (25.0%) | 1 (4.0%) |
| No | 19 (41.3%) | 40 (69.0%) | 15 (75.0%) | 24 (96.0%) |

38 Grisolia, F., Holvoet, N. and S. Dewachter, Busibi UCT: Preliminary Analysis on Some Key Outcomes. Antwerp: Institute for Development Policy, University of Antwerp, 2021 (www.eight.world/uganda); Eight World, Kyataruga: End of Project Evaluation Report. Eight World, Autumn 2022 (www.eight.world/uganda).

At baseline, no female in the Control village did participate in CSOs; whereas in the UCT village the proportion of females who were member of a CSO was slightly lower than males (29.3% versus 34.0%). However, the midline survey reveals some changes after one year of the UCT program. Whereas the situation in the Control village did not change much (only one female became a member of a CSO), we observe a substantial increase in male CSO members in the UCT village (from 16 at baseline to 27 at midline), contrary to the number of women who participated in CSOs that remained similar. This difference between male and female participants in CSOs in the UCT village is proportionally obvious with 31.0% of females (18/58) being a member of a CSO compared to 58.7% of males (27/46) (Figure 17). The difference between male and female respondents in the UCT village regarding participation in a savings organisation cannot be explained by a difference in saving behaviour: 70.7% of females and 69.6% of males confirmed that they were able to save money.

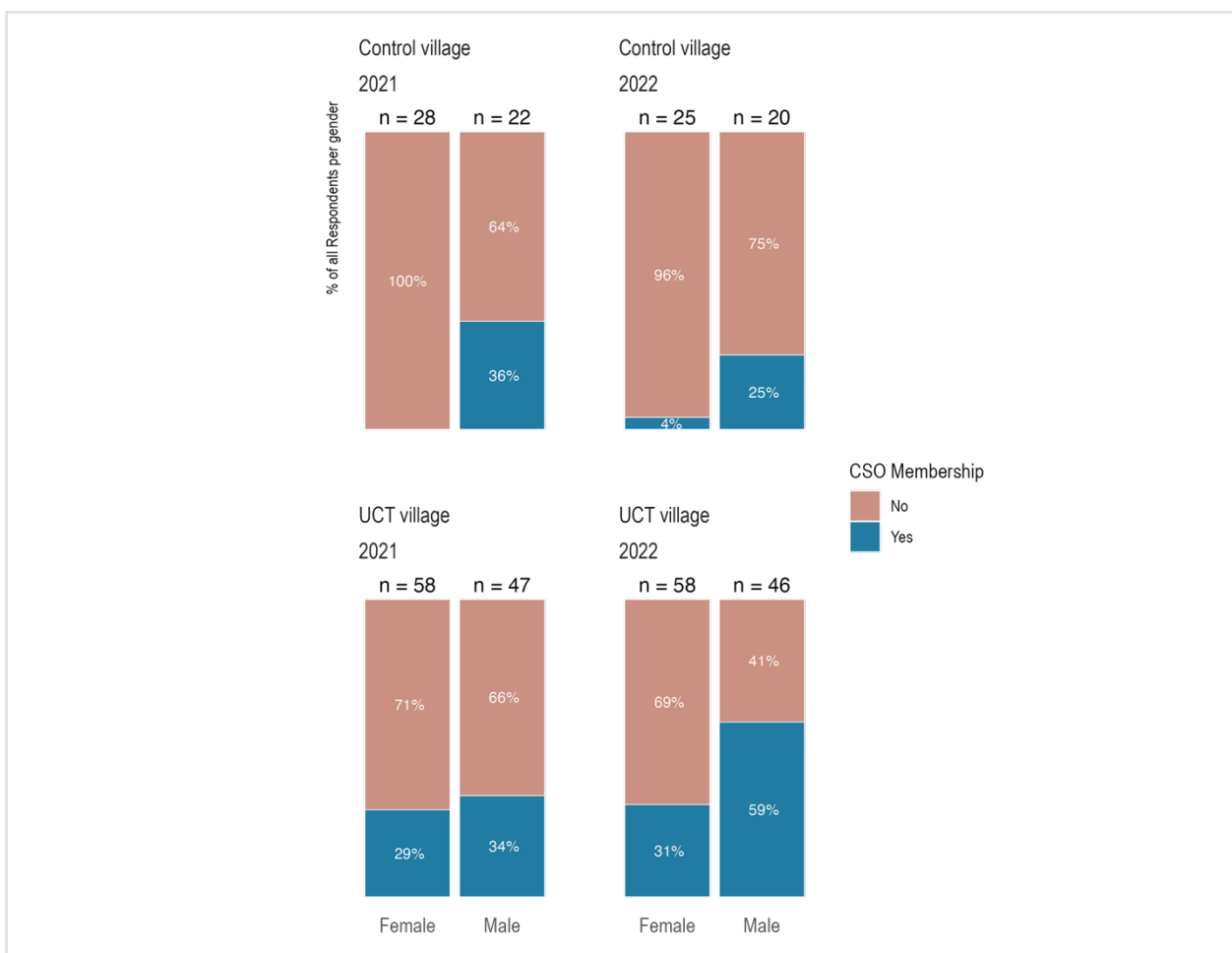


Figure 17: CSO membership at baseline and one year after the UCT by gender.

It seems that many inhabitants of the UCT village (45/104) have contributed money to a savings organisation in the year following the start of the UCT program, several of whom confirmed that this has enabled them to invest in construction material for their houses (especially metal roofs), in livestock, and agriculture.

4.7.2. Civic engagement and connecting with authorities

To assess the extent to which people have taken initiative to consult authorities or other state actors, respondents were asked if they have contacted local authorities, traditional authorities, public state services or members of political parties in the past year. At baseline, the UCT and the Control village were

comparable concerning the extent their populations connected with local and customary authorities, with respectively 7.6% (8/105) and 10.5% (11/105) of respondents in the UCT village, and respectively 8.0% (4/50) and 14.0% (7/50) in the Control village. We however observed differences regarding the proportions of people seeking recourse from public services and politicians: respectively 0.9% (1/105) and 0.0% of the respondents in the UCT village, versus respectively 18.0% (9/50) and 6.0% (3/50) in the Control village. At midline these differences largely disappeared: very few people in both villages contacted authorities, state services or representatives of political parties (ranging from 0 to 7 individuals).

4.7.3. Decision making within the household

The decision-making process in the household was assessed by asking if adults decide independently or in concertation with each other on household-related matters, or if another adult decide for them (Table 23).

Table 23: Decision-making in the household at baseline and after one year of UCT.

| | UCT village | | Control village | |
|--|-----------------------|----------------------|----------------------|---------------------|
| | Baseline (N = 105) | Midline (N = 104) | Baseline (N = 50) | Midline (N = 45) |
| How I spend the money I earn | | | | |
| I decide alone | 22 (21.0%) | 29 (27.9%) | 18 (36.0%) | 15 (33.3%) |
| I decide together with my partner | 79 (75.2%) | 75 (72.1%) | 30 (60.0%) | 24 (53.3%) |
| My partner decides | 3 (2.9%) | 0 (0.0%) | 2 (4.0%) | 4 (8.9%) |
| How money is spent for the children: | | | | |
| I decide alone | 24 (22.9%) | 29 (27.9%) | 18 (36.0%) | 15 (33.3%) |
| I decide together with my partner | 78 (74.3%) | 75 (72.1%) | 30 (60.0%) | 24 (53.3%) |
| My partner decides | 3 (2.9%) | 0 (0.0%) | 2 (4.0%) | 4 (8.9%) |
| Decisions on education of children: | | | | |
| I decide alone | 24 (22.9%) | 27 (26.0%) | 18 (36.0%) | 15 (33.3%) |
| I decide together with my partner | 78 (74.3%) | 75 (72.1%) | 30 (60.0%) | 24 (53.3%) |
| My partner decides | 3 (2.9%) | 1 (1.0%) | 2 (4.0%) | 4 (8.9%) |
| My time spent on work, household, children, leisure,..: | | | | |
| I decide alone | 22 (21.0%) | 28 (27.0%) | 18 (36.0%) | 15 (33.3%) |
| I decide together with my partner | 80 (76.2%) | 75 (72.1%) | 30 (60.0%) | 24 (53.3%) |
| My partner decides | 2 (1.9%) | 0 (0.0%) | 2 (4.0%) | 4 (8.9%) |

The midline analysis revealed a slight increase in people deciding alone in the UCT village (ranging from 21.0 to 22.9% at baseline, and from 26.0 to 27.9% at midline) compared to the Control village, where a small decrease was observed (from 36.0% at baseline to 33.3% at midline). The majority of respondents answered that they take decisions together with their partner, although the proportions in the UCT and the Control village have slightly decreased compared to the baseline. The number of respondents confirming their partner takes decisions has increased in the Control village.

5. DISCUSSION

As mentioned in the methodology section on data analysis (3.3.), the relatively small number of inhabitants in the Control village did not allow to apply more advanced statistical methods to isolate and quantify statistically the effect of UCT alone from other confounding variables, which represents a limit of this pilot study. In the meantime, more and much larger UCT and Control villages (by population) have been added to the program. This will allow to apply statistical methods such as a matching strategy between inhabitants of the newly added UCT and the Control villages to measure more accurately the effect of UCT on the well-being of the recipients.

However, by cross-checking the changes observed between baseline and midline in the treatment village with direct answers to qualitative questions on the use of UCT money, it is possible to attribute with high probability, some of the observed changes in the UCT village to the intervention. Indeed, we observe substantial changes in the UCT village for several key indicators at midline. In the Control village, some of these changes were less pronounced, or absent, or we could even show reverse trends.

5.1. Changes about employment and entrepreneurship

The data suggest a positive effect of the UCT program on variety of professional occupation, and entrepreneurship. The number of respondents working in artisanal mining has proportionally decreased in the UCT village, whereas it has increased in the Control village. Concomitantly, the number of inhabitants with an occupation other than mining or farming has proportionally increased in the UCT village contrary to the Control village, and we could observe the same trend for the number of adults being involved in a small business. At the same time, we observed that proportionally more people have invested in mining and farming tools, and protective mining equipment in the UCT village than in the Control village.

5.2. Effects on socio-economic well-being

- **Housing:** Our results confirm a substantial increase in households living in a house with metal roofs (corrugated sheets) in the UCT village, whereas such a pronounced change was absent in the Control village. In line with these findings, a much larger proportion of respondents in the UCT village confirmed having invested during the past year in the amelioration of their houses' roof, compared to the Control village. This development is remarkable considering that the quality of housing is an indicator of poverty: changes such as replacing thatched roofs by metal roofs, "present a powerful opportunity to improve human well-being".³⁹
- **Livestock and farming:** Compared to the Control village, a much larger proportion of respondents in the UCT village confirmed having invested during the past year, in livestock and farming tools. In addition, 20% of the respondents of the UCT village said that they have used part of the UCT money to invest in the construction of a fishpond.
- **Consumer goods:** We observe a marked increase in households with a least one member possessing a radio, TV, or motorbike, in the UCT village, whereas such an increase did not occur in the Control village.
- **Nutrition and diet variety:** The proportion of respondents assessing their diet as more varied than a year ago, was five times larger in the UCT village than in the Control village. In agreement with these findings, the proportion of respondents who consumed meat weekly (beef, pork, sheep, goat) increased much more in the UCT village than in the Control village. The increase in the median weekly spending on food was stronger in the UCT village than in the Control village (an indication that inhabitants of the UCT village became more resilient to cope with the cost of a living crisis).
- **Debt:** The percentage of respondents admitting owing a debt has substantially decreased in the UCT village, but not in the Control village where a status quo was observed.

39 Tusting, L.S. et al., "Mapping changes in housing in sub-Saharan Africa from 2000 – 2015", *Nature*, 568 (2019), 391-394.

5.3. Health

In both villages we observe a decrease in the proportion of people who self-assessed their health condition as *bad* or *very bad*. However, the proportion of respondents assessing their health as *good* or *very good* has clearly increased in the UCT village, but not in the Control village.

In both villages the number of people who have been seriously ill in the past year and the number of households with sick children have decreased. Remarkably, in the UCT village, we see an increase in the proportion of inhabitants who had money to pay for their medication and the medication of their children when they were sick over the past year; in the Control village, we see the opposite trend.

5.4. Participation, civic engagement and independent decision-making

The proportion of people participating in CSOs has substantially increased in the UCT village, whereas our results show a slight decrease in the Control village. All respondents in the UCT village who confirmed that they participated in a CSO were member of a savings association. However, the participation in the UCT village is due to an increased number of males adhering CSOs (no change with respect to female participation). There is no substantial change regarding civic engagement (taking the initiative to contact authorities, state services, politicians); actually, very few people in both villages contacted authorities, state services or representatives of political parties at midline. We have not noticed either any obvious change about decision-making in the household: in both villages most adults decided for themselves or together with their partner.

In general, we can conclude that our results show a change for several key indicators in the UCT village one year after the start of the intervention, whereas such change did not occur in the Control village (or only to a lesser extent). The fact that these changes affect a range of diverse indicators and occurred in the UCT village only, suggests that the intervention has had a positive effect on the socio-economic well-being of UCT recipients in a village located in an artisanal mining zone of Maniema province.

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