2024

Wuppertal small farmers (Phase 1)

A SOCIAL PROFILING AND CONSTRAINT BASELINE ANALYSIS

EC VAN ZYL-STEENS

Table of Contents

List of Figures

List of Tables

1 Executive Summary

The concern about South Africa's dwindling economy is growing, and a shift towards sustainable and economic freedom should be the focus; on the ground level of the dilemma are limited household resources to provide food on the table at an affordable cost. Visibly the quality of life of households is influenced by various factors that need to be addressed to enhance sustainable livelihoods, especially in rural communities.

Community support towards sustainable economic freedom is a complex challenge all around, and no exception for the larger Wuppertal community[1] which has been identified by *The Goed Life* and *Cederbos* as a potential point of interest. The main goal of the complete viability assessment is the community developmental support towards increasing agricultural productivity with indigenous and well-adapted sustainable agricultural produce.

The proposed agricultural produce is mainly considered due to the available and possibly new market opportunities. The commercial viability in terms of market access to supply *The Goed Life* and *Cederbos* will offer farmers an opportunity for socio-economic advancement.

The viability assessment project has 3 focus areas that cover the human/social profile of the potential female farmers, the agricultural potential, as well as market access opportunities. This first phase will focus on assessing the human/social profile of the Wuppertal farmers: the socio-demographic features, the interest in farming, and the limiting factors.

The total study population is all community members in Wuppertal town and the outstations. According to available data, the total area covers 457 households. The data collection was administered to all interested and willing respondents (n=145) who were present during the introductory meetings in the community, as well as a handful of questionnaires completed remotely due to unavailability. A 17-item structured questionnaire was developed. Data analyses use descriptive statistics to provide an overview of the data and help identify patterns and relationships.

The results show that 81% of respondents are of working age, and the mean age of the group is 44.5 years. The number of male and female respondents is more or less equal in the study group, and education levels for males and females are also similar. Almost 20% of respondents did finish Grade 12.

The data suggests that combining more than one source of income plays a major role in household survival strategies as well as high state dependency (social grants).

Furthermore, the study showed that the main constraining factors are access to finance, availability of farming equipment, and agricultural inputs. Another constraint that is far down on the recorded constraints list is access to land; the role of the Moravian Church is of utmost importance for any developmental project in Wuppertal, as all land is owned and managed by the church.

1 Where Wuppertal community refer to the residents of the town as well as those living in the outlying communities surrounding the town, the outstations.

81% of the respondents are interested in the broad description of the proposed project, and 43% of these interested parties are female. The age, gender and education distribution aligned with the distribution of the participating group.

2 The objective and strategic approach towards the problem

Community support towards sustainable economic freedom is a complex challenge all around, and for the larger Wuppertal community, it is no exception. The terms of reference set out are very broad, and only a comprehensive, in-depth, systematic strategic analysis could attempt to gain the necessary understanding of the real complexity of the situation.

A systematic strategic analysis approach to information gathering is the cornerstone of effective decision-making. The best course of action in complex situations should be based on the options derived from systematic analysis.

The viability assessment project has 3 focus areas that cover the human/social profile of the potential female farmers, the agricultural potential, as well as market access opportunities.

This first phase investigation will focus on the assessment of the human/social profile of the Wuppertal farmers. The social profile of the smallholder farmers and community organisations will be investigated to gain a better understanding of the community and its farmers, who directly or indirectly derive a livelihood from agricultural production and who can potentially be included in the existing supply chain of *The Goed Life* and potentially *Cederbos.*

Furthermore, a stakeholder needs/constraints analysis and the smallholder profile will provide the baseline of an in-depth viability assessment for inclusion to promote sustainable farming practices towards sustainable market opportunities for the female smallholder farmers of Wuppertal.

The gathering of information into the research question was done through previous knowledge and observation, informal discussions, and questionnaires, as well as observations doing desktop research on the complexity of the study area and its unique history.

The baseline report will provide more insight into the historical background, the physical location and the factors influencing agriculture within the setting of the demographics of the larger population.

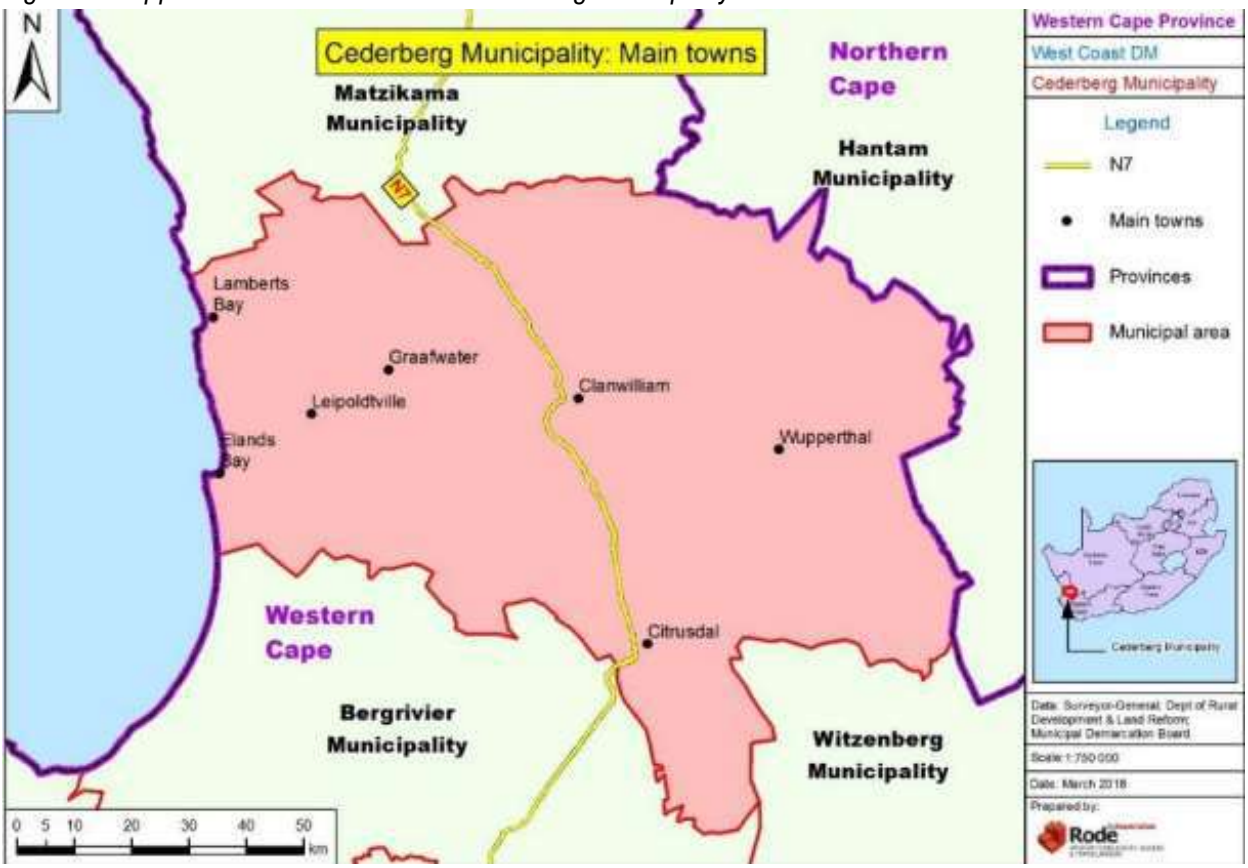
3 Background

3.1 Location

The semi-isolated town of Wuppertal is in the northern Cederberg Mountain region of the Cederberg Municipal area in the Western Cape, South Africa. Wuppertal is approximately 70km from Clanwilliam (*Figure 1* & **Error! Reference source not found.**) and 200km north of Cape Town. The road from Clanwilliam to Calvinia which turns south to Wuppertal, just past Pakhuis Pass, is the main road that serves Wuppertal and the surrounding area.

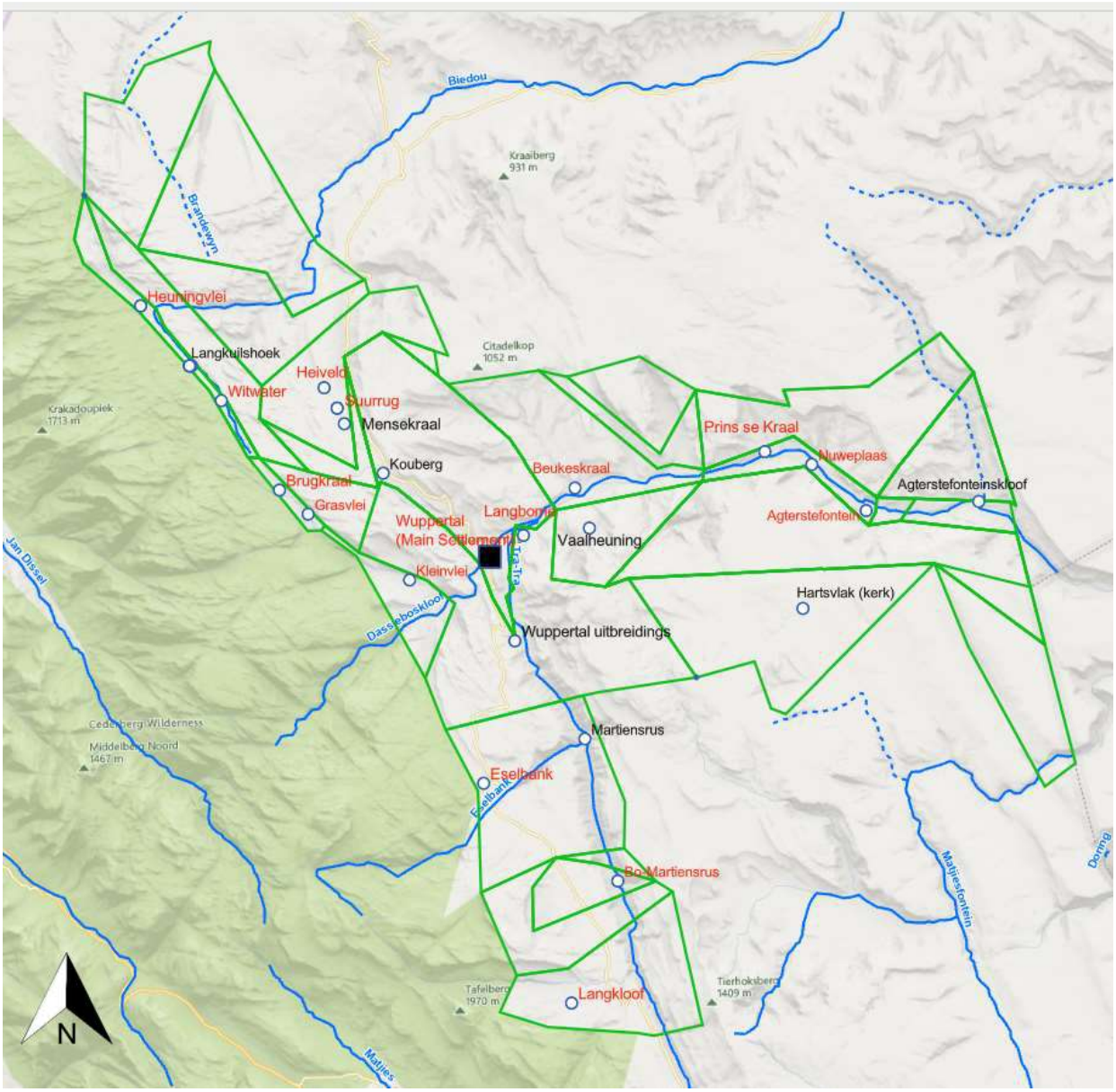
The town of Wuppertal is the original main missionary settlement and has 14 main outstations (outposts) that all form part of the wider Wuppertal community. The outstations are settled in the rugged mountainous area to the south, the more karoo-like (Bokkeveld) areas in the east, and the vlei areas on the northern side of the Wuppertal area (**Error! Reference source not found.**).

Figure 1 Wuppertal town location in the Cederberg Municipality



Source: IDP, Cederberg Municipality. 2024

Figure 2 Wuppertal settlement, including the outstations (2024)



Source: CapeFarmMapper. 2024.

The town itself is in the valley of the Tra-Tra River near its union with the Korns River. Wuppertal is 490 meters above sea level, while the surrounding Eselbank and Langkloof area is significantly higher in the mountainous area. These outstations can only be reached from the Wuppertal side of the mountain via a very steep single-track road. This road is mainly gravel with concrete sections, up the Eselbank Pass (also known as the Kersop Pass) at 978m above sea level and connects to Matjiesrivier on the other side of the Cederberg mountains.

3.2 History, the role of the Moravian church

The Wuppertal mission was founded in 1830 by two German missionaries of the Rhenish Missionary Society. After reduced activity from the Rhenish Missionary Society, the Wuppertal settlement (original mission station as well as its outstations) became part of the Moravian Church, as it remains to this day. Wuppertal settlement

has been a rural coloured community. It is one of the best-preserved mission stations in the Western Cape that still functions as an active community under the administration of the Moravian Church, where its inhabitants share a common religious identity. In the 1980s (), the total area managed by the Moravian Church covered approximately 38 000 ha, which comprised numerous farms (Granger, 1982).

As the area managed by the Moravian church is comprised of original farms, the original boundaries of the farms are recorded by the deed office as per the normal property measures; however, the internal arrangement of the church and details seem to be more flexible and imprecise, or at least not public knowledge. According to Franklin & Breed (2017), the historic core of the Wuppertal settlement consists of socioeconomic functions implemented by the church to serve the people. The *'Opsienersraad'* in Afrikaans, the *supervisory committee*, is the local extension of the Moravian Church. The Moravian Church has sets of rules for the Wuppertal mission, which is listed in the '*Ordeninge*'. The first set of rules dates back to the mission's founding and is adapted over time. The '*Opsienersraad*' is elected by the community members to assist the church with the day-to-day running of the settlement.

The original rules referred to the following, amongst other things: church attendance, honouring the Sabbath, each family providing their own durable housing, possible repossession of allocated gardens if not properly cultivated, and annual rent payments, with no subletting of grounds without permission.

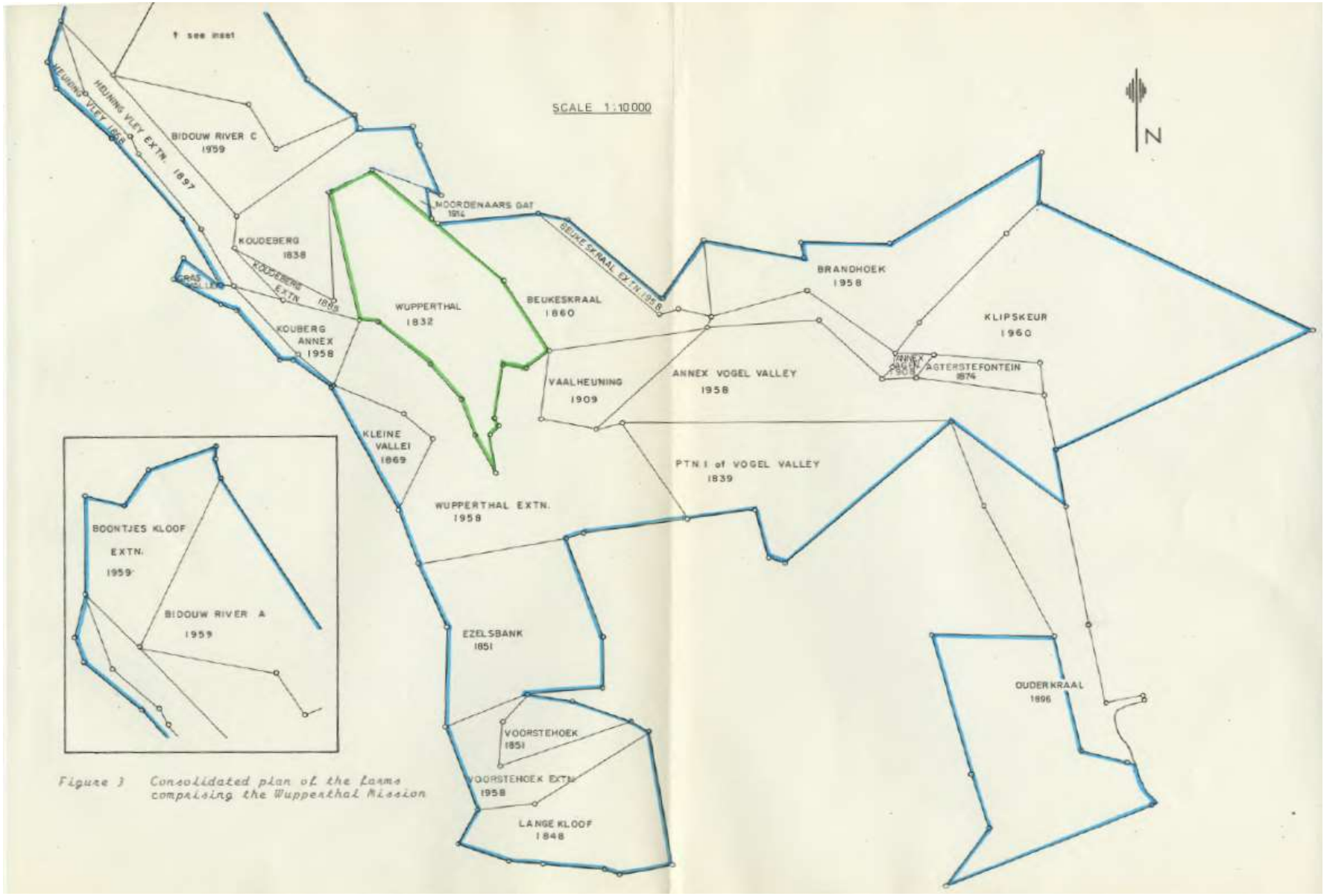
The Moravian church oversees land tenure for the Wuppertal settlement; with a scarce resource and central management by the Asset Manager together with the '*Opsienersraad*'.

"*Land tenure, or the system under which land is held, plays an important role in the development and, ·indeed, the day-to-day functioning of a community. Whether a village, town, city, or country, the security of ownership in land held, as well as the nature (e.g., individual or communal) of the tenure, is an important factor in that community*.

The nature of land tenure influences a region's social and physical environments, and, in turn, the environment of that region is instrumental in shaping its land tenure." (Granger, 1982).

This was no different in the founding years of the Wuppertal mission, during the formative years of the settlement, in 1982 when Granger studied land tenure, or today, another 40+ years later. Access to land and the related tenure is the first step in understanding and planning for sustainable agricultural development for the Wuppertal community.

Figure 3 Consolidated plan of the farms that comprise the Wuppertal settlement (1982).



Source: Granger. 1982.

3.3 Demographics and Population

The population in the Cederberg Municipality was estimated at 55 108 in 2022, compared to the 42 590 inhabitants in the 2011 Census[2]. The official 2011 census indicates the population of the Wuppertal Municipal ward (which is the settlement and surrounding farming area) at 7 411 in *Table 1*. Assuming an average annual growth rate of 1.4%. On the other hand, the number of households in the municipal area is estimated at 15 912 (IDP, 2024), thus 3.6 people per household on average. Considering that the Wuppertal settlements household number is calculated at 457 (*Table 2*), with a similar number of individuals per household assumed, the population of Wuppertal settlement is more than 1 500. According to the IDP document of 2024/2025, the Cederberg Municipality interprets the current growth rate as a 'normal' trend.

Table 1 Population in Cederberg Municipality wards as per Census 2011.

Ward no	Description - Ward	Number of individuals
1	Citrusdal (rural area)	9 849
2	Citrusdal (town area)	7 178
3	Clanwilliam	7 674
4	Graafwater	8 515
5	Elands Bay, Lamberts Bay & Leipoldtville	9 141
6	Wuppertal	7 411
	TOTAL	49 768

Source: IDP, Cederberg Municipality. 2024.

Table 2 Number of households as per Wuppertal Outstation

	Description - Outstation	Number of households
1	Heuningvlei & Heiveld	33
2	Langbome	34
3	Suurrug	21
4	Nuweplaas	35
5	Prinsekraal	23
6	Beukeskraal	41
7	Langkloof	22
8	Kleinvlei & Agterstevlei	33
9	Martiensrus	10
10	Grasvlei	7
11	Eselbank	26
12	Witwater	12
13	Langkuilshoek	2
14	Bo-Martiensrus	5
15	Brugkraal	3

2 Census 2011: it's the latest available data providing a breakdown of the population per ward

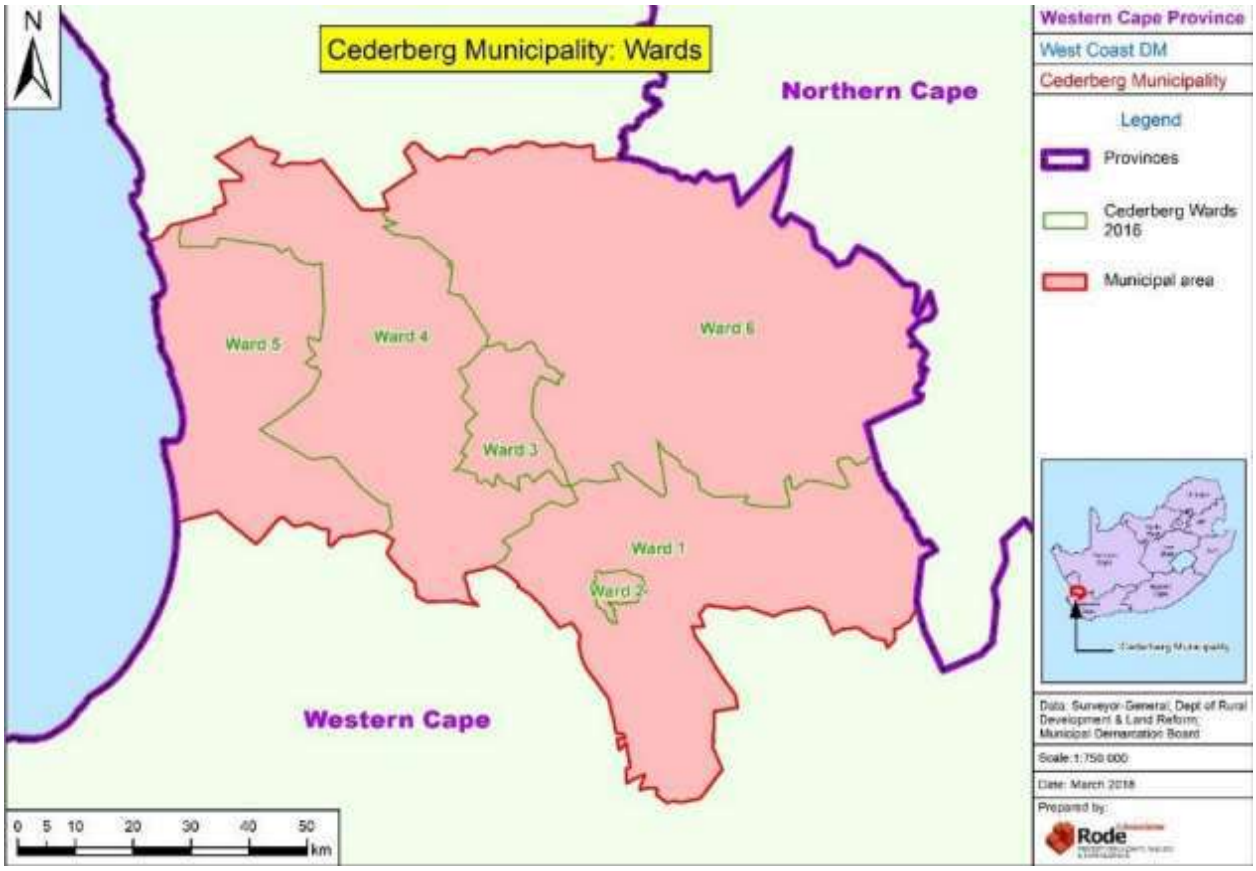
16	Wuppertal	150
	TOTAL	457

Source: Cederberg Municipality, Ward councilor's records, 2024.

The male-to-female ratio is in the 1:1 range for the municipal area. The racial composition is determined at 68.9% coloured, 21.8% black, and 7.9% white, compared to the Wuppertal settlement's population, which has an even higher percentage of coloured people, almost 100%.

Figure 4 indicates the municipal wards; ward 6 is where the Wuppertal settlement is located. This ward does cover a large portion of land, but Wuppertal is the only town with its outstations.

Figure 4 Map of the wards in the Cederberg Municipality



Source: IDP, Cederberg Municipality. 2024.

The population by age group was 6.1% above 65 years of age, 71.7% between 15 and 64 years (working age), and 22.3% was in children under 14 years in 2022. Of the 71.7%, the largest number of people is in the age group 15-35 years. This trend confirms the growing economy of the Cederberg Municipality and the possible job opportunities for the young adults who relocated to the area.

3.4 Climate, vegetation and soil

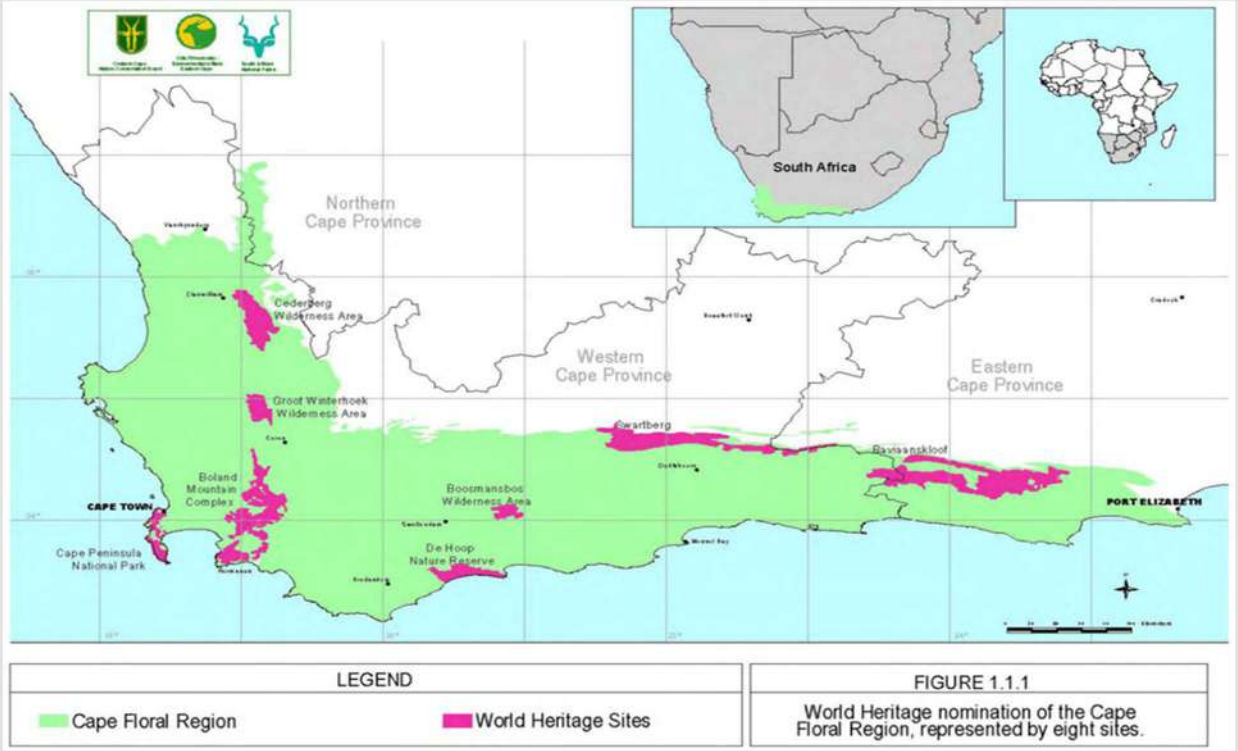
The Wuppertal settlement falls into the Cape Fold Belt, which is characterised by a set of nearly parallel ranges of sandstone-folded mountains.

Natural vegetation to the east in *Figure 1* is karoo-like Bokkeveld, with low dispersed ground cover with scrubs and succulent vegetation. The contrasting rainfall patterns, and geology are where the succulent karoo meets the Cape Fynbos vegetation type. The northwestern and southern stretch of the settlement has a more diverse Cape Fynbos with a high percentage of ground cover, and layering plant growth is noticeable. The fynbos layers are found on the quartzite sandstones towards the fast-weathering shales lower down the mountain areas, while the areas along the river have vlei/riverine-like vegetation where the deep sandy soil underlies the lower areas on higher ground.

The area marked in pink in **Error! Reference source not found.** and green in **Error! Reference source not found.** on both maps indicate the Cederberg Wilderness Area.

The area towards the mountains and 'vleie' generally has sufficient water resources due to run-off from the surrounding mountains and the area being fed by perennial river systems and thus remains well-watered even in drought conditions but is vulnerable in the rainy season. The main source of water for Wuppertal and the outstations is the Tra-Tra River and its side branches, which flows alongside the productive land that is used for gardening plots.

Figure 5 Cape floral region



Source: Cape Nature. 2024

The settlement falls in a winter rainfall area, with a dry, sunny Mediterranean climate in general. Summer temperatures can rise above 40˚C easily, and temperatures can reach zero at night in winter. Snow can be expected on the surrounding peaks, while frost is unfortunately a common occurrence that can damage crops during the winter. *Table 3* shows the monthly temperatures, rainfall, and humidity for Wuppertal.

Table 3 Wuppertal weather by month

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Nov	Oct	Dec	Year
Record high °C (°F)	39.46 (103.03)	40.45 (104.81)	38.48 (101.26)	35.52 (95.94)	30.58 (87.04)	27.62 (81.72)	28.61 (83.5)	31.57 (88.83)	36.5 (97.7)	38.48 (101.26)	38.48 (101.26)	38.48 (101.26)	40.45 (104.81)
Average high °C (°F)	27.94 (82.29)	28.12 (82.62)	26.6 (79.88)	23.27 (73.89)	21.03 (69.85)	17.51 (63.52)	17.33 (63.19)	18.53 (65.35)	20.85 (69.53)	22.87 (73.17)	24.37 (75.87)	26.38 (79.48)	22.9 (73.22)
Daily mean °C (°F)	23.4 (74.12)	23.47 (74.25)	22.04 (71.67)	18.86 (65.95)	16.53 (61.75)	13.19 (55.74)	12.9 (55.22)	13.89 (57.0)	16.27 (61.29)	18.23 (64.81)	19.49 (67.08)	21.83 (71.29)	18.34 (65.01)
Average low °C (°F)	15.71 (60.28)	15.6 (60.08)	14.24 (57.63)	10.88 (51.58)	8.78 (47.8)	5.79 (42.42)	5.17 (41.31)	5.2 (41.36)	7.47 (45.45)	9.73 (49.51)	11.08 (51.94)	13.99 (57.18)	10.3 (50.54)
Record low °C (°F)	7.89 (46.2)	5.92 (42.66)	5.92 (42.66)	1.97 (35.55)	0.99 (33.78)	-0.99 (30.22)	-1.97 (28.45)	-0.99 (30.22)	-0.99 (30.22)	1.97 (35.55)	1.97 (35.55)	7.89 (46.2)	-1.97 (28.45)
Average precipitation mm (inches)	43.46 (1.71)	33.66 (1.33)	28.87 (1.14)	25.07 (0.99)	26.48 (1.04)	32.71 (1.29)	35.2 (1.39)	37.11 (1.46)	26.83 (1.06)	48.05 (1.89)	37.18 (1.46)	24.91 (0.98)	33.29 (1.31)
Average precipitation days (≥ 1.0 mm)	6.64	5.92	5.65	4.67	4.39	5.48	4.39	4.76	5.11	6.64	5.83	6.1	5.47
Average relative humidity (%)	62.73	62.05	63.97	61.03	60.26	58.58	59.72	59.13	60.91	62.03	61.62	62.31	61.2
Mean monthly sunshine hours	13.17	11.34	10.73	10.06	8.02	8.0	7.99	9.86	10.76	11.88	13.03	13.43	10.68

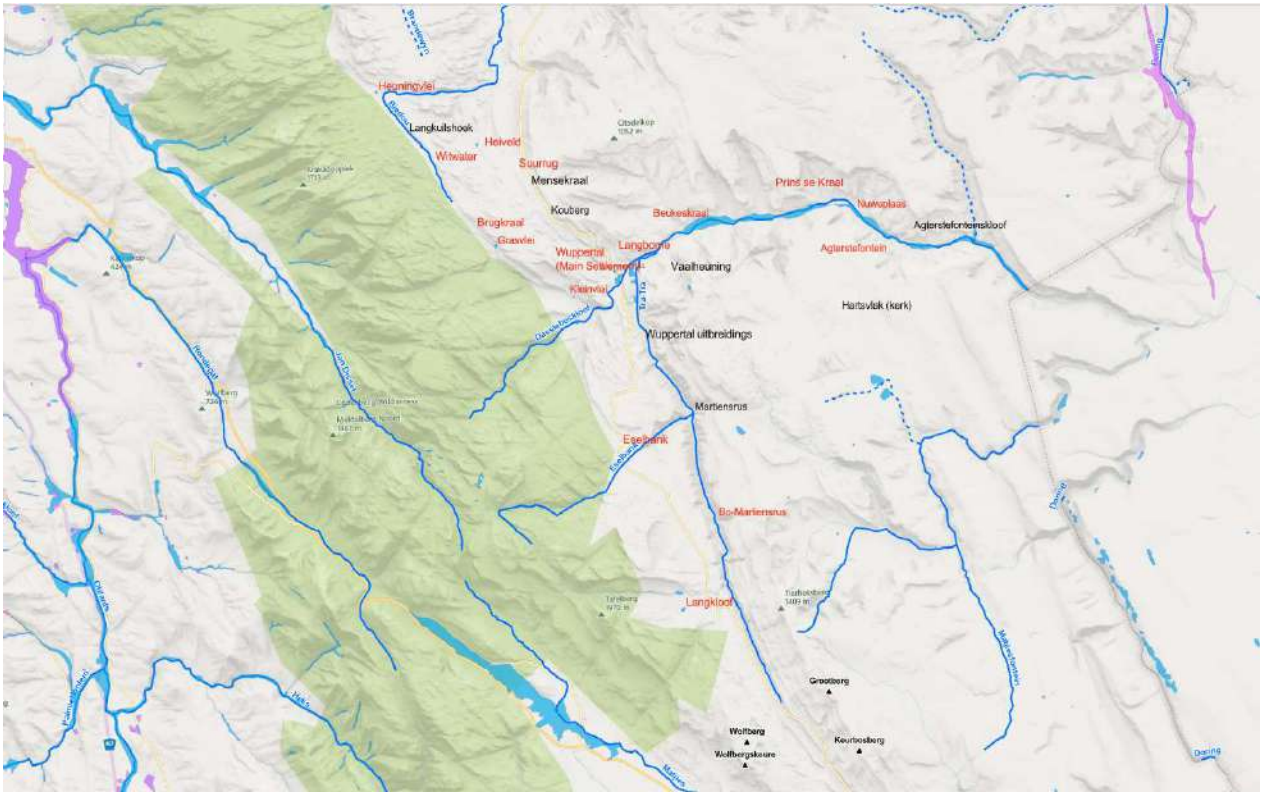
Source: Weather and climate. 2024.

The area towards the mountains and '*vleie*' generally has sufficient water resources due to run-off from the surrounding mountains and the area being fed by perennial river systems and thus remains well-watered, even in drought conditions, but is vulnerable in rainy seasons.

The main source of water for Wuppertal and the outstations is the Tra-Tra River and its side branches, which flow alongside the productive agricultural land that is used for gardening plots[3].

3 Gardening plot includes vegetable plots, '*vleituine*' and '*erftuine*'

Figure 6 Map Wuppertal surroundings, with rivers, conservation area, road



Source: CapeFarmMapper. 2024.

3.5 The land

Although the land is owned by the Moravian Church, it can be used by individuals in the community, which needs to be leased or communal. Communal land is usually for grazing. Only those with allocated land can farm on the plots. In most cases, land is leased on a year-on-year basis at a minimum amount payable. The largest portion of the Moravian Church's land is communal; individuals can apply to lease it, a standard lease period is for a year (including the re-application period), and only on a case-by-case application, longer periods of lease will be considered.

The size of the vegetable plots is determined to be approximately 500m^2, and plot sizes seem to vary in size today. It also became evident that the lack of official boundaries doesn't pose a problem to most plot holders, as boundaries become "well-established" over the years, as was the case in the 1980s when Granger's study was conducted. Plot holders mentioned that using ideal plots by individuals other than the original holder or its descendants could cause problems, especially in the case of long-term crops/perennial establishment.

In the past, the '*Opsienersraad*' did take land away from tenants if the land was not being cultivated. Today the situation seems to have changed; community members who have land allocated to them often don't use the land for extended periods, with no or limited consequences.

4 Research setting

4.1 Research method

The information I gathered for the research question was based on prior knowledge and observation during my upbringing in relative proximity to Wuppertal. Informal discussions, questionnaires, observations, and desktop research on the complexity of the study area and its unique history were used as the backbone of the report.

On-site community gatherings were held in October 2024. In total, 145 questionnaires were completed; about 85% of the questionnaires were completed on-site during the community gatherings, and the rest were completed afterwards by the respondents, as they were unavailable on the day of the community gatherings. Community gatherings were held in Wuppertal and 10 outstations, with prior notice to the community via posters as well as word-of-mouth by key community members and the informal community communications network. During the community gatherings, I was accompanied by a direct and/or indirect community representative from the Wuppertal ward.

All members of the community were invited to come and listen to the proposed project presented as well as having the opportunity for a short *Q&A* session followed by completing the questionnaires out of free will. Assistance was provided by me as the investigator, community representatives, as well as other knowledgeable community members when the need arose. All community gatherings and questionnaires were conducted in Afrikaans. The linguistic terms used were direct and basic as the level of education varies substantially within the wider community. Most questions were multiple-choice type questions, and opportunities were provided to add details in writing as well as verbally. No respondents were required to provide their identity on the questionnaire; however, attendance lists were completed. It must be iterated that no cross-referencing was considered, as the purpose was strictly to gain a better understanding of the social profiles of smallholder farmers and their needs and constraints as the main stakeholders.

It must, however, be noted that extreme challenges were faced in all the communities due to continuous power outages, which also disrupted mobile and internet communication efforts the week prior to the community gatherings as well as the following weeks.

4.2 Research outcomes

These informal discussions and questions focused on the social profiling of respondents, livelihood, and basic socio-economic data. Furthermore, it looked at the needs and constraints factors for those who farm and those prospective farmers.

The findings from the questionnaires are discussed in this section of the report.

4.2.1 Gender, age & education distribution

As mentioned, 11 locations were visited during the community gathering phase of the project (*Table 4*). All outstations marked with the '#' symbol were visited for a community gathering. The number of respondents

per location is indicated in *Table 4,* 145 respondents provided feedback via the questionnaire. Of these, 44.8% (n=65) were male, 49.7% (n=72) were female, and 5.5% (n=8) did not respond to this question.

Table 4 Number of respondents per outstation and gender distribution per respondents' location

	Outstation	Community gathering at this location	Number of respondents from the outstation attending any location	Number of respondents from the outstation attending any location – as per gender		
				Male	Female	No response
1	Heuningvlei	#	14	9	3	2
2	Witwater	#	9	1	8	0
3	Brugkraal	#	6	2	3	1
4	Grasvlei		7	2	4	1
5	Agterstevlei		5	2	3	0
6	Wuppertal	#	4	4	0	0
7	Beukeskraal	#	25	12	12	1
8	Langbome	#	2	1	1	0
9	Kleinvlei	#	14	6	8	0
10	Eselbank	#	16	7	9	0
11	Langkloof	#	16	6	10	0
12	Prinsekraal	#	1	1	0	0
13	Nuweplaas	#	22	11	9	2
14	Agterstefontein		1	1	0	0
15	Martiensrus		3	0	2	1
	TOTAL		145	65	72	8

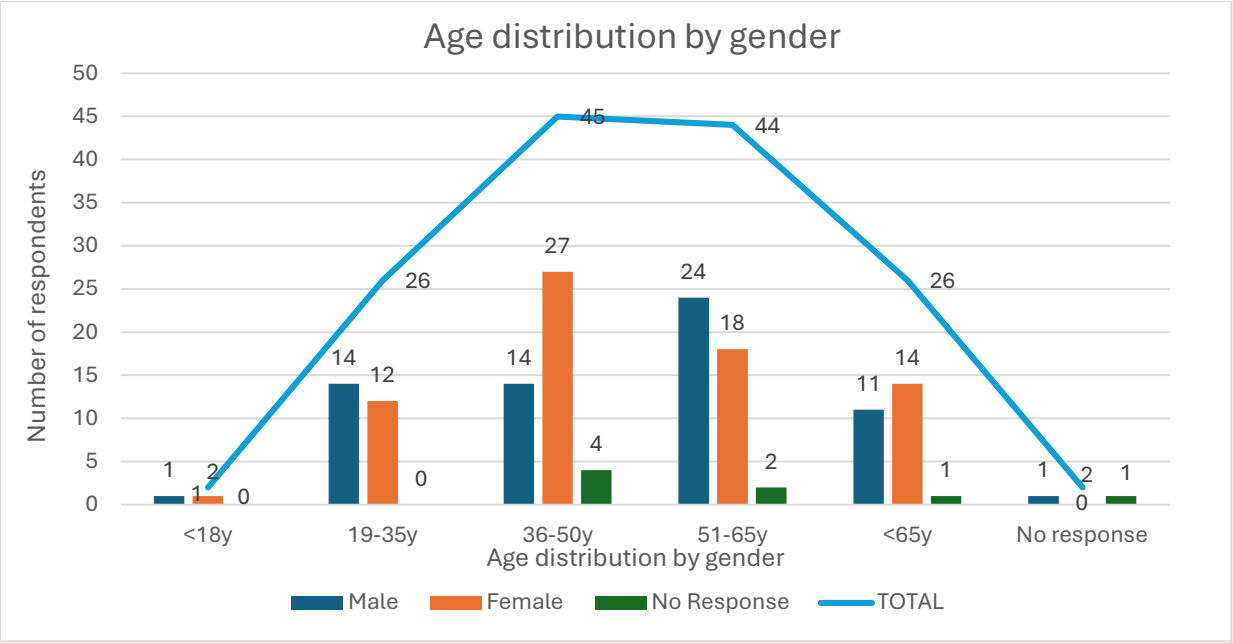
The age distribution is detailed in Table 5; 2 respondents were younger than 18 but confirmed to be older than 15 (thus in working age), 26 respondents were between 19 and 35 years of age, 45 were between 36 and 50 years, 44 were between 51 and 65 years, and 28 respondents were older than 65 years. Thus, 117 respondents (81% of those with feedback) in total are of working age (15-65 years).

Within the total working age group of 117, 45.3% (n=53) are male, and 49.8% (n=58) are female, with 2 respondents with no response in terms of their gender. In total, 44.8% male and 49.7% female. Figure 7 shows the highest concentration of respondents between 36 and 56 years of age, followed by the age group 19 to 35 on one side and older than 65 years on the other side of the bell-shaped graph. This indicates a normal age distribution. The mean age of all the respondents is 44.5 years; age distribution is symmetrically clustered around the mean.

Table 5 The age distribution per respondents' location

			Number of respondents from the outstation attending any location – as per age distribution					
	Outstation		<18y	19-35y	36-50y	51-65y	<65y	No response
1	Heuningvlei	14	0	3	5	4	2	0
2	Witwater	9	0	2	2	3	2	0
3	Brugkraal	6	1	1	0	4	0	0
4	Grasvlei	7	0	2	3	2	0	0
5	Agterstevlei	5	0	2	0	1	2	0
6	Wuppertal	4	0	2	0	1	1	0
7	Beukeskraal	25	0	1	6	7	11	0
8	Langbome	2	0	0	1	0	1	0
9	Kleinvlei	14	0	4	5	3	2	0
10	Eselbank	16	0	0	8	5	3	0
11	Langkloof	16	0	2	4	8	2	0
12	Prinsekraal	1	0	0	1	0	0	0
13	Nuweplaas	22	1	7	8	5	0	1
14	Agterstefontein	1	0	0	1	0	0	0
15	Martiensrus	3	0	0	1	1	0	1
	TOTAL	145	2	26	45	44	26	2
	Male	65	1	14	14	24	11	1
	Female	72	1	12	27	18	14	0
	No Response	8	0	0	4	2	1	1
	TOTAL	145 (100%)	2 (1.4%)	26 (17.9%)	45 (31.0%)	44 (30.3%)	26 (17.9%)	2 (1.3%)

Figure 7 Age distribution by gender



The school played an important central role throughout the development of Wuppertal and the outstations. Over the years, smaller schools were established in some of the outlying areas, but these were closed, and all children needed to attend school in Wuppertal, with a well-established hostel for those from far away. This is the case for rural children, not only in Wuppertal or the nearby Clanwilliam area; it is the norm for all children coming from farms and communities in rural areas.

The school in Wuppertal caters to children up to Grade 8. After that, children can continue school in Clanwilliam, either at Augsburg Agricultural Gymnasium or Clanwilliam Senior Secondary School. Some children even attend school in Cape Town or other areas, normally where relatives reside.

School attendance by respondents is indicated in *Table 6, Figure 8* and *Figure 9*. As evident from the data and Keahey (2018), there is a relatively low gender inequality in terms of school attendance. There is high access to education until high school, but unfortunately, a much smaller portion of children finish high school; about 22% of the female and 17% of the male respondents reach the matric (Grade 12) level. It is believed that the level of education offered by the local school does play a role, but there are most certainly other factors not investigated in this phase or project that do contribute to this issue, as voiced by community members.

Table 6 School attendance by gender

Number of respondents attending school				
	Male	Female	No response	TOTAL
No school attendance	1	0	0	1 (0.7%)
Graad 1-3	1	0	0	1 (0.7%)
Graad 4-6	7	2	3	12 (8.3 %)
Graad 7	17	16	3	36 (24.8%)
Graad 8-11	27	35	0	62 (42.8%)
Graad 12	11	16	1	28 (19.3%)
No response	1	3	1	5 (3.4%)
TOTAL	65 (44.8%)	72 (49.7%)	8 (5.5%)	145 (100%)

Figure 8 School attendance by gender

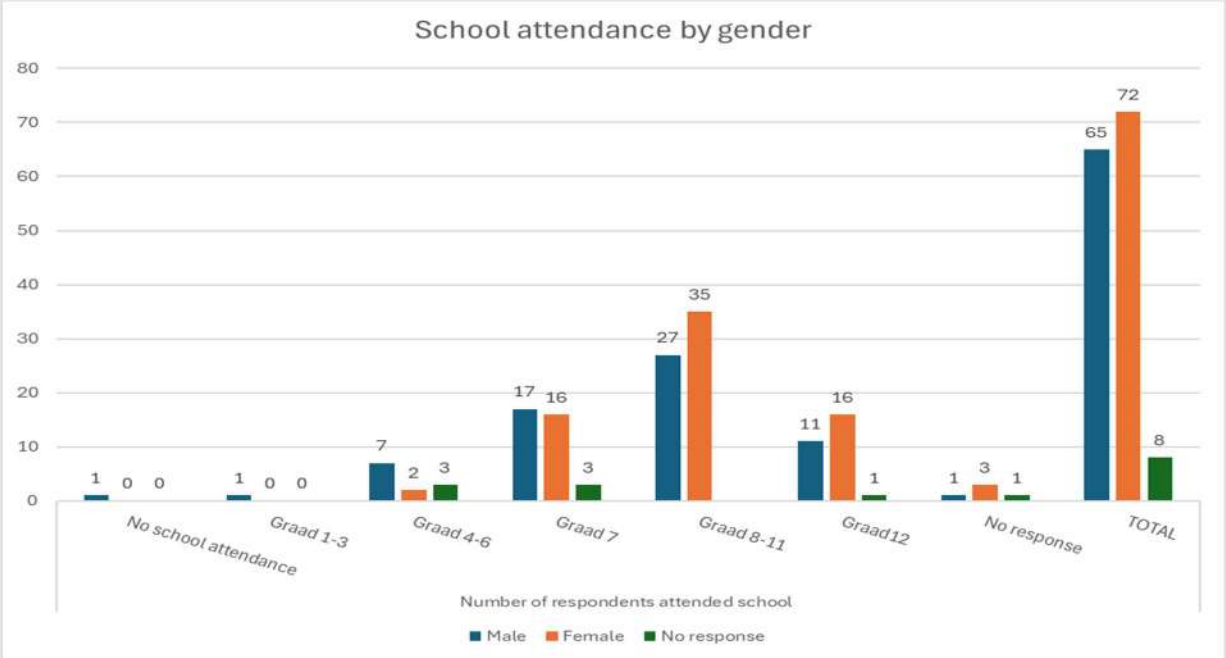
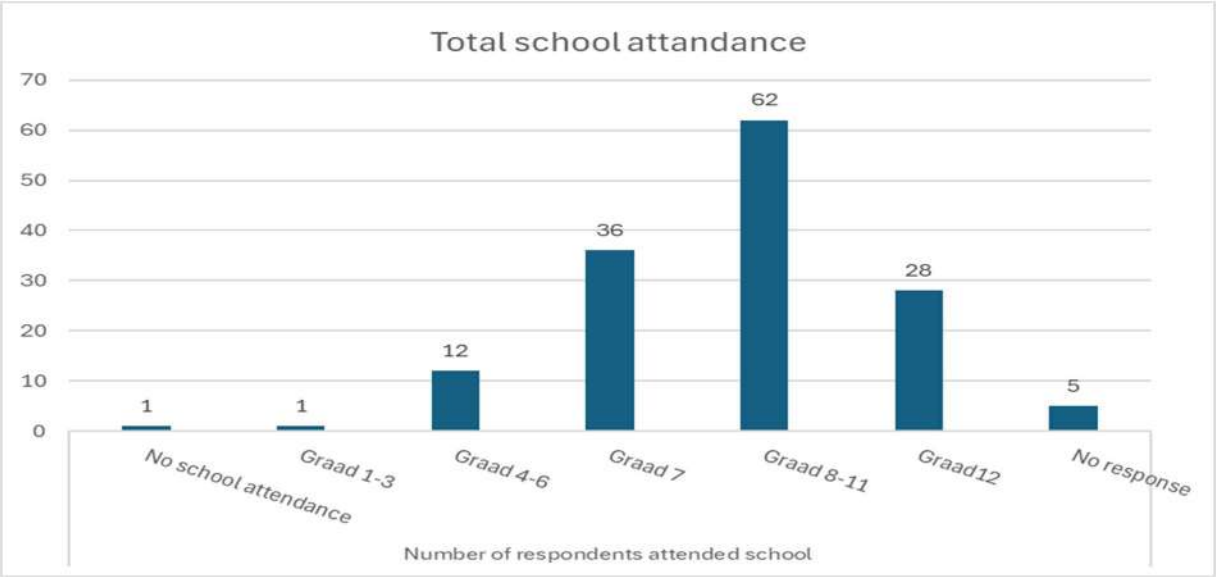


Figure 9 Total school attendance



The school and the church are seen as pillars in developing and maintaining a high-quality workforce and standard of behaviour in rural communities.

Approximately 50% of respondents attended some form of post-school training (short course) either through work or training sessions. The gender distribution leans slightly towards male attendance. The short course training ranged from agricultural-related training (plants, animal production, soil management, organic or biodynamic farming) to tourism, policing, firefighting, paramedics (including basic first aid, occupational health and safety), social assistance, security, trades such as masonry and electrical, librarian, computers, accounting, and insurance.

Table 7 Attendance of short training courses

	Number of respondents attended short training courses			
	Attended training	Didn't attend training	No response	TOTAL
Male	35	30	0	65 (44.8%)
Female	34	37	1	72 (49.7%)
No response	5	3	0	8 (5.5%)
TOTAL	74 (51%)	70 (48.2%)	1 (0.7%)	145 (100%)

Table 7, indicates that 74 respondents attended some form of training after school. 21 of these respondents (28%) mentioned that it was more than just the standard short courses; their training extended towards months or even years; this represents 14% of all respondents.

From the community gatherings, it was clear that respondents with lower levels of education were confused and differed on the expected feedback in the section on further education; therefore, the data needs to be interpreted in this context.

4.2.2 Household composition and sources of income

Table 8 and *Figure 10*, show the different combinations of household compositions in the Wuppertal settlement. The most common household composition, 50 of the 145 households (34%), is the two-adult household[4] with children. The second most common combination is individuals living with other people, who are not their children or grandparents, 12% of households.

Children living with grandparents and children living with other adults (not parents or grandparents) represent 15 households (10%). It was mentioned that these children are raised with funds from city-dwelling parents or parents who work in other places or even on social grants. As work opportunities in Wuppertal are scarce, the exodus of youth and/or those who are still job seekers is prevalent. Young adults (or others) who left Wuppertal in search of better opportunities choose to return to “mission life" later in life or have their families living in Wuppertal while they travel for work.

Female-headed households are common (Keahey, 2018); of the 15 households with a single person with children, 33% are male-headed and 67% are female-headed. 93% of the respondents in these single-person-headed households have an education level between Grade 8 and Grade 12. Keahey (2018) further mentions that young women have custody of the children and will only move away from their parents when a household is established or when the individual marries. In the households with only grandparents and children,100% of these households are headed by females. It is further noted that parents see the benefits in their children growing up in the Wuppertal community for safety and general well-being.

Table 8 The number of households - combinations for those living in the same household

Combinations for those living in the same household	Number of households
Individual person	11
Individual person & children	15
Individual person & grandparents	3
Individual person & other people	18
Individual person, children & other people	3
Individual person, children & grandparents	4
Two adults	10
Two adults & grandparents	1
Two adults & children	50
Two adults, children & grandparents	2
Two adults, children & other people	4

[4] **Two-adult households** refer to 2 parents/partners, not necessarily married but living together, but refer to two adults that oversee the household.

Two adults, children, grandparents & other people	1
Grandparents	4
Grandparents & children	7
Grandparents, children, other people	2
Children & other people	8
No response	2
TOTAL	145

Table 9 and *Figure 11* indicate the breakdown of the sources of income for the respondents; 76 of the 145 respondents (52%) confirmed a single source of income: full-time work, part-time work, farming, social grants (e.g., children, old age, or disability pension), assistance (from family, the church, or other). The other 48% of respondents have an income from multiple sources, thus a combination of full-time work, part-time work, farming, social grants (e.g., children, old age, or disability pension), or assistance (from family, the church, or others).

Table 9 further shows that 36 households (25%) rely completely on social grants, and 24 households (16%) rely on farming combined with social grants. A further 22 households (15%) rely solely on farming for income. The 3 categories of income—part-time work (8%), part-time working in combination with farming (also 8%), and part-time work with social grants (9%)—support 25% of the households.

South Africa's social grant system intends to reduce poverty and increase health, education, and nutrition investment. Figure 10 indicates Cederberg Municipality's social grant dependents compared to Wuppertal's. The 25% who rely on social grants in Wuppertal is significantly higher than the 15% dependence on these grants mentioned in the IDC 2024/2024 of the Cederberg Municipality (*Table 10*). In total, 79 households (54%) are relying in some form on social grants, either completely or in combination with other sources of income.

According to Keahey (2018), food insecurity occurs more frequently in households with a female head despite their involvement in commercial activities. The data suggests that combining more than one source of income plays a major role in household survival strategies and as well as high state dependency.

Figure 10 Percentage of households - combinations for those living in the same household.

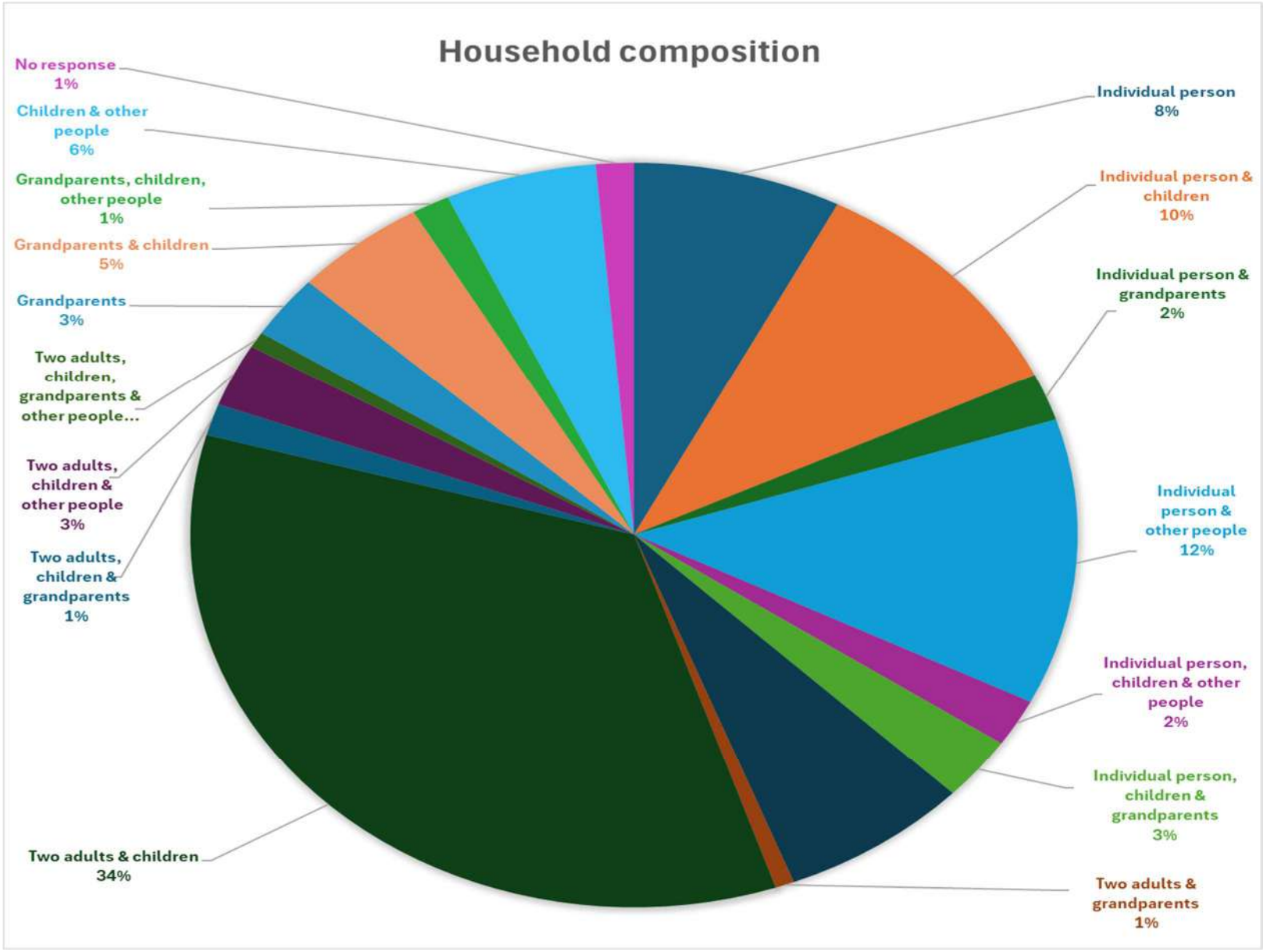


Table 9 The number of households - combinations of sources of income per household

Combinations for sources of household income	Number of households
Work full time	3
Work full time & farming	3
Work full time & assistance	1
Work full time, part time, farming & social grants	1
Work part time	11
Work part time & farming	11
Work part time & social grants	13
Work part time, farming & social grants	5
Work part time, farming & assistance	2
Farming	22
Farming & social grants	24
Farming & assistance	1
Social grants	36
Assistance from church, family members or other	4
No response	8
TOTAL	145

Figure 11 Percentage of households - combinations for sources of income.

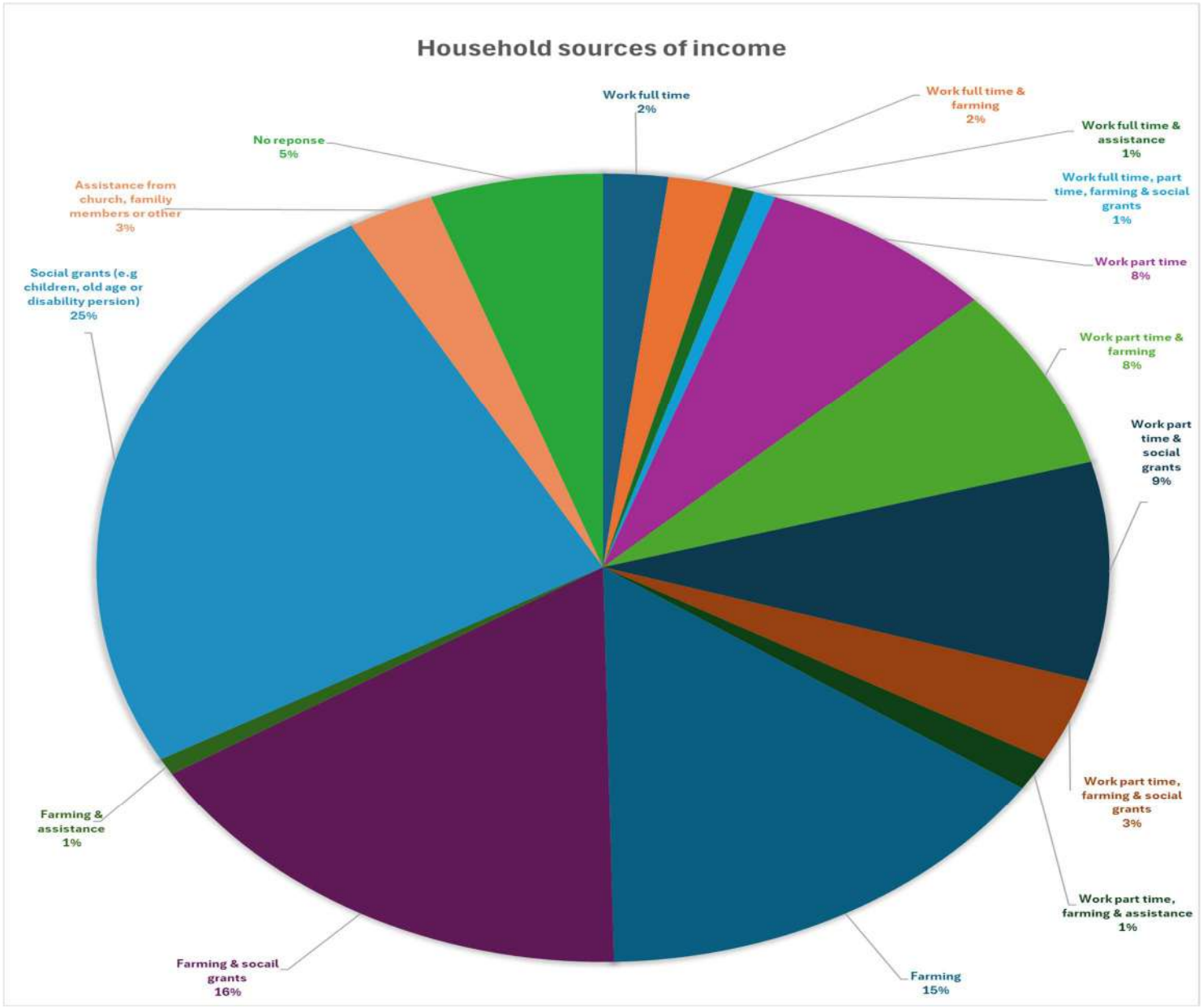


Table 10 Grant distribution, Wuppertal compared to the total in Cederberg Municipality

PAY POINT	Wuppertal (number)	Wuppertal (% of total in Municipal area)	Total number of residents who receive grants in the Cederberg Municipality
Old age	433	10%	4 189
War veteran	2	15%	13
Disabled	197	5%	4 101
Foster Care	20	3%	656
Child Support	288	5%	6 211
Care Dependency	12	6%	208
Combination	0	0%	10
Grant in Aid	180	30%	593
TOTAL	1 132 (Estimated population = 8 880 in 2024)	7%	15 981 (Estimated population = 56 662 in 2024)

Source: Source: IDP, Cederberg Municipality. 2024.

Those who take part in the workforce have either full-time or part-time work; employment ranges from Community Work Programme (CWP) and Expanded Public Works Programme (EPWP) work to construction, drivers, mechanics, masonry, fencing, and work in a library and the financial sector.

The CWP & EPWP are both South African government programmes that provide a safety net for unemployed and underemployed people. This programme provided the opportunity for unemployed individuals of working age to gain work experience, a minimum number of workdays as well as minimum wage and stipends, which provide a basic level of much-needed security for individuals. These projects could include environmental projects, social upliftment, construction months others. According to the Western Cape Local Government, these programmes in the Cederberg Municipality focus on '*cleaning and greening', while other forms of work include the support of the local clinics, early childhood development facilities, and soup kitchens* (Human, 2024). These programmes only employ a few workers each year, but in a community where jobs are scarce, any opportunity is welcomed.

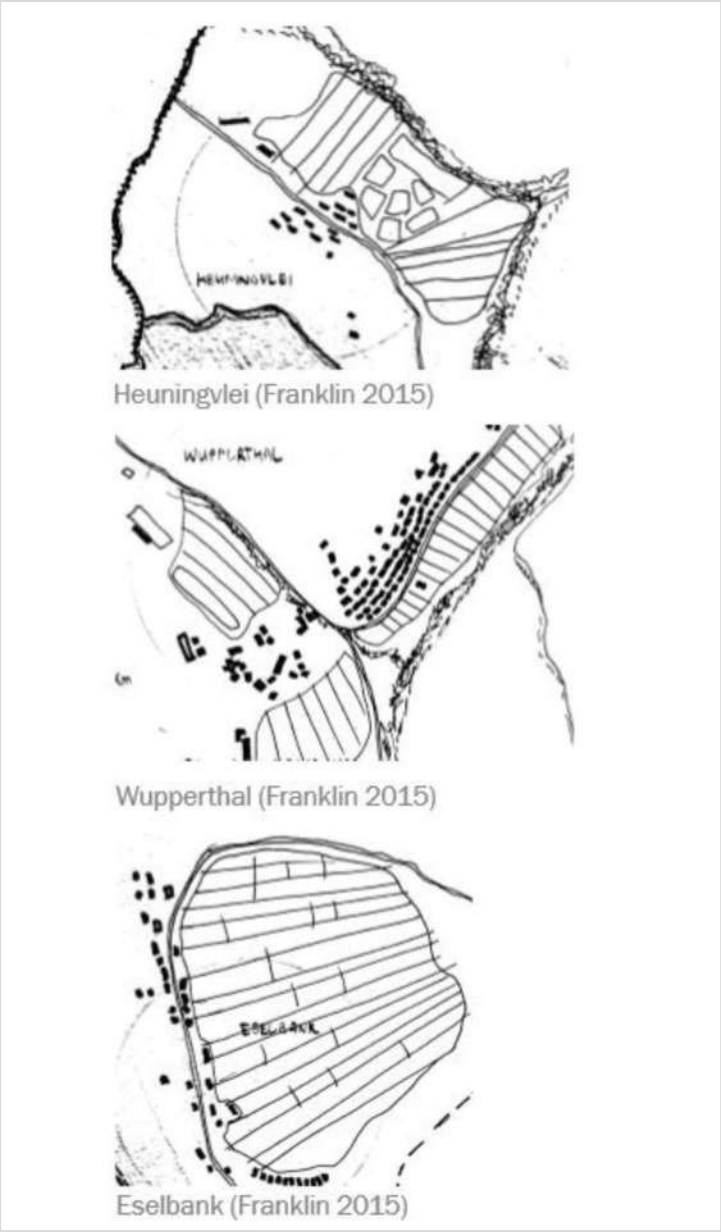
The number of respondents who participate in the CWP and EPWP initiatives is 21 out of the total 145 respondents, 14%; ultimately, these respondents are also indirectly in the state support system, which adds to their dependency on those already on social grants.

4.2.3 Farming activities

Emerging and smallholder agriculture (including livestock) was historically and still is directly and/or indirectly the most important economic activity for the largest fragment of the Wuppertal community. Rooibos tea is the single most important cash crop for Wuppertal. Consequently, the livelihood dependency is high on this crop, which is heavily vulnerable to extreme climate changes and fluctuating prices. Kaplan, 1984, confirmed that wheat and rye farming in the outlying mountain areas has been in decline for years; today, only very small patches of grain might be spotted from season to season.

The plot design concept dates back to the German garden plots during the establishment of the mission in Wuppertal. According to Franklin and Breed (2017), the plot design is in line with the European way of doing things, as the agricultural specialists came from a time in Europe, where agricultural specialists originate from. Franklin and Breed (2017) confirm that garden plots are characterised by their "*hufe*" (strips), which is the distance an ox could plough in one day. The fact that these garden plots are still in use today adds to the significance of agriculture to the Wuppertal community; see *Figure 12*.

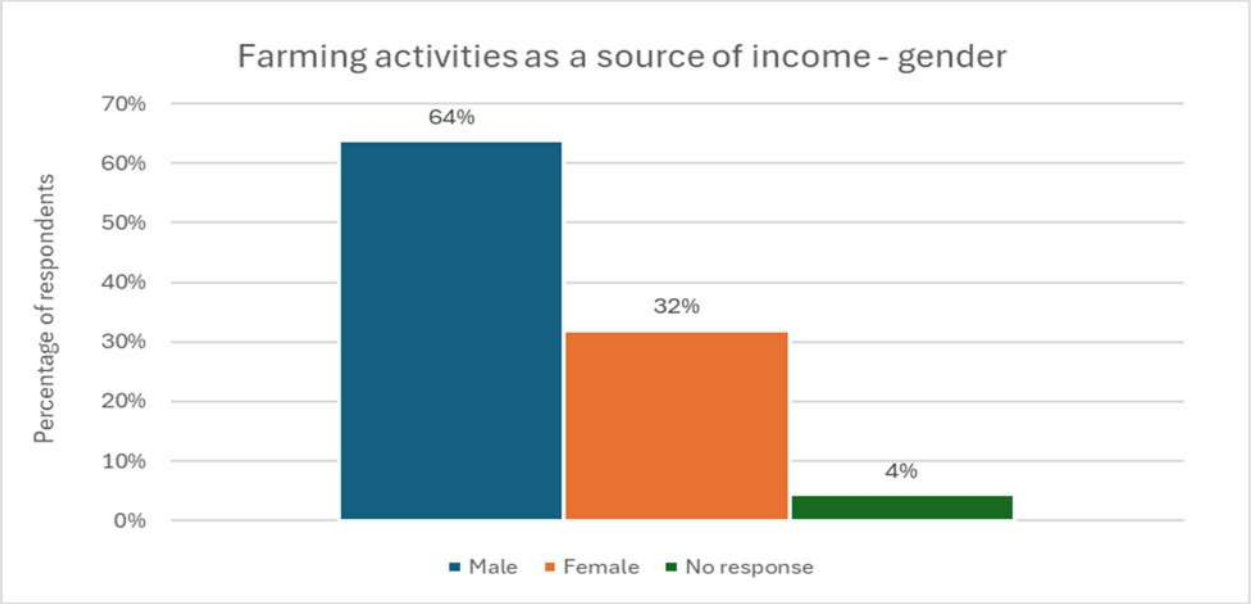
Figure 12 The diagram showing the layout of three of the outstations



Source: Franklin and Breed, 2017 (as from Franklin, 2015)

69 respondents do receive income from farming (47% of the total number of respondents); of those, 44 are male (64%) and 22 are female (32%); 3 respondents receive income from farming, with no reference to their gender (*Figure 13*).

Figure 13 Percentage of respondents with farming as a source of income - gender



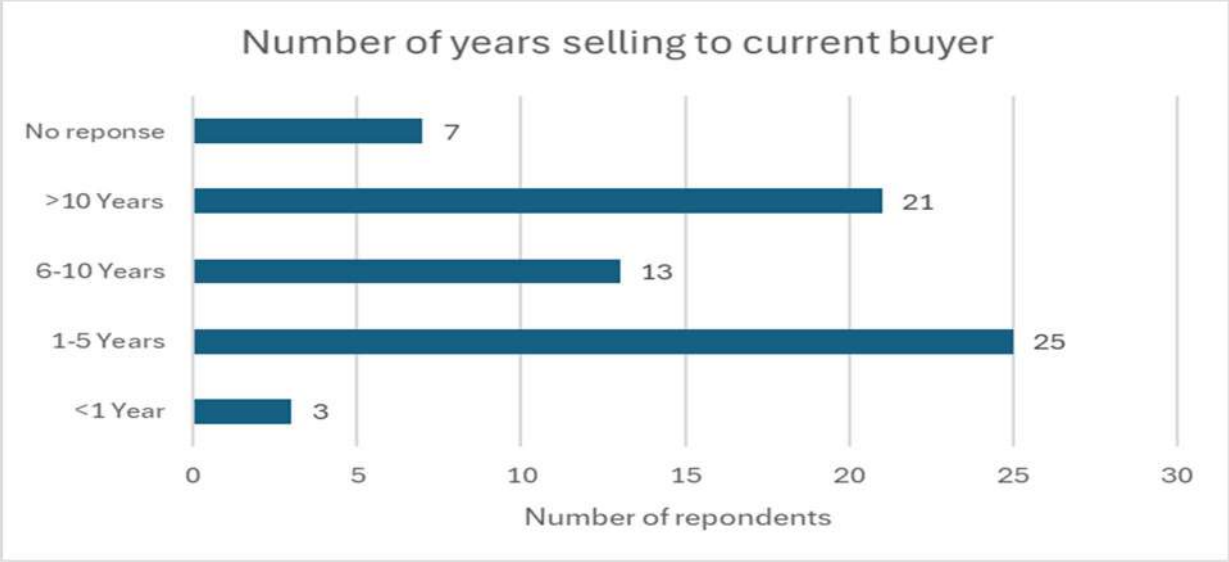
Almost 22% of respondents (n=15) receive an income from farming and only have a single agricultural source: livestock, vegetables, or rooibos tea.

64% (n=44) of respondents deriving an income from farming (n=69), either livestock or vegetables, were male (*Figure 13*). In Keahey's (2018) study, men comprise 75% of these traditionally male occupants, as vegetable gardening symbolised masculinity.

Figure 14 shows that those respondents with income derived from farming are selling to a relatively stable market, as 49% (n=41) of respondents have been selling produce to current buyers for more than 5 years. It is a stable market but also a market where little progress is made regarding new markets, better opportunities, and, consequently, better livelihood strategies. Little progress in terms of market seeking and development on the one side also refers to stability in receiving the monies owed to them by the buyer of the produce; 85.5% of the respondents confirmed that they do receive the money for produce easily. Those who confirmed not receiving the money easily mentioned during the gatherings that the swiftness of payment contributes to their answer, as some of the respondents are rooibos tea farmers; the contractual agreements will determine the payment terms, and it seems like some respondents are not familiar with the detail of the terms.

Mentor involvement may also contribute to the lack of progress; 68% of those who earn income from farming don't have mentors with management, finances, or production knowledge. According to the respondents, the main reason is that no mentor(s) are available.

Figure 14 Number of years respondents - selling to the current buyer



4.2.3.1 Livestock farming

Livestock remains an essential part of the livelihood strategies for community members throughout the settlement. It is a food source and can easily be converted into cash by slaughtering and selling the meat. Community members try to be self-sufficient with meat, as the general dealer in Wuppertal generally does not often stock meat. The cost of maintaining the livestock is relatively low, as the land used for grazing is communal grazing areas also owned by the Moravian church.

Figure 15 Number of respondents with different agricultural activities as a source of income

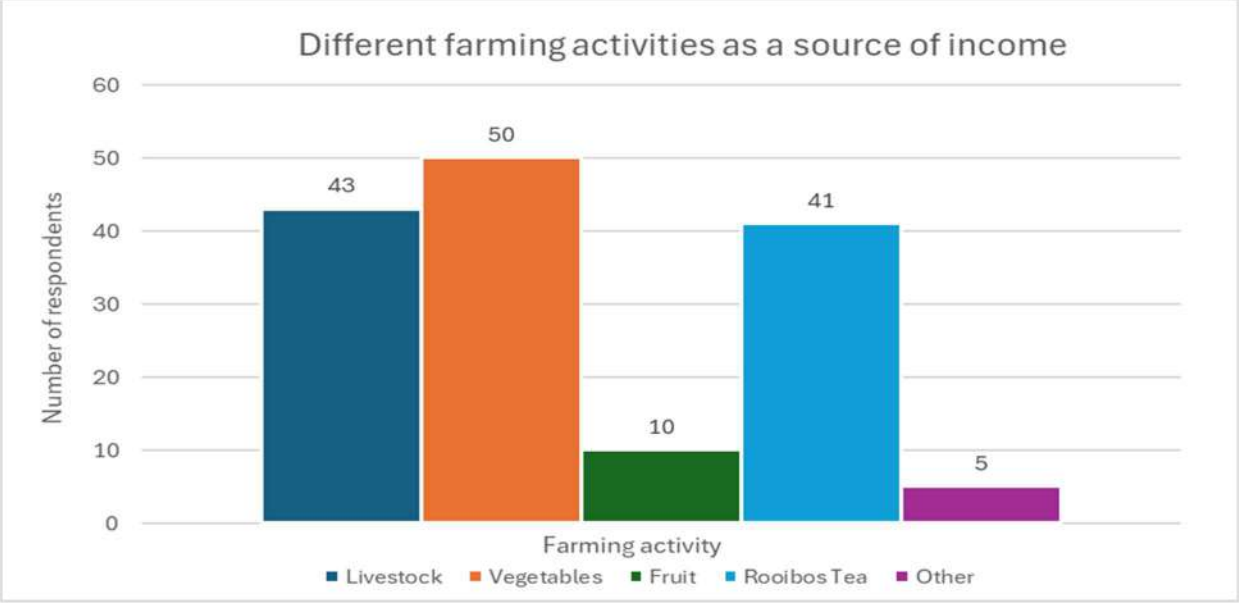
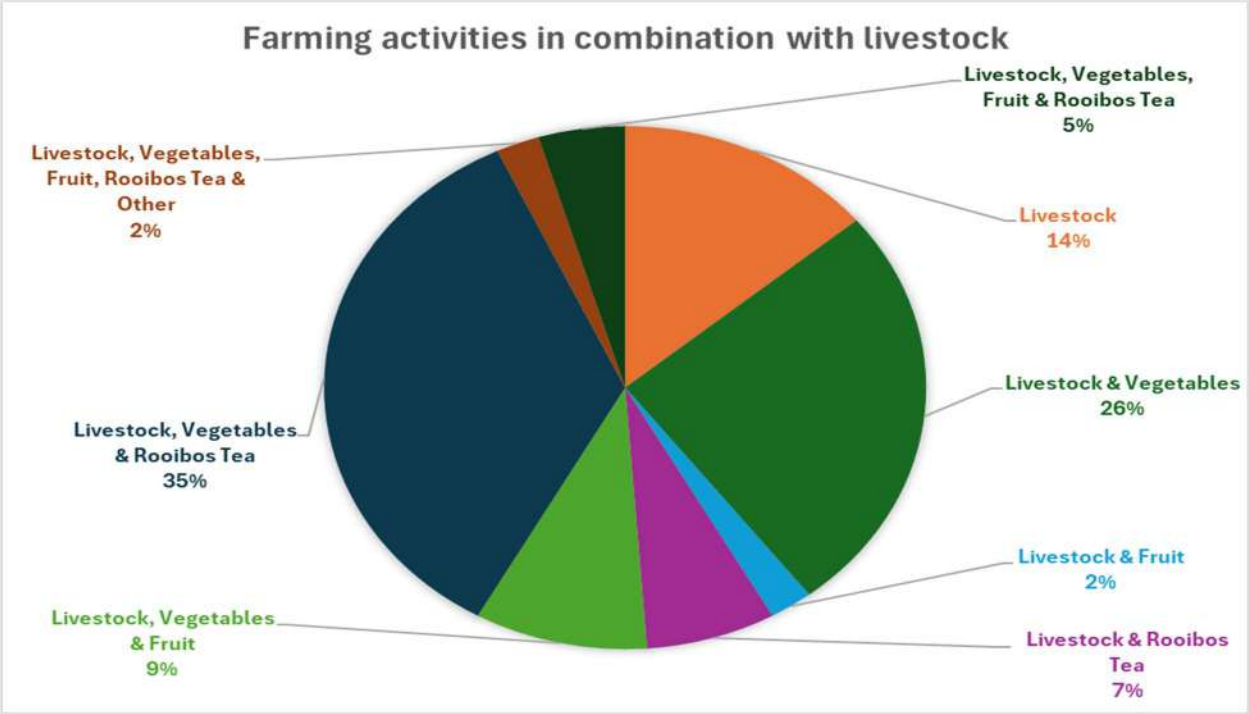


Figure 15 indicates that 62% (43 of the 69) of the respondents farm with livestock, which they mainly do for their own household use. As calculated from data, 86% of those who farm with livestock (various levels) do it in combination with other farming activities.

Livestock numbers vary from year to year and throughout the seasons. In earlier years of Wuppertal's development, overgrazing was mentioned as a serious problem (Kaplan, 1984), as in cases of overgrazing, damage is done to the land as well as the natural vegetation. At that stage, goats and wind donkeys were identified as the main culprits. Overstocking and poor agricultural management practices are leading causes of this problem in communal grazing settings.

As can be expected, the main livestock farming is taking place to the east, in the outstations: Prins se Kraal, Beukeskraal, Nuweplaas, and Agterstefonteinkloof, in the karoo-like Bokkeveld transition area. Communal livestock producers are heavily vulnerable to climate change throughout South Africa, mostly in semi-arid areas (Zuma-Netshiukhwi, 2023), such as the eastern side of Wuppertal.

Figure 16 Percentage of respondents with livestock in combination with other farming activities, detailed



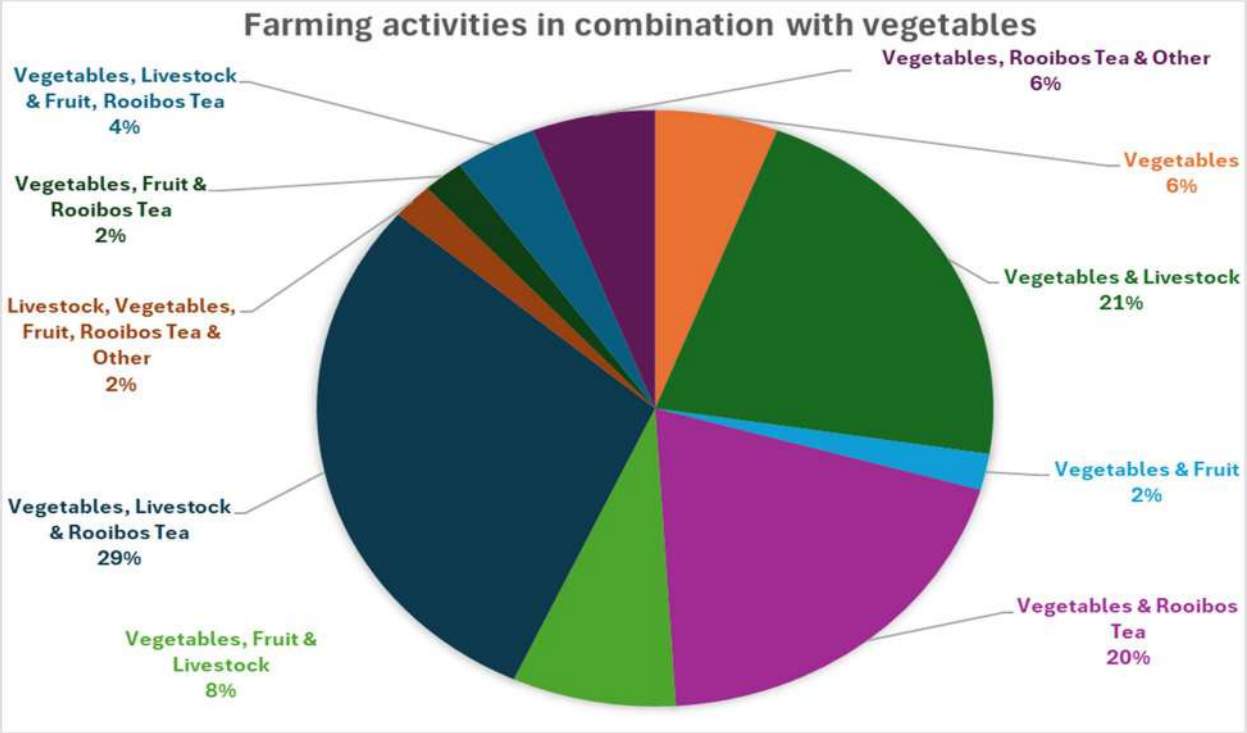
4.2.3.2 Vegetable & fruit farming

Historically, vegetable gardens (plots) were cultivated with pride; these days, vegetable plots are partially cultivated. Vegetable farming is mainly in combination with livestock, fruit, and/or rooibos tea farming; see *Figure 17*. Only 6% of respondents farm with vegetables alone; these respondents are all females who use the produce solely for their household as part of their livelihood strategy.

Some community members believe vegetable farming requires physical hard labour and is the main contributing factor to why more men are listed as vegetable farmers (in combination with other farming activities). 75% (n=51) of those receiving income from farming are involved in vegetable farming, as a single farming activity or in combination with livestock, fruit, or rooibos tea; 37 respondents of the 51 (73%) are male.

75% of the vegetable farmers' produce is sold to the community and assumed equally important for respondents' own household use. The number of producers who sell to the community is most likely higher due to the general dealer in Wuppertal having little and no fresh produce available in most instances.

Figure 17 Percentage of respondents with vegetable farming in combination with other farming activities, detailed



No respondents indicated fruit farming as a single farming activity; fruit production is in combination with other farming activities, and only 11 of the 69 respondents (16%) receiving income from farming activities confirmed fruit production as a source of income.

4.2.3.3 Rooibos farming

"*Rooibos tea farming is seen as the only option for economic survival' because 'there is less rain here and less land, so the land must be used optimally*'," as Keahey (2018) mentioned in the recollection from a conversation with a cooperative manager.

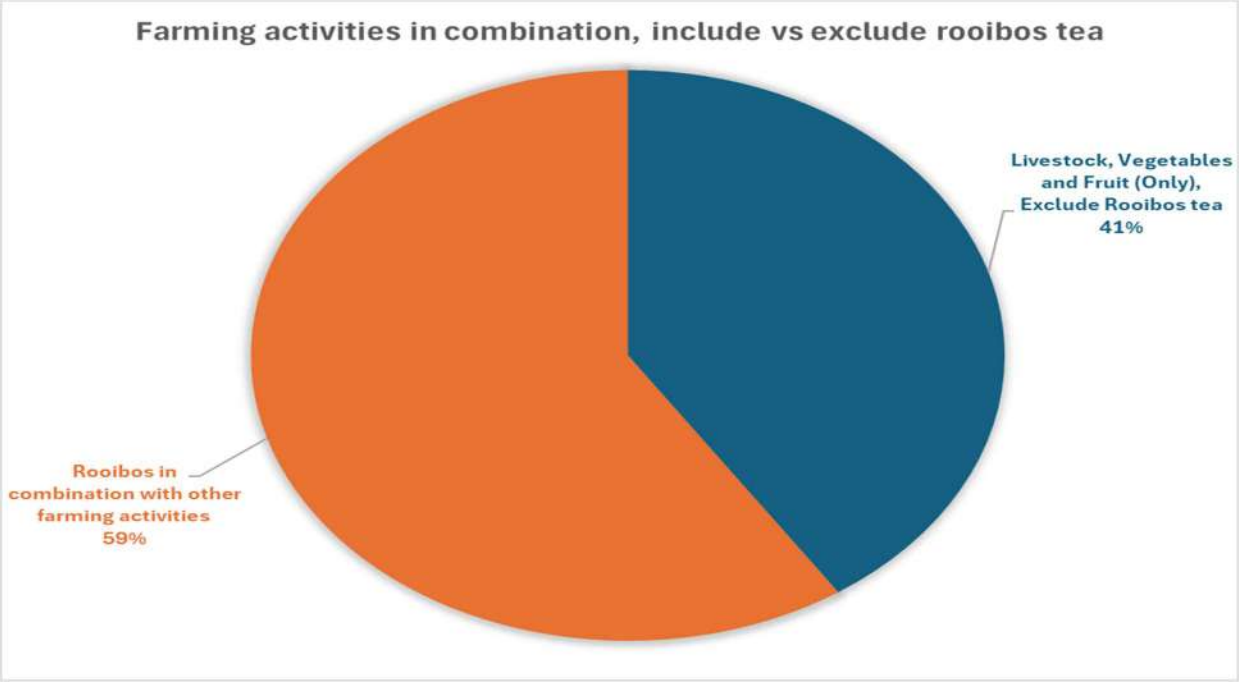
Less than 4% of the land owned by the Moravian church is estimated to be under rooibos tea cultivation (Erasmus, 2013). More arable land is available but is either not being distributed by the church, fallow, or not cleared for rooibos production. Only about 7% of all the land owned by the Moravian church is arable agricultural land (Erasmus, 2013). Clearing of land is also an important factor that must be considered in agricultural development planning, as environmental laws and regulations under the National Environmental Management Act (NEMA) 107 of 1998 determine the extent of actions permitted or not. Land clearing itself is expensive, but the permit application to clear land is another burden to take into account when expansion plans are motivated and considered.

Most small-scale rooibos farmers use less than 2 ha for rooibos farming; with the higher prices due to certifications, farmers have more funds to invest in higher production instead of supplementing income with seasonal work. Crop rotation cycles must be considered in the quest for higher yields and climate change challenges. The rotation practice involves planting in year 1, followed by 4 years of production, where the rooibos tea plants are harvested annually. After year 5, rooibos plants are removed, and oats, rye, or grain mixtures are planted in year 6.

According to ***Error! Not a valid bookmark self-reference.****Figure 18,* 41 respondents earn their agricultural income from rooibos production, which is 59% of all respondents receiving income from farming activities, whereas 41% earn their agricultural income from sources other than rooibos.

The number of households receiving income from rooibos farming is most likely higher, as cooperative farming was indicated by respondents who said to be only involved in livestock, fruit, and vegetables, but the reality indicated that the bulk of cooperative farming is done by those involved in rooibos tea farming.

Figure 18 Percentage of respondents with rooibos tea included and excluded from farming activities



According to Keahey (2018), the physiological characteristics of rooibos enabled women to enter rooibos production, as dry tea plots were more plentiful than vegetable gardens. In Keahey's (2018) study, one-third of the respondents in this traditionally male occupation were female; the findings from the data collected during this study are similar to the data from Keahey. **Error! Not a valid bookmark self-reference.** indicated 29% (n=12) female and 63% (n=26) female rooibos farmers; the balance of the 41 respondents with an income from agriculture didn't indicate their gender. Keahey further mentioned that the level of female involvement in rooibos farming varies but mostly depends on the composition and her responsibilities in the household. This notion seems linked to the traditional gender roles and related property 'ownership.' The land shortage is mentioned in various studies, but it must be remembered that the Moravian church owns the

land, and the church governs the usage (leased) at a minimal fee. The imbalance between distributed land and the number of land seekers is disproportionate, according to Keahey, 2018. Furthermore, those who receive land are not necessarily cultivating the land; it could be due to older age or the fact that the asset management of the Moravian Church in recent years had a stronger hold on land than in the past, which made it more difficult for younger people and more women to gain access and establish themselves as farmers.

Table 11 Gender composition for rooibos farming activities

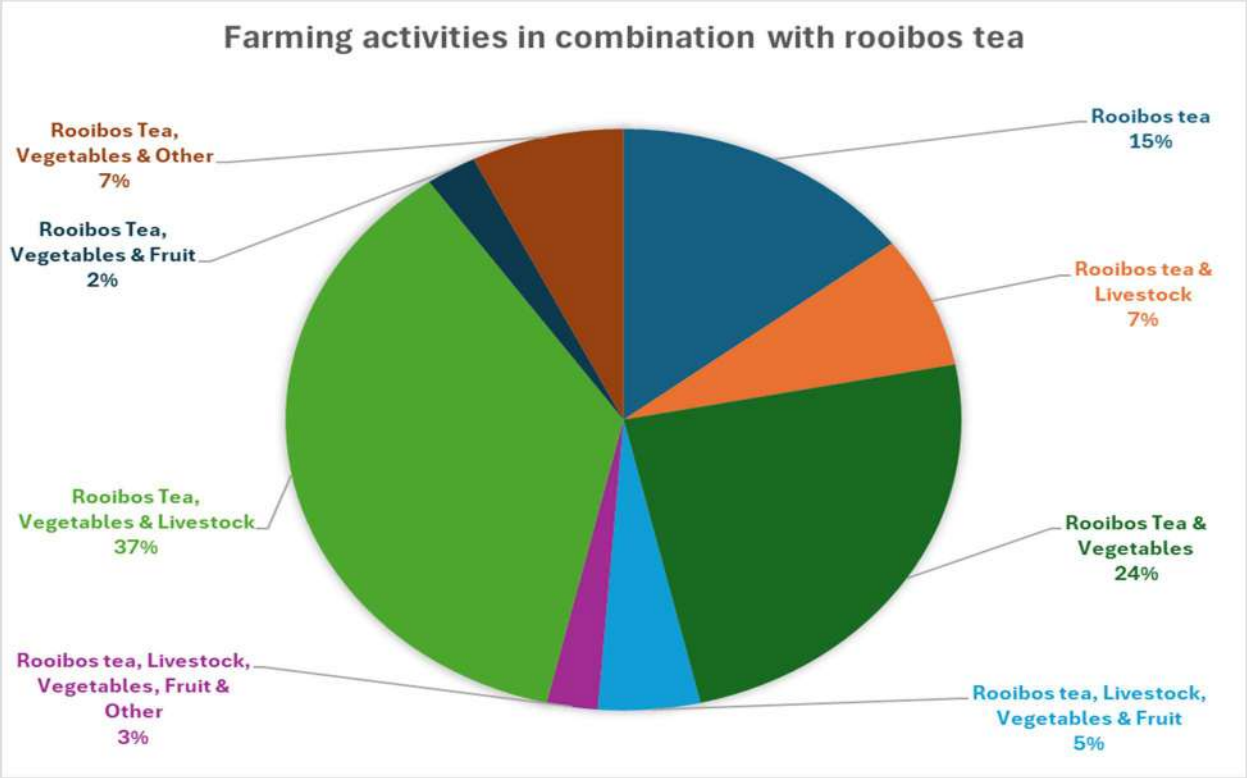
Respondents receive income from rooibos tea farming activities		
Male	26	63%
Female	12	29%
No response	3	7%
TOTAL	41	100%

Rooibos farming has two main activity seasons for producers: planting in the winter and harvesting in the summer, which allow farmers to be vigorously involved in the day-to-day activities for short periods and have the flexibility to contribute the remainder of their time to other farming activities or other working opportunities away from farming. Numerous respondents believe that rooibos farming allows for external work, but the data does not clearly reflect this perspective. Only 27% (n=11) of those receiving income from rooibos farming are actually working away from agriculture. Work opportunities are scarce, which could be a contributing factor to contradicting perspectives and data. In recent years, increasing prices due to certifications have resulted in increased investments in rooibos farming. This could contribute to farmers expanding their once simple production plan and now having a more intense production plan to increase production further, and time available for alternative work is limited.

Figure 19 shows that 15% only farm with rooibos to earn an income, but the combination of rooibos farming with vegetables (24%) or vegetables and livestock (37%) is the most common contributor to income for those involved with rooibos production.

Only those engaged in rooibos tea production indicated that processing takes place at a higher value chain level. At the same time, farmers who grow vegetables, fruits, and livestock affirm that no processing takes place.

Figure 19 Percentage of respondents with rooibos farming as a source of income in combination with other farming activities, detailed

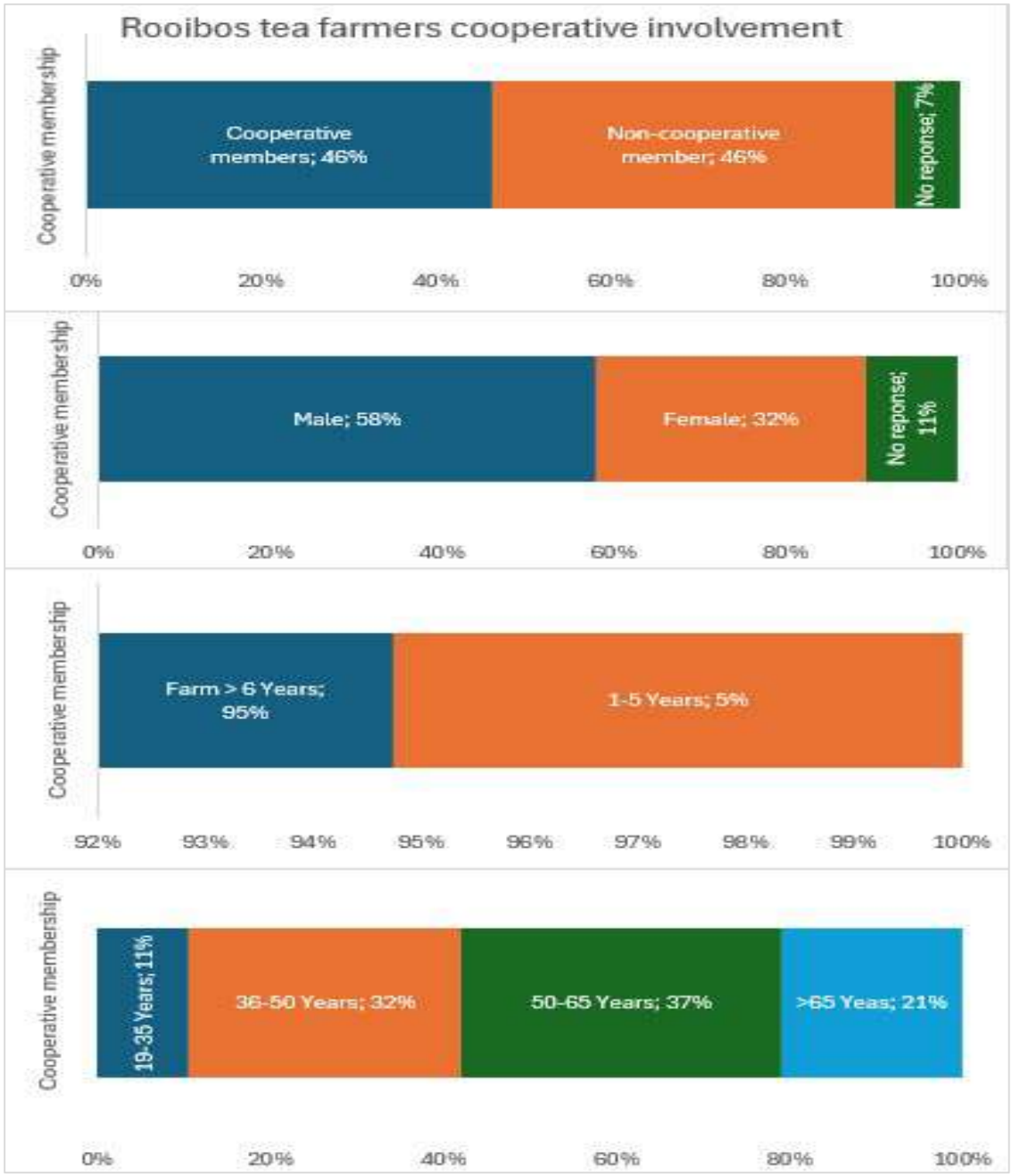


As part of the harvesting season, ground-level processing is the next step in the value chain. The processing is done by commercial farmers who buy the rooibos from individual farmers, or cooperatives process the rooibos as a collective at commercial farmers or processors, or, more recently, cooperatives process the tea themselves. To earn premium prices, cooperatives sell to international buyers.

Not all Rooibos farmers are members of cooperatives; others are entirely independent of the cooperative system. *Figure 20* illustrates that the proportion of Rooibos farmers who belong to a cooperative (n=19) is equivalent to those who farm alone or in partnership but are not associated with a cooperative.

Figure 20 shows that 11 of the 19 respondents (58%) who have rooibos farming as a source of income and belong to a cooperative are male, and 6 respondents (32%) are female. 18 of the 19 respondents (95%) who belong to a cooperative structure have farmed for more than 6 years already. The data further indicates that 37% of the non-cooperative respondents farmed for less than 5 years compared to 63% who farmed for more than 6 years. The average number of members in these represented cooperatives is 34 members, but the member numbers range from 5 to 80 in the various cooperative structures. The data further indicates that the cooperatives represented have a more or less equal split between male and female members.

Figure 20 Percentage of respondents with rooibos farming as a source of income with cooperative involve



4.2.3.4 Cooperative farming

The idea of cooperative farming started in the 1980s already for Wuppertal farmers (Kaplan, 1984), which aimed to bring farmers together. The cooperative structures in Wuppertal are roughly defined as systems where individuals still follow their own structure and practices but sell their raw produce through a central cooperative. Cooperatives seem to function as a central equipment hub and processing and marketing channel, but farmers still see themselves as individual farmers rather than cooperative members. Since certifications have become essential for rooibos tea marketing, cooperatives serve this purpose and consequently promote sustainable production and harvesting of rooibos tea.

A cooperative structure is a focused approach to increase bargaining power but can also be the source of intense conflict. Successful negotiations lead to premium prices when sustainable practices and the necessary certification are in place. The Environmental Monitoring Group (2009) reported a 10% premium on the organic rooibos price for a specific group. This was the case for wild-harvested rooibos, but the cooperative also confirmed premium levels today when they sell directly to international buyers.

Despite extremely low prices in the wider rooibos industry for the past few years, members of the cooperatives who have the necessary certifications are in a much better position than the bulk of the industry's producers. These farmers, however, lack sizable plots and can't produce high volumes, which hinders their ability to compete on a higher level in the rooibos market.

Figure 21 indicates that 65% (n=45) of the respondents have farming as a source of income (n=69) and would consider future or further cooperative involvement. 32 of these respondents are male, and 12 are female. The age distribution is evenly distributed between the ages 36 and 50 and 50-65, with a smaller number of respondents in the age groups 19-35 and older than 65.

Figure 21 Number of respondents with currently farming – consider future cooperative involvement

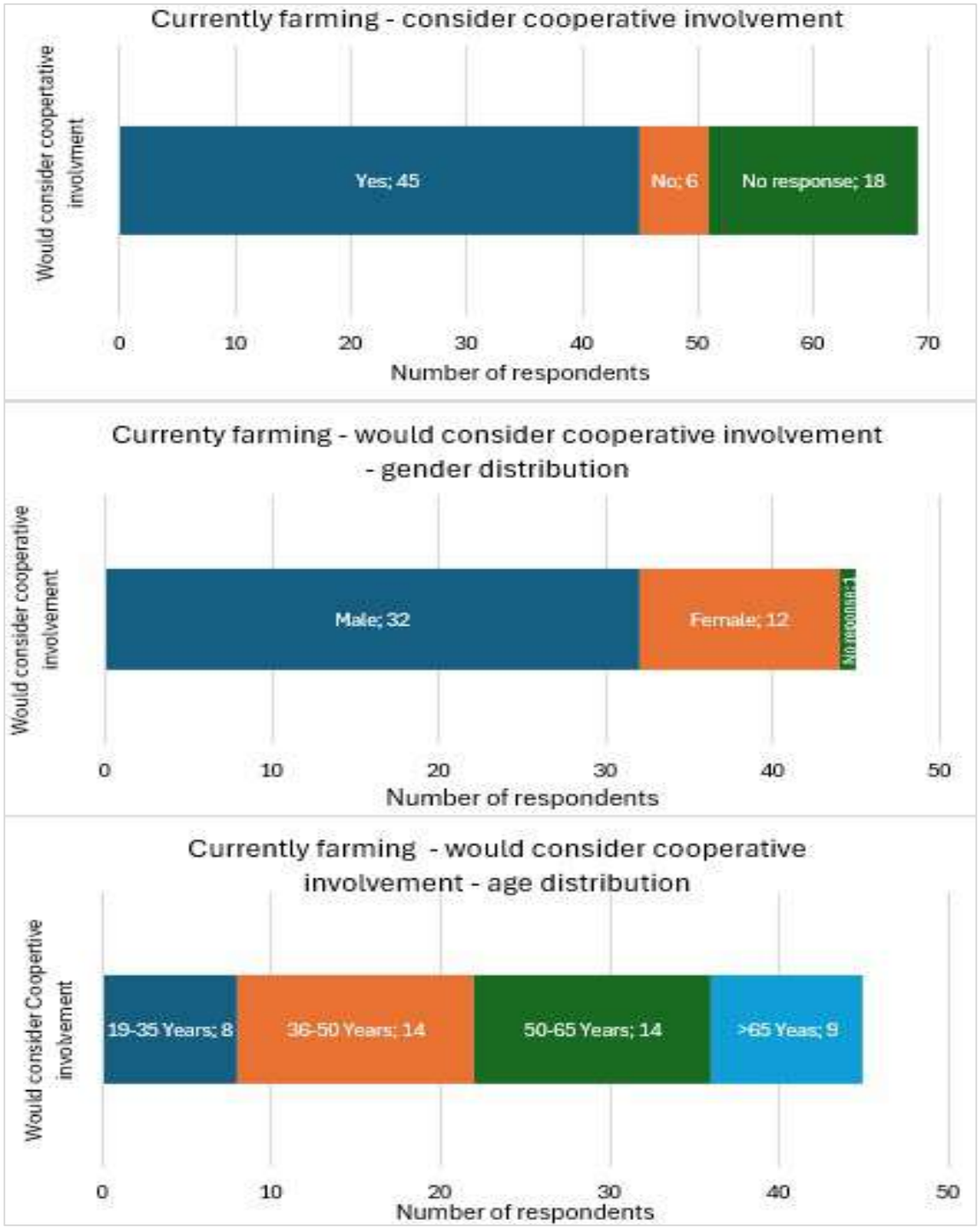
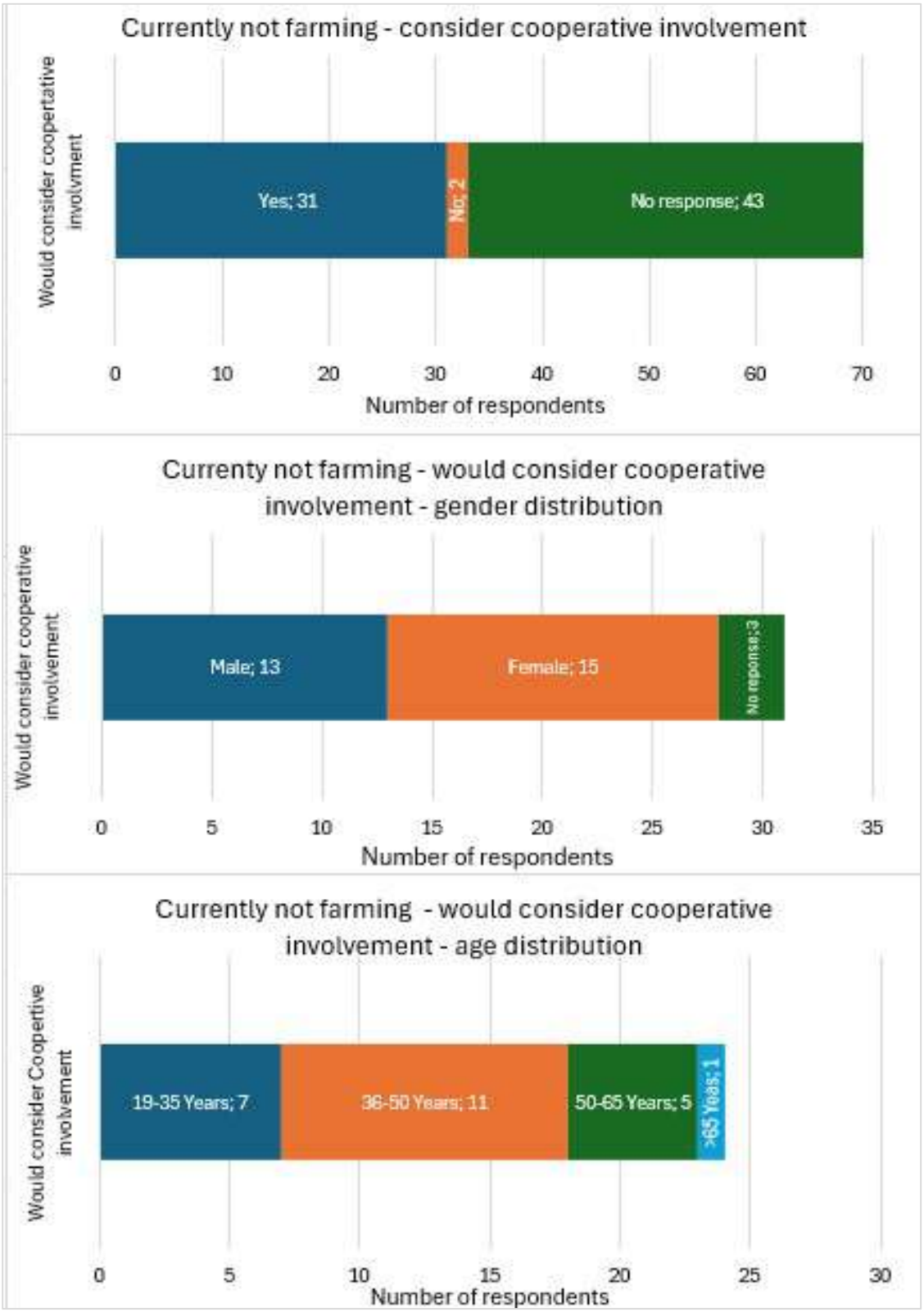


Figure 22 shows data of respondents not currently involved in farming; 31 of the 76 (41%) respondents would consider future cooperative involvement, and 43 did not respond. No response could indicate no interest in cooperatives or no interest in farming. 48% of the interest parties are female, and 42% are male; the largest portion (35%) of those interested in cooperative involvement are in the age group 36-50.

Figure 22 Number of respondents with currently not farming – consider future cooperative involvement



4.2.4 Resources and infrastructure constraints

During the community gatherings, attendees had the opportunity to list the constraints that limit participation in farming activities or expand their current farming activities. The constraints are illustrated in *Table 12* and *Figure 24.* In these figures, the total number of times the constraining factor was listed is indicated as 'count' for respondents currently farming and those not currently farming.

Land and water are considered key resources in sustainable development, but availability is crucial in Wuppertal's case.

Table 12 indicates that the most constraining resource factors are access to finance (81 counts), shortage of agricultural inputs (64), and climate factors (58). Land (27 counts) and water (43) resources are significantly lower on the resource constraints list, as reported by respondents.

Access to finance is always the main constraint for stakeholders in a developmental setting; there is no exception in the case of Wuppertal. Development will fall behind as long as finance is unavailable to farmers and prospective farmers. Finance in the indirect form is a necessity along with a workable well-designed project to improve livelihoods.

During the community gatherings, individuals were, in some cases, unsure about the land size and the lease period allocated to them. The plot tenure, or right of usage, is informally considered by community members to be automatically passed down from one generation to the next generation. Some respondents strongly feel that the land 'belongs' to the community members. With minimal arable land, the obstacle of access to land or fear of losing the land, the basic requirement for agricultural production, is understandable. However, according to the "*Ordeninge*" of the Moravian Church, allocated land must be cultivated; if not, the church has the power to act. Some respondents mentioned during the community gatherings that they believed that the church could not allocate the land to another community member at some point for any reason.

Keahey's research (2018) confirms that the Moravian church, as a "traditional authority, maintained a fairly equitable land management system and helped ensure peace in a region marked by systemic scarcity."

Despite most of the community's farmers leasing land from the Moravian Church, one outstation, Nuweplaas, owns a portion of the land and is not 100% dependent on the church's discretion for new and sustainable development.

The shortage of agricultural inputs is closely linked to access to finance but is also a constraint that hinders immediate progress in communities.

This can be understood in that land is generally available, as the Moravian Church owns the land on which the Wuppertal mission and the outstation are situated. 86% of the respondents who have farming as a source of income lease the land (plot) from the Moravian Church. It is possible that the respondents see the application process through the church bureaucracy as easier and quicker than, e.g., the government's red tape.

Figure 23 Constraining resource factors – count

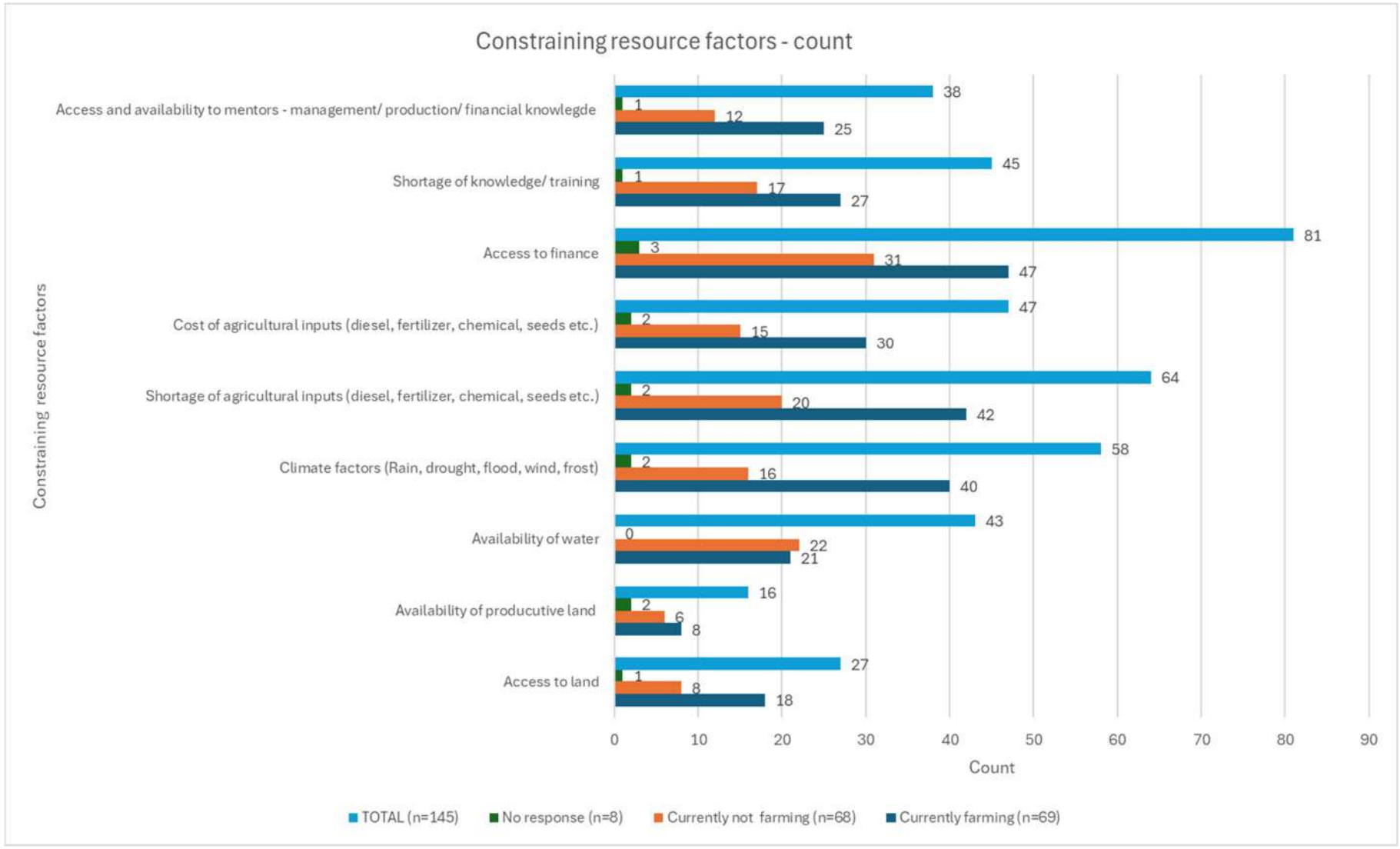


Table 12 shows the number of respondents with income from farming activities and access to land; 88% (n=61) have access through a lease from the church, 2 respondents have access to their land (as part of Nuweplaas), and 5 respondents have access to land for their farming activities through other people. The figures for those respondents who do not receive income from farming activities (currently not farming) should be considered carefully.

Figure 24 shows the most constraining infrastructure factors: availability of farming equipment (68 counts), access to transport (61), availability of irrigation infrastructure (53), and access to the internet and cell phone reception (5).

The availability of farming equipment is also closely linked to access to finance, however, the size at which many farmers operate doe does not justify standard equipment. Adjustments are needed regarding the type and use of the equipment, or a cooperative approach must be considered to start farming activities or expand current farming activities.

In addition, the flood earlier in 2024 caused extensive damage to the water and sewage systems, roads, and electricity supply for the largest part of the Wuppertal settlement.

Table 12 Number of respondents – access to land through various ways

Description	Lease land	Own land	Access to land through others	No response	TOTAL
Currently farming	61	2	5	1	69
Currently not farming	40	5	6	17	68
No response	1	0	1	6	8
TOTAL	102	7	12	24	145

The largest portion of the settlement has access to the perennial river system, although the basic infrastructure is lacking.

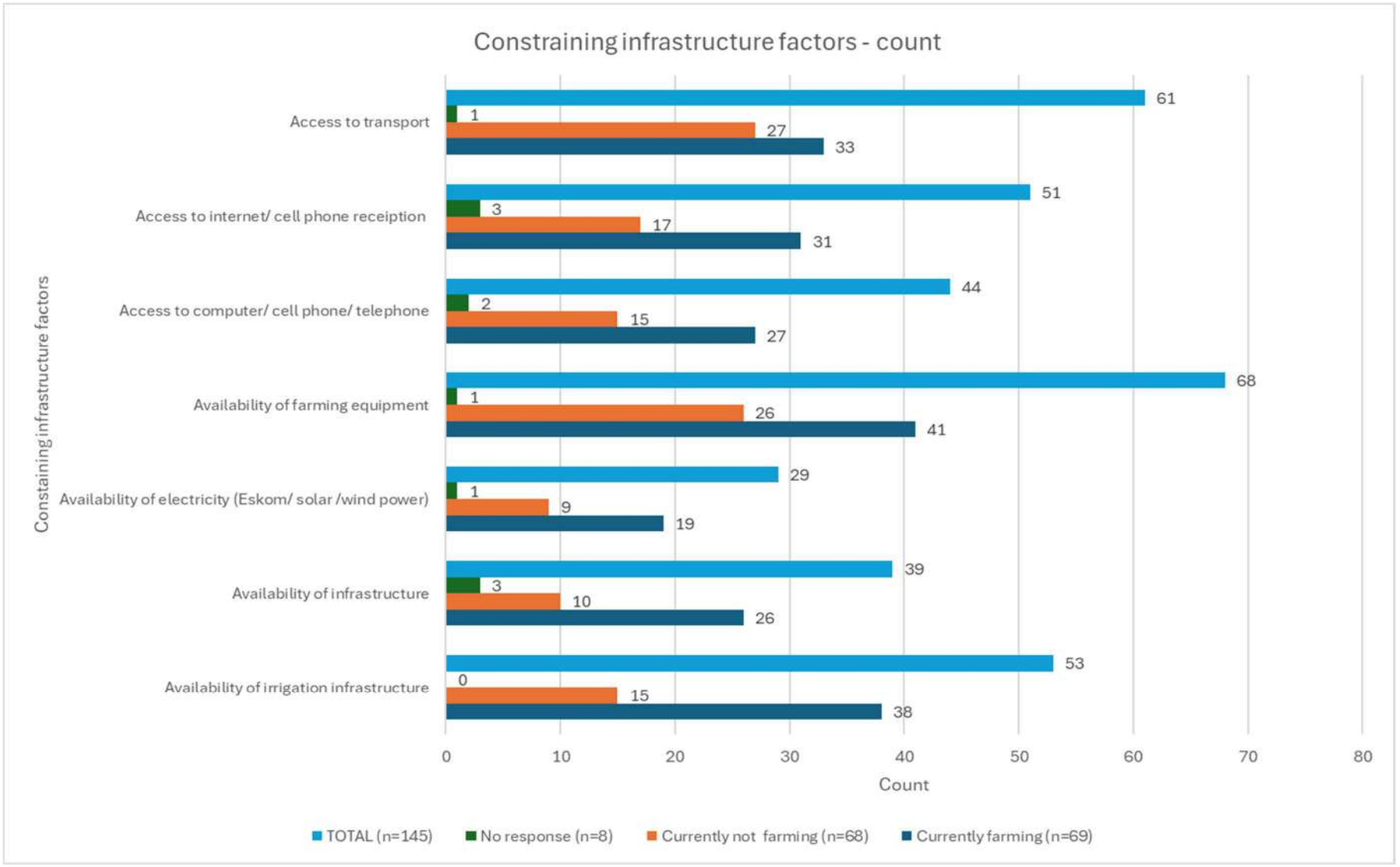
The perennial river system feeds the Wuppertal settlement, with side branches of rivers flowing alongside the productive agricultural land used for gardening plots. The concerns regarding no or limited access to land and limited vegetable production became even more real since the arable land alongside the rivers is, in some areas, completely washed away.

The outstations further away from the perennial main river need a dependable water source when the seasonal side branches dry off in the summer. 86% of respondents with income from farming activities confirmed sustained water supply throughout the year from the river system, and 6% of the respondents who mentioned that they don't have access to a perennial system are from Nuweplaas. The dependence on an alternative water source is crucial in these areas. Boreholes are valuable additions to ensure a sustained water supply for households and crops in times of need.

Furthermore, the water supply for household purposes seems to be under control. However, floodwaters cut the town and some outstations completely off and washed away supply systems to the garden plots (those

portions still available). In a particular instance, a borehole even collapsed due to the impact of the flood. The pumps were also damaged due to the flood.

Figure 24 Constraining infrastructure factors – count



4.2.5 Wuppertal interest in the proposed project

From the literature, background information, and feedback from the community gatherings, community members have a general interest in farming. Historically, farming has been pivotal to survival strategies for households in Wuppertal.

Table 13 confirms that 81% of respondents are interested in the proposed olive, buchu and possibly the inclusion of botanicals developmental project. The interested respondents represented a range of outstations *(Table 14*).

Table 13 Number of respondents interested in the proposed project

Interest in the proposed project	Yes	No	No response	TOTAL
Number of respondents	117	5	23	145
Percentage of respondents	81%	3%	16%	100%

Table 14 Number of respondents interested in the proposed project – per outstation

Outstation	Number of respondents from the outstation attending any location	Number of respondents interested in the proposed project per outstation	Percentage of respondents interested
Heuningvlei	14	14	100%
Witwater	9	4	44%
Brugkraal	6	4	67%
Grasvlei	7	3	43%
Agterstevlei	5	5	100%
Wuppertal	4	4	100%
Beukeskraal	25	19	76%
Langbome	2	2	100%
Kleinvlei	14	8	57%
Eselbank	16	16	100%
Langkloof	16	14	88%
Prinsekraal	1	1	100%
Nuweplaas	22	19	86%
Agterstefontein	1	1	100%
Martiensrus	3	3	100%
TOTAL	145	117	81%

The interest from the respondents is measured at 51% male and 43% female (Figure 25), a similar ratio to the original group is displayed. *Figure 26* and *Figure 27* The data on the age and education of the interested respondents are also in line with those discussed in the previous section on demographics and population.

Figure 25 Percentage of interested respondents – gender

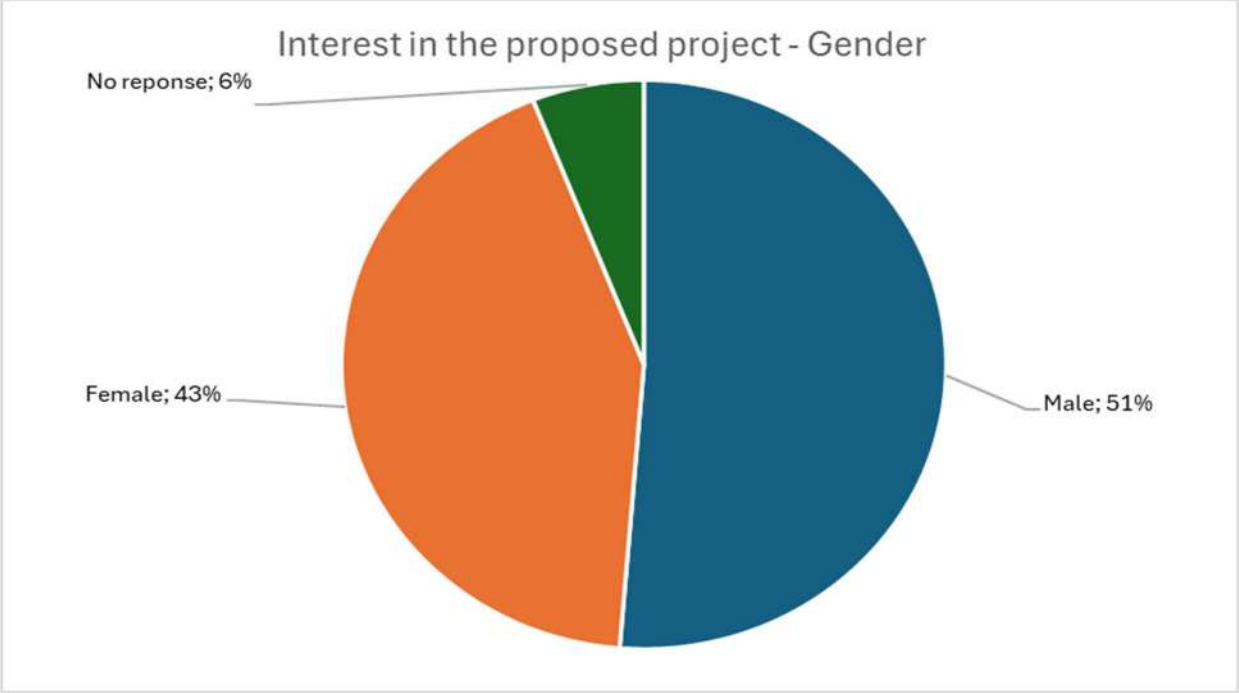


Figure 26 Percentage of interested respondents – age

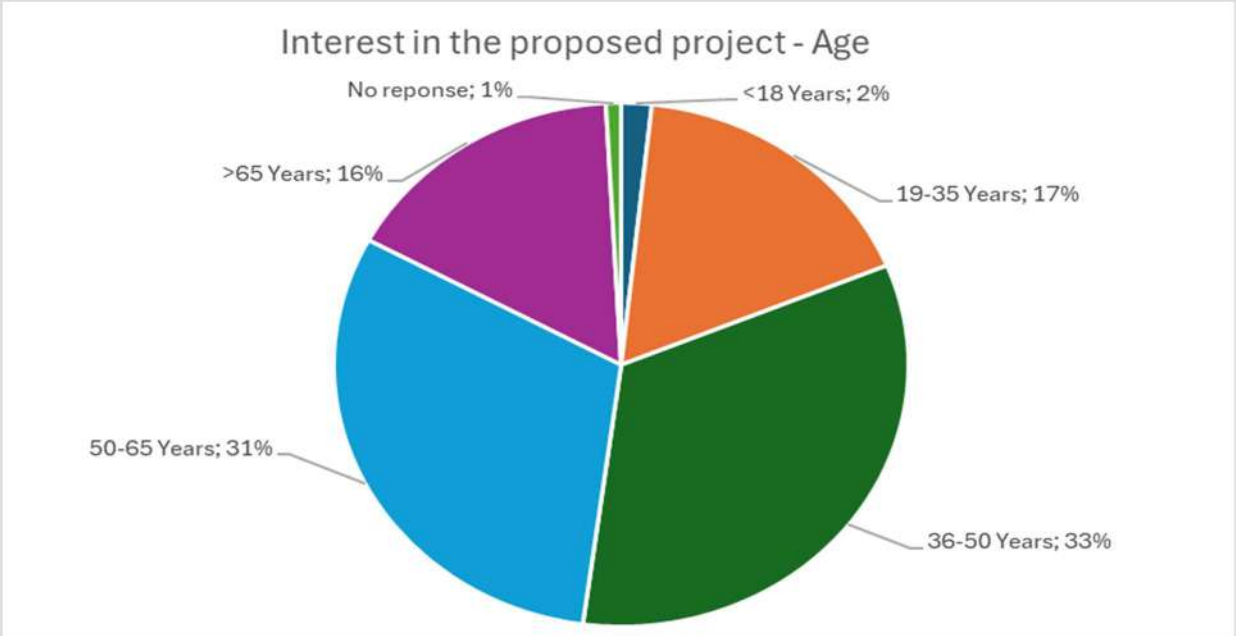
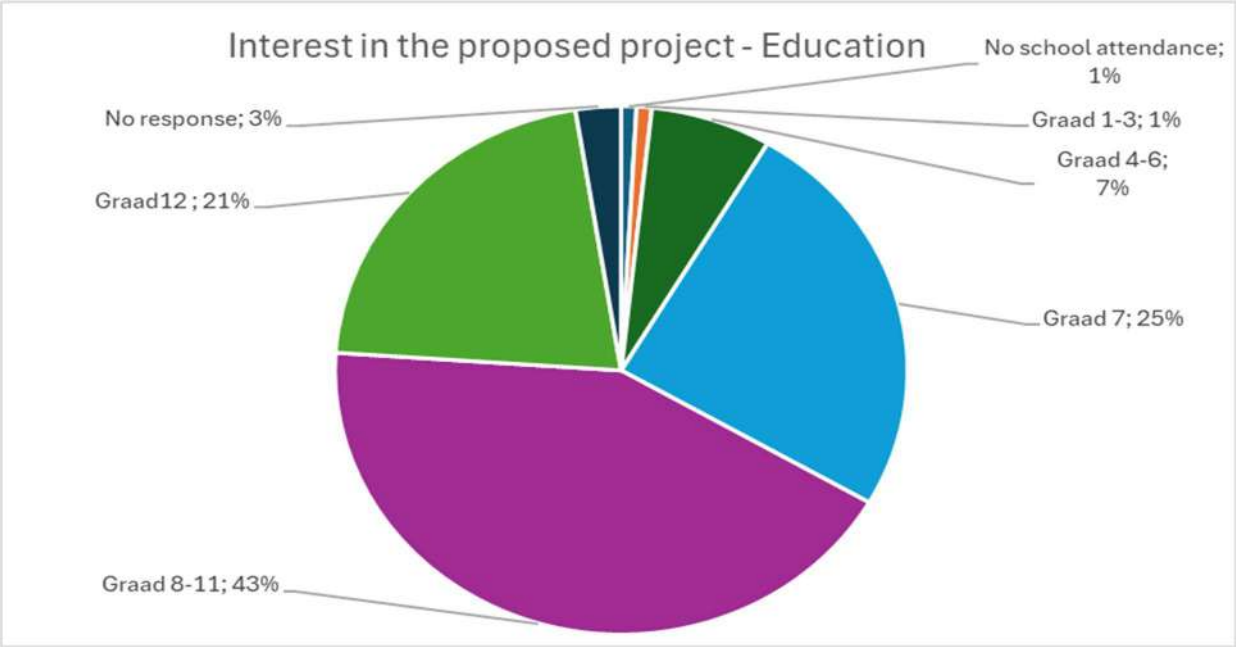


Figure 27 Percentage of interested respondents – education level



5 Previous projects

Various community development projects were launched over the years; they ranged from tourism to sewing and crafts, a library and multimedia centre, and agricultural investment, including tea and buchu production/processing facilities and chicken farming. Funding and development were driven by multiple organisations from all over the globe.

It seems only a handful of projects survived and struggled to make ends meet. In most cases, the project was funded and only partially managed by the community members; after some time, the full management was transferred to the community members. It is noted that Wuppertal, as a town, received most of the funding and support. In contrast, the outstations were not included, probably due to the remote locations, and, in some cases, the number of households in some of the outstations could have been a contributing factor.

6 Conclusion

The Wuppertal settlement is a rural, coloured community with a common religious identity under the administration of the Moravian Church. Farming and the income derived from farming activities are key survival strategies in combination with government support. Work opportunities are limited and only add to a small portion of a household's income. Accordingly, residents leave the settlement and financially support those who stay behind to maintain the smallholder farming activities and households.

This first phase baseline analysis focused on the social profile of the Wuppertal farmers to better understand the community and its farmers, who directly or indirectly derive their livelihood from agricultural production. Accordingly, the proposed project must be tailored towards the social profile to promote sustainable farming practices towards sustainable market opportunities.

Men and women are seen as peers within the community, although men and women still fulfil their traditional roles in many instances. The slow movement away from this notion supports commercial activity for women. The mean age of 44.5 years suggests many more economically active years that could carry such a development project into the future. Most respondents attended high school, and almost 20% finished Grade 12. Despite this level of formal education, the community's knowledge base and experience are the baseline for sustainable agricultural production alongside the existing marketing channels for the 80% who showed interesting participation in the proposed project.

This project's successful implementation can positively impact the lives of smallholder farmers, especially females, of the larger Wuppertal community in South Africa

7 References

CapeFarmMapper. 2024. Own mapping and drawings.

Cederberg Municipality. 2024. Final Integrated Development Plan (IDP) for 2024/25.

Erasmus, D. 2013. Wupperthal rooibos farmers co-operate for a better future. Farmers Weekly. 9 July.

Franklin, M & Breed, I. 2017. Wupperthal, an object of people and place. SAJAH, ISSN 0258-3542, volume 32, number 2, 2017.

Granger, S. 1982. Land tenure and environmental conditions at Wuppertal. In partial fulfilment of the degree requirements of Master of Science in Environmental Studies. University of Cape Town.

Human, L. 2024. Ground Up. Wupperthal: the town where you can sleep outside on your stoep. 18 Oktober. https://groundup.org.za/article/wupperthal-cederberg/#:~:text=Van%20Rooy%20says%20it%20is,surrounded%20by%20the%20Cederberg%20mountains.

Kaplan, A. 1984. Wupperthal - Thoughts and projections on rural development. Second Carnegie Inquiry into poverty and development in Southern Africa. Carnegie Conference. Paper Nr 232. Cape Town.

Keahey, J. 2018. Gender Place and Culture, A Journal of Feminist Geography. Gendered Livelihoods and Social Change in Post-apartheid South Africa. May.

Environmental Monitoring Group. 2009. Implementation Partners for This Project: Wupperthal Rooibos Tea Association and the Heiveld Co-operative Ltd. CEPF Small grant final project completion report. - Developing a Wild Rooibos Business. September

Weather and climate. 2024. https://weatherandclimate.com/south-africa/western-cape/wuppertal

Zuma-Netshiukhwi, G. Agrometeorological Applications, Agricultural Water Use and Management, Agrometeorological Extension, Climate Smart. Agricultural Research Council (ARC), South Africa.