Scaling of Cover- and Inter-Crops for Soil Health Restoration in Coffee and Banana Systems of Eastern Democratic Republic of Congo – Activity Report

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1. Introduction

This report summarizes Bioversity International's activities under the Scaling for Impact (S4I) program of the One CGIAR in eastern Democratic Republic of Congo (DR Congo) in the period January to December 2025. The activities build-upon efforts initiated under CIALCA and TAFS- WCA in 2022 through 2025. The activities contributed to the Area of work 2 (AoW2), outputs 2.2.27 and 2.2.26. Output 2.2.27 focused on 'Deploying and evaluating scaling pathways of bundles and packages of proven climate-smart agronomic innovations (including IPM, ISFM, and regenerative agriculture practices)'. Output 2.2.26 focused on 'Deploying and evaluating scaling pathways of bundles and packages of innovations including nutrient-dense crop varieties (banana, cassava, rice, sweetpotato, and vegetable) and fish and their associated seed systems'. Bioversity activities in 2025 targeted the coffee farming systems.

Coffee is widely grown in Eastern DR Congo, often in association with banana and other crops. It is an important source of income for a large majority of farmers. It has been grown since the 1920s using traditional practices, with deep tillage seasonally practiced during field preparation for annual crops, mainly bean sowing. In addition, the use of external inputs is restricted in coffee cropping systems. This has led to land degradation and reduced crop yields.

Looking for alternatives to minimize these negative impacts on coffee production, Bioversity International and INERA-Mulungu have been exploring different packages of regenerative practices including integration of cover crops, grasses and nitrogen fixing shrubs as intercrops within coffee and banana to prevent soil erosion, suppress weeds, improve below and aboveground biodiversity, improve soil nutrients and their availability, ultimately enhancing soil health. These innovations are at different stages, with others at the stage of scaling.

The activities undertaken over the period January to December, 2025 to further the innovations included:

i. Awareness creation on the role of leguminous cover crops in soil health and yield restoration in degraded coffee farms;
ii. Training cooperative members and individual farmers on use of cover crops in coffee systems;
iii. Development and dissemination of Information and Communication materials;
iv. Evaluation of yellow Jacaranda trees as sources of shade for coffee;
v. Maintenance of a velvet bean (*Mucuna pruriens*) and greenleaf desmodium (*Desmodium intortum*) seed multiplication demonstrative plots;

2. Scaling cover crops

2.1. Awareness creation on the use of leguminous cover crops to restore soil health and coffee yield.

To foster wide scaling of the Mucuna cover crop (previously tested over a 3-year period on farmers' fields) and other regenerative agriculture innovations, we deliberately contacted and created awareness among cooperative unions, coffee farmer organizations, large plantation owners, learning institutions (universities, agricultural technical schools) and project leaders in the South Kivu region. In these meetings, the challenges of soil health and the available mitigation strategies were discussed. The potential of cover crop integration on their fields was explained. Cooperatives and institutions with large memberships were deliberately targeted with the hope that the innovation could be internally discussed and shared with their members, colleagues or students.

From January to December 2025, we held different small meetings and trainings with 461 staff and leaders from various organizations, projects, cooperatives, large plantations, universities and technical schools, representing about 126,981 persons (81,060 women and 46,100 men) (Table S1, S2 and 3). These meetings have triggered interest from several of the institutions, translating into learning visits to the demonstration fields at INERA-Mulungu, demand for seed and uptake of cover crops in Kabare and Kalehe territories.

To foster communication with and within farmer organizations and to catalyze the scaling efforts, especially in the face of the ongoing conflict, a social media platform (**WhatsApp platform**) was created. This platform currently has 104 members and is used by farmers to ask questions and exchange their experiences. These farmers also act as links to farmers without phones or who lack the appropriate phones.

Other awareness tools included video documentaries showcasing success stories at the on station and farmers' fields. A poster on the results of the demonstration work at INERA Mulungu was also developed to aid the training.



Figure 1. Greenleaf desmodium seed multiplication plot at INERA-Mulungu.

2.2 Training cooperative members and individual farmers on the use of cover crops in coffee systems

A total of 3,885 farmers visited and obtained training at the demonstrative plots with the drought resistant cover crops at INERA for the period from January to December 2025 (Table 1). They especially visited the coffee-banana trial that incorporates the velvet bean cover crop (Fig. 2), fast-growing grasses and nitrogen fixing shrubs. Other species being demonstrated and visited included velvet bean and greenleaf desmodium seed multiplication (Fig. 1) plots and a field with integration of Jacaranda trees as a coffee shade provider.



Figure 2. Farmers at the coffee-cover and inter- crops demonstration plots at INERA-Mulungu (top).

These visits and training generated demand for seeds of some of the cover crop species. A total of 490 kg of velvet bean and 27 kg of greenleaf desmodium seeds were given out to farmers in the period (Supp. Table 2). Farmers were also linked to Birava, Bushumba and Kabamba farmers who had produced 16,190 kg of seed over the previous season. The velvet bean seed was selling out at 1 USD per kilogram.

Table 1. Organizations that visited the demonstration plot with drought resistant cover crops and the greenleaf desmodium plot for seed multiplication at INERA-Mulungu in eastern DR Congo.

Name of institution of affiliation	Type of organization	Women	Men	Total
FOPAC (Fédération des Organisations des Producteurs Agricoles du Congo)	Cooperative	1800	754	2554
UEA (Université Evangelique en Afrique)	University	4	18	22
ISP (Institut Supérieur Pédagogique)	University	46	14	60
ULB (Université Lutherienne de Bukavu)	University	0	4	4
ISTD (Istitut Superieur des Techniques de Developpement)	University	0	4	4
ULGL (Université Libbre de Grand Lac)	University	0	1	1
ISEAV (Institut Superieur d'Etude Agronomique et Veteriaire) MUSHWESHWE	University	0	8	8
ITAV (Instituts Technique Agricoles)	Technical school	348	83	431
CANALLs Project stakeholders	Project	519	282	801
Total		**2717**	**1168**	**3885**

2.3. Uptake and perception on cover crops.

In March 2023, the scaling effort started with 45 farmers who received velvet bean seeds for innovation testing and validation in Lugendo groupement in Kabare territory, South Kivu. This was followed by passive diffusion and subsequent scaling efforts that to date have benefited over 8,680 individuals across Kabare, Walungu, Idjwi and Kalehe territories.

As of December 2025, at least 80 ha of smallholder coffee land had been planted with velvet beans and greenleaf desmodium cover crops. Approximately 30% of the farmers have reported to share cover crop seed and knowledge. Farmers who have adopted velvet bean produced at least 16.2 tons of seed that are shared or sold to other interested farmers and consumed within farm households. Benefitting farmers have reported an improvement in soil health, reduction in weed burden and associated labor costs and increasing coffee yields. Farmer with fields on sloping land have reported velvet bean crop cover to greatly reduce soil erosion and improve coffee growth and yield.

A recent impact study showed that revenues from coffee production increased by 434%, while productivity increased by 236%. Though not a primary objective and deliberately promoted, adopting households are using appropriate methods for processing Mucuna seed for household consumption. Approximately 3000 individuals have reported using velvet bean powder to supplement their protein source. This has driven the project to develop factsheets to guide velvet bean processing to avoid risks of poisoning due to high anti-nutrient content, such as high L-dopa levels in the beans.

Farmers have also reported the cover crops supplement feed for goats and other livestock, thus fostering livestock integration.

3. Evaluation of yellow Jacaranda trees as a source of shade for coffee.

Yellow Jacaranda trees were observed to growth very fast and provide adequate shade for the coffee trees in a 3-year period. For example, tree diameter at the collar varied between 13.33 to 30.cm and the height varied between 3.8 to 10.87 m depending on soil fertility and initial establishment date of the trees (Figure 3 and 4).

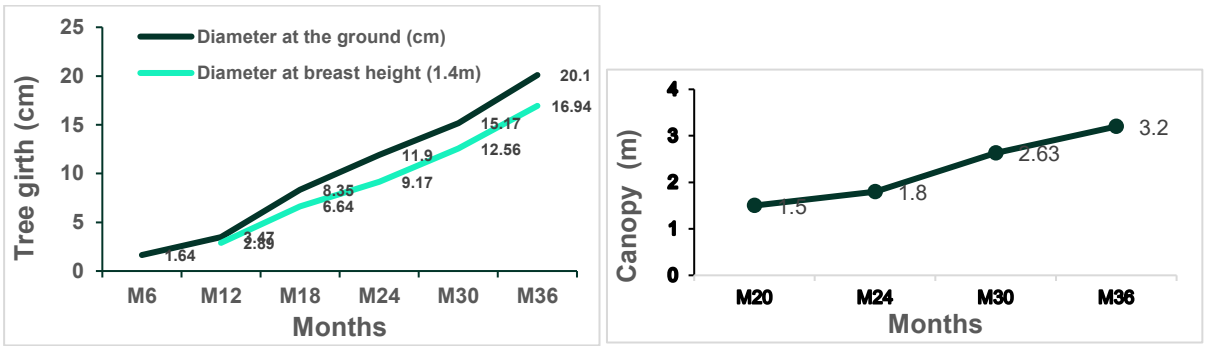


Figure 3: Jacaranda tree plant girth at ground level and breast collar height (top), and canopy size (down) at 6, 12, 18, 24 30 and 36 months after planting.

The canopy cover [width] provided by the leaves and branches at 3 years after planting was 3.2 m on average, allowing an average light intensity of 737 µmol/m2/s, 20cm above coffee trees and 317.2 µmol/m2/s at 50 cm from the jacaranda trees. This compared to 1971 µmol/m2/s to 2017 µmol/m2/s above coffee in the controls. The Jacaranda tree carbon content estimated using the allometric equation by Beets et al., 2012 and Schwendenmann & Mitchell, 2014, showed an average of 36.6 kg of carbon per tree, 3 years after planting. Coffee tree growth (Table 2) and yield was also significantly ($p < 0.01$ to 0.001) improved under the jacaranda tree shades. The first coffee cherry harvest varied between 158.8g/ plant in the jacaranda-coffee-velvet bean intercrop compared to 78.7 g/plant in coffee-velvet bean intercrop and 0 g/plant in the sole coffee control.



Figure 4. Jacaranda trees 36 months after planting

Table 2. Coffee plant height (cm) and stem diameter (cm) 18, 24, 30, and 37 months after trial establishment.

Treatment	May 2024		Dec. 2024		May 2025		Dec. 25	
	Stem diameter at the ground	Tree height	Stem diameter at the ground	Tree height	Stem diameter at the ground	Tree height	Stem diameter at the ground	Tree height
Jacaranda-coffee-mucuna	3.220a	100.70a	3.460a	115.90a	3.753a	119.9a	4.6a	154.3a
Coffee-mucuna	3.180a	86.63a	3.320b	94.23b	3.564b	101.8b	3.77b	113.9b
Sole coffee	3.200a	93.67a	2.583b	89.53b	2.910b	98.8b	3.63b	117.9b
LSD	**0.46**	**12.37**	**0.3928**	**10.93**	**0.388**	**10.8**	**0.42**	**13.66**
Fpr	**0.859**	**0.027**	**0.001**	**0.001**	**0.001**	**0.001**	**0.001**	**0.001**

Supplementary Tables

Table S1. Type and membership details of organizations and persons directly met to discuss the use of cover crops and other regenerative agriculture practices for improving soil health of coffee systems in Kabare territory in Eastern DR Congo. Coop., LP, FO, respectively, denote cooperatives, large plantation, and farm organization, respectively.

Location	Organizations	Type of organizations	No. of persons met per organizations during meeting on cover crops	Organization membership				Total
				Men		Women		
				18 to 30 years	30 to 80 years	18 to 30 years	30 to 50 years	
Miti	Cooperative Coffee Bushumba	Coop	1	49	101	69	134	353
	Ceruti	LP	1	30	15	46	56	147
	Ruinuke	FO	1	20	44	21	57	142
	Songambele	Coop	1	53	77	85	145	360
	Nyaweza	FO	1	10	58	23	62	153
	Rhuzuke	FO	1	20	40	52	56	168
	Plantation FUNDIKO	LP	1	13	43	26	52	134
	Organisatio Mapendo	FO	1	68	137	19	57	281
	Organisatio Tuungane	FO	1	9	36	10	40	95
	Yung Organization for Coffee Production	FO	1	5	25	16	40	86
	Organisatio Bololoke	FO	1	10	10	14	32	66
	Maendelo	FO	1	25	10	12	35	82
	Majirani MITI	FO	1	45	15	10	25	95
	Maendeo	FO	1	39	41	56	69	205
	Tupendane	FO	1	18	17	7	50	92
	Groupe Maendeleo	FO	1	33	52	9	100	194
	Rapad	FO	1	23	33	21	46	123
	Coffe	FO	1	12	14	30	57	113
	Women's Coffee Cooperative	FO	1	9	26	20	70	125
	Virunga Coffee	LP	1	21	38	46	61	166
	Cpka	Coop	1	10	70	16	29	125
	Murimaeka	FO	1	9	33	12	17	71
	Cikwanani M'kaheshe		1	44	25	9	17	95
	Neema Ndatabaye		1	64	25	28	75	192
	Sifa Mukoma		1	18	38	85	115	256
	Nanfranka Mwamuciga		1	25	45	32	63	165
	Buhogo Guilbert	Fédération des Organisations des Producteurs Agricoles du Congo au Sud Kivu (FOPAC SK)	1	35	70	12	38	155
	Furaha Bisimwa		1	22	53	80	125	280
	Nsimire Bagumu		1	33	57	39	70	199
	Sifa Mastaki		1	20	40	33	72	165
	Ombeni Muzusa Ngabo		1	15	65	11	26	117
	Kitumaini Murhebwa		1	50	154	10	45	259
	Batumike Cigangu		1	45	61	9	51	166
	Badose Musakamba		1	14	58	33	87	192
	Miusakamba Mayele John		1	8	48	26	154	236
	Nfune Mushagalusa		1	5	35	30	80	150
	Mushiayuma Masirika		1	42	258	5	30	335
	Kazingufu	FO	1	10	20	45	85	160
	Mugisho	FO	1	4	20	12	58	94
	Bagalwa	FO	1	17	73	7	43	140
	Kituini	FO	1	13	62	6	50	131
	Mbiribindi	FO	1	4	40	43	165	253
	Matabaro	FO	1	5	25	24	281	335
	Katembera	FO	1	5	85	25	84	199
	Kalaba	FO	1	7	37	11	68	123
	Cimanuka	FO	1	10	25	15	71	111
	Murhimanya	FO	1	4	61	30	190	285
	Muganga	FO	1	8	78	5	30	121
	Mayele	FO	1	13	53	32	173	271
	Chekanabo	FO	1	3	47	6	49	105
	Balolebwami	FO	1	4	30	5	75	114
	Kalwira	FO	1	10	60	11	169	250
	Nyamushisha	FO	1	16	87	22	218	343

	Birindwa	FO	1	13	57	8	98	176
	Balungwe	FO	1	6	84	5	30	125
	Cimanuka	FO	1	12	30	9	71	122
	Mudahama	FO	1	4	21	11	66	102
	Ferdinand	FO	1	4	26	7	88	125
	Kashuriza	FO	1	6	44	17	85	152
Bugorhe	Muhindo	FO	1	17	53	13	69	152
	Fuzi	FO	1	8	72	24	180	284
	Nyakungwa	FO	1	4	30	35	315	385
	Galuma	LP	1	14	94	8	52	169
	Kalihiro	FO	1	17	61	32	188	298
	Bahongwere	FO	1	3	42	16	134	195
	Nyunyi	FO	1	18	57	40	163	278
	Kalanbagiro	FO	1	13	73	11	79	176
	Nyakungwa	FO	1	8	27	20	210	265
	Lukula	FO	1	12	56	42	163	273
	Magadju	FO	1	9	27	25	220	281
	Karubamba	FO	1	18	102	20	76	216
	Kahebe	FO	1	43	262	15	55	375
	Shandraki	FO	1	50	350	5	45	450
	Beata	FO	1	7	47	35	170	259
	Pasikazi	FO	1	60	594	5	75	734
	Riziki	FO	1	5	71	36	120	232
	Noela	FO	1	24	119	11	84	166
	Suzane	FO	1	22	31	28	85	166
	Marigerite	FO	1	72	601	19	51	743
	Njerina	FO	1	10	46	83	347	486
	Janeti	FO	1	94	882	20	37	1033
	Marinela	FO	1	5	40	38	162	245
	Magonji	FO	1	55	318	13	47	433
	Mulimbi	FO	1	67	473	32	93	665
	Nyange	FO	1	39	486	16	64	605
	Ruhogo	FO	1	8	37	22	81	148
	Bagalwa	FO	1	12	38	21	69	140
	Yeremia	FO	1	82	383	21	29	515
	Buhashe	FO	1	65	355	8	48	476
	Mulume	FO	1	12	67	46	64	189
	Ruhingika	FO	1	23	63	54	166	306
	Victorine	FO	1	13	32	35	85	165
	Ruhana	FO	1	35	85	28	77	181
	Raek	Coop	1	90	480	16	40	626
	Mastaki	FO	1	5	40	86	121	252
	Muhime	FO	1	45	161	17	78	301
	Sikula	LP	1	55	401	16	63	535
	Mukanirwa	FO	1	26	184	33	77	320
	Ruhengura	FO	1	7	57	60	285	409
Katana	Nicodem	Coop	1	18	71	53	812	954
	Biyumanine	LP	1	30	78	95	449	432
	Muhindo	FO	1	60	90	104	440	694
	Nyamugabisa	Coop	1	220	387	90	313	1010
	Cibalonza	FO	1	15	65	42	168	290
	Marceline	FO	1	49	53	90	308	500
	Magwane	LP	1	12	57	70	232	371
	Nyamulula	FO	1	22	68	60	405	555
	Shamavu	FO	1	30	90	6	50	176
	Nsimire	FO	1	53	87	24	72	236
	Cizungu	LP	1	21	39	80	154	294
	Kamera	FO	1	5	35	24	300	364
	Pascasie	FO	1	20	200	4	50	274
	M'nyakahama	FO	1	5	90	6	30	131
	Josiane	FO	1	78	224	7	60	369
	Alphonse	Church	1	5	85	34	200	324
	Agnes	Coop	1	50	158	76	428	712
	Rose	FO	1	13	54	83	351	501
	M'musafiri	FO	1	15	31	34	116	195
	Leotine	LP	1	16	62	95	145	318
	Beatrice	Coop	1	17	73	35	121	246
	Mirindi	FO	1	10	75	25	79	189
	Birindwa	FO	1	16	31	11	56	114
	Habamungu	FO	1	12	48	8	26	94
	Bujiriri	FO	1	5	30	108	345	488
	Kalume	FO	1	13	57	13	53	135
	Juliene	LP	1	40	75	33	97	195
	Menezo	FO	1	9	66	52	164	205
	Anaclette	FO	1	43	64	30	186	323

	Malimingi	LP	1	24	80	95	380	579
	Mukomo	FO	1	11	79	40	305	435
	Cidabagizi	FO	1	8	47	85	145	289
	Kahule	FO	1	16	22	56	174	268
	Petronile	FO	1	10	80	5	90	185
	Kaseremba	LP	1	2	90	6	50	148
	M'ndusi	FO	1	4	86	10	100	200
	M'badunga	FO	1	6	40	10	60	116
	Mbonekube	FO	1	7	100	8	90	207
	Shamavu	FO	1	8	42	4	98	152
Kadjucu	Mukuza	FO	1	120	224	150	273	767
	Kalimira	FO	1	30	307	60	260	657
	M'bulungu	FO	1	12	40	9	63	124
	Jeaanine	FO	1	72	251	80	473	876
	Mirugi	FO	1	13	32	23	52	120
	Shalukoma	FO	1	34	86	60	274	454
	Mukwege	FO	1	7	21	16	76	120
	Mukuza	FO	1	55	155	103	554	867
	Lukwenye	LP	1	10	40	9	80	139
	Nyakwega	FO	1	19	46	16	58	435
	Mpozi	FO	1	15	61	25	244	345
	Magala	FO	1	11	35	29	75	150
	Buranga	FO	1	22	56	35	132	245
	Tumaini	FO	1	24	66	50	180	320
	Cinyabuguma	FO	1	30	73	45	77	225
	Bukuru Kuru	FO	1	17	39	36	78	170
	Citibira	FO	1	12	78	70	220	380
	Rozali	FO	1	13	44	25	63	145
	Kanini	FO	1	46	144	120	370	680
	Mutarushwa	FO	1	30	182	95	583	890
	Cimanuka	FO	1	62	73	106	306	550
	Musoromo	FO	1	27	50	96	247	420
	Siuzike	FO	1	40	90	75	249	454
	Vesiana	FO	1	62	147	70	261	540
	Namulugano	FO	1	50	176	96	134	456
	Barhunzi	FO	1	50	100	65	130	345
	Fungaroho	FO	1	36	84	40	263	423
	Kaduli	FO	1	95	304	80	290	769
	Bukurumba	FO	1	55	160	102	148	465
	Rutale	FO	1	10	40	3	70	123
	Barhankengera	FO	1	10	70	24	200	305
	Muhindo	FO	1	6	60	4	80	150
	Magala	FO	1	90	100	66	200	456
	Cangalire	FO	1	50	200	87	300	637
Mabingu	Nankafu Namegabe	FO	1	16	74	103	239	432
	Bazibuhe Kayeye	FO	1	18	68	56	94	236
	Charline Furaha	FO	1	34	72	72	129	307
	Ellianne Ciikuru	FO	1	22	57	19	60	300
	Gulite Hombo	FO	1	13	65	95	226	399
	Bahidika Lumbengehya	FO	1	26	68	103	128	325
	Mbalama Mishungu	FO	1	17	52	47	153	269
	Mudekereza Maregane	FO	1	8	50	20	300	289
	Ciragarula Ntavuna	LP	1	22	68	66	144	300
	Ciruza Kazulu	FO	1	9	38	13	77	137
	Lushombo Luleta	Coop	1	5	90	50	400	545
	Bakukira Kahonero	FO	1	28	62	69	61	220
	Nabunani Mwamuzusa	FO	1	8	40	5	90	143
	Mujanda Ntingingwa	FO	1	8	62	4	90	164
	Gulite Hombo	Technical school	1	5	70	60	100	235
	Bahidika Lumbengehya	FO	1	4	50	15	65	134
	Mbalama Mishungu	FO	1	13	67	45	100	225
	Mudekereza Maregane	FO	1	5	90	25	200	320
	Ciragarula Ntavuna	FO	1	7	30	10	200	247
	Ciruza Kazulu	FO	1	20	100	5	55	180
	Lushombo Luleta	FO	1	52	152	5	90	299
	Bakukira Kahonero	FO	1	16	44	44	64	168
	Nabunani Mwamuzusa	Technical school	1	24	56	96	129	305
	Mujanda	FO	1	45	64	5	65	179

	Ntingingwa	FO		106	204	5	90	405
Ishungu	Bwahula	FO	1	4	30	7	60	101
	Virunga Coffee	Coop	1	3	50	7	50	110
	Mutarushwa	FO	1	6	20	9	80	115
	Ufdp	Coop	1	8	70	20	70	168
	Ruboneka	FO	1	4	50	8	70	132
	Kajibwami	FO	1	8	60	5	60	133
	Nalusambo	FO	1	10	80	7	60	157
	Namusegera	FO	1	3	40	6	50	99
	Kulimushi	Church	1	9	70	7	80	166
	Nimuliri	FO	1	9	100	30	60	199
	Misuka	FO	1	5	70	7	80	162
	Sanzika	FO	1	6	80	7	60	153
	Namushaka	FO	1	10	80	5	80	175
	Sanzika	FO	1	4	60	7	50	121
	Mushaka	FO	1	9	70	6	50	135
	Ruzuba	FO	1	3	50	8	70	131
	Maurice	FO	1	8	50	10	80	148
	Nyamugaba	FO	1	20	70	15	55	160
	Macara	FO	1	4	60	7	60	131
	Mushi	FO	1	8	40	8	50	106
	Kamungu	FO	1	9	70	10	70	159
	Mashali	FO	1	8	90	7	90	195
	Centwali	FOPAC	1	6	70	7	60	143
	Nyabwenda	FOPAC	1	10	80	8	50	148
	Mbaswa	FO	1	5	90	8	60	163
	Nganyamulume	FO	1	8	40	20	70	138
	Masheka	FO	1	7	60	5	80	152
	Balezi	FO	1	9	90	6	40	145
	Rutega	FO	1	5	60	3	40	108
	Ntabira	FO	1	5	40	8	60	113
	Butale	FO	1	5	60	6	70	141
	Shagalume	FO	1	8	70	10	50	138
	Rushangiza	FO	1	29	70	4	60	163
	Rwambukiza	FO	1	88	80	6	70	244
	Muhindo	FO	1	6	70	9	80	165
	Mubulanyi	FO	1	9	80	7	40	136
	Manino	FO	1	4	50	9	70	133
	Mubulanyi	FO	1	7	30	5	80	122
	Kasenge	FO	1	5	60	5	50	120
	Kefa	FO	1	60	5	50	5	120
Lugendo	Virunga Coffee	Cooperative	1	280	1320	520	1440	3560
	Bujiriri	Farmer	1	0	1	0	0	1
	Kateravincent	Farmer	1	0	1	0	0	1
	Ifdp Lugendo	FO	1	225	495	290	560	1570
	Amani Robert	Farmer	1	0	0	0	1	1
	Kujirabwindja	Farmer	1	0	0	0	1	1
	Lushombo Miruho	Farmer	1	0	0	0	1	1
	Mulume Lulihoshi	Farmer	1	0	0	0	1	1
	Kabibi Toto	Farmer	1	0	0	0	1	1
	Byamungu Miruho	Farmer	1	0	0	0	1	1
	Parara	Farmer	1	0	0	0	1	1
	Idee Hamuli	Farmer	1	0	0	0	1	1
	Cirhuza M'etienne	Farmer	1	0	0	0	1	1
	Karhaga	Farmer	1	0	0	0	1	1
	Yakobo Nyalumya	Farmer	1	0	0	0	1	1
	Kanze Kuhera	Farmer	1	0	0	0	1	1
	Koza Minani	Farmer	1	0	0	0	1	1
	Kayuka Cishugi	Farmer	1	0	0	0	1	1
	Tegemea	Farmer	1	0	0	0	1	1
	Matabishi	Farmer	1	0	0	0	1	1
	Birhabaluge	Farmer	1	0	0	0	1	1
	Murhula Baribusa	Farmer	1	0	0	0	1	1
	Polepole	Farmer	1	0	0	0	O	1
	Didier	Farmer	1	1	0	0	0	1
	Mupenda	Farmer	1	1	0	0	0	1
	Cirimwami	Farmer	1	1	0	0	0	1
	Kashegula	Farmer	1	1	0	0	0	1
	Mihigo	Farmer	1	1	0	0	0	1
	Byamuhanya	Farmer	1	1	0	0	0	1
	Mutabazi	Farmer	1	1	0	0	0	1
	Mabuga	Farmer	1	1	0	0	0	1
	Mugunda	Farmer	1	1	0	0	0	1
	Kulimushi	Farmer	1	1	0	0	0	1
	Muruhuka	Farmer	1	1	0	0	0	1

	Muhigirhwa	Farmer	1	1	0	0	0	1
	Ceo	Farmer	1	0	1	0	0	1
	Kamaro	Farmer	1	0	1	0	0	1
	Masirika	Farmer	1	0	1	0	0	1
	Kabugu	Farmer	1	0	1	0	0	1
	Mukubagula	Farmer	1	0	1	0	0	1
	Bitorwa	Farmer	1	0	1	0	0	1
	Kaneza	Farmer	1	0	1	0	0	1
	Mukabagula	Farmer	1	0	1	0	0	1
	Bakengeza	Farmer	1	0	1	0	0	1
	Kadakala	Farmer	1	0	1	0	0	1
	Katumbu	Farmer	1	0	1	0	0	1
	Bayongwa	Farmer	1	0	1	0	0	1
	Piripiri	Farmer	1	0	1	0	0	1
	Ndalizi	Farmer	1	0	1	0	0	1
	Macumu	Farmer	1	0	1	0	0	1
Luhihi	Virunga Coffee	Coop	1	23	100	31	200	354
	Bahiga	FO	1	21	300	24	300	645
	Bazibuhe	FO	1	10	35	53	300	398
	Rugamba	FO	1	7	60	23	100	190
	Bazibuhe	FO	1	9	80	43	100	232
	Baseze	FO	1	8	90	54	100	252
	Mirindi	FO	1	10	60	67	100	237
	Cerungwe	FO	1	6	90	80	100	276
	Mugaruka	FO	1	5	80	95	100	280
	Burowi	FO	1	8	60	44	110	222
	Rugina	FO	1	30	60	55	123	268
	Sanvura	FO	1	17	39	32	125	213
	Shungu	FO	1	14	30	60	118	222
	Nyangwe	FO	1	22	56	45	165	288
	Nkinzo	FO	1	31	64	52	74	221
	Cherungwe	FO	1	42	62	75	155	334
	Safari	FO	1	4	30	30	186	250
	Bisangwa	FO	1	7	60	36	224	327
	Petrol	FO	1	8	80	125	278	491
	Cikwanani M'kaheshe	FO	1	5	90	103	129	327
	Neema Ndatabaye	FO	1	5	40	72	270	387
	Sifa Mukoma	FO	1	5	60	55	80	200
	Mwamuciga	FO	1	17	76	70	100	263
	Buhogo Guilbert	FO	1	26	67	72	71	236
	Furaha Bisimwa	FO	1	17	63	65	80	225
	Nsimire Bagumu	FO	1	15	25	60	119	219
	Sifa Mastaki	FO	1	4	50	20	100	174
	Ombeni Muzusa Ngabo	FO	1	7	60	66	144	277
	Kitumaini Murhebwa	FO	1	25	64	103	132	324
	Batumike Cigangu	FO	1	5	60	60	100	225
	Badose Musakamba	FO	1	32	46	55	124	257
	Miusakamba	FO	1	25	40	64	73	)*
	Nfune Mushagalusa	FO	1	3	40	43	94	180
	Mushiayuma Masirika	FO	1	7	50	52	200	309
	Cibulula	FO	1	9	80	34	200	323
	Odette	FO	1	4	60	200	20	284
	Kamungu	FO	1	9	60	42	300	411
	Mwirunga	FO	1	90	700	43	300	1133
	Bora	FO	1	100	3	50	400	553
	Birindwa Kajeje	FO	1	200	8	24	300	532
	Barhalegehnwa	FO	1	30	100	67	400	597
	Mushayuma Masirika	FO	1	5	90	10	200	305
	Ruhogo Guilbert	FO	1	9	40	24	300	373
	Mudumbi Rwagaza	FO	1	8	90	53	200	351
	Mwirunga	FO	1	60	6	200	34	300
	Sifa Mastaki	FO	1	100	1	500	64	665
	Ombeni	FO	1	30	2	80	10	122
	Kitumaini	FO	1	7	40	100	4	151
	Murhebwa	FO	1	50	8	200	4	262
	Muzusa	FO	1	40	2	50	100	192
Bushumba	Mushiayuma Masirika	FO	1	10	80	5	90	185
	Ciragane Mubake	LP	1	2	90	6	50	148
	Emmanuel Munazi	FO	1	4	86	10	100	200
	Pascal Hodi Masasi	FO	1	6	40	10	60	116
	Cikuru Byamungu	FO	1	7	100	8	90	207
	Mufifina Rukabya	FO	1	8	42	4	98	152
	Iseav Mushweshwe	University	1	8	70	20	70	168
	Akonkwa Maga	FO	1	4	50	8	70	132
	Nabintu Kujirwabuja	FO	1	8	60	5	60	133

Barhalengerha	FO	1	10	80	7	60	157
Nankafu Namegabe	FO	1	3	40	6	50	99
Bazibuhe Kayeye	Church	1	9	70	7	80	166
Charline Furaha	FO	1	9	90	6	40	145
Ellianne Ciikuru	FO	1	5	60	3	40	108
Bakukira Kahonero	FO	1	5	40	8	60	113
Nabunani Mwamuzusa	FO	1	5	60	6	70	141
Mujanda Ntingingwa	FO	1	8	70	10	50	138
Byabuze Ciaungu	Farmer	1	0	0	0	1	1
Mashali Lubanja	Farmer	1	0	0	0	1	1
Buroko Nyamali	Farmer	1	0	0	0	1	1
Kitumaini Murhebwa	Farmer	1	0	0	0	1	1
Batumike Cigangu	FO	1	13	53	32	173	271
Badose Musakamba	FO	1	3	47	6	49	105
Miusakamba Mayele	FO	1	4	30	5	75	114
Nfune Mushagalusa	FO	1	10	60	11	169	250
Mushiayuma Masirika	FO	1	16	87	22	218	343
Ciragane Mubake	FO	1	13	57	8	98	176
Emmanuel Munazi	FO	1	30	100	67	400	597
Byamungu	FO	1	5	90	10	200	305
Cirhuzza	FO	1	9	40	24	300	373
Ntamusinga	FO	1	8	90	53	200	351
Yakobo	FO	1	60	6	200	34	300
Kuhera	FO	1	100	1	500	64	665
Koza	FO	1	30	2	80	10	122
Kahiro	FO	1	7	40	100	4	151
Masumbuko	FO	1	50	8	200	4	262
Kayuka	FO	1	40	2	50	100	192
Matabishi	FO	1	4	30	30	186	250
Birabaluge	FO	1	7	60	36	224	327
Murhuhuka	FO	1	8	80	125	278	491
Baribusa	FO	1	5	90	103	129	327
Shalukoma	FO	1	5	40	72	270	387
Cibalonza	FO	1	5	60	55	80	200
Mitima	FO	1	16	74	103	239	432
Mushagalusa	FO	1	18	68	56	94	236
Cirimwami	FO	1	34	72	72	129	307
Mura	FO	1	22	57	19	60	300
Jetruda	FO	1	13	65	95	226	399
Kamuntu	FO	1	26	68	103	128	325
Muhindo	FO	1	17	52	47	153	269
		386	**7956**	**29576**	**14504**	**44800**	**96657**

Table S2. Type and membership details of organizations and persons directly met to discuss the use of cover crops and other regenerative agriculture practices for improving soil health of coffee systems in Kalehe in Eastern DR Congo. Coop., LP, FO, respectively, denote cooperatives, large plantation, and farm organization, respectively.

Organizations	Type of organizations	Location	No. of persons per organizations during meeting on cover crops	Men		Women		Total
				18-30 years	30-50 years	18-30 years	30-50 years	
Nyakabaga	FO		1	8	70	33	200	311
Nyakungwa	FO		1	5	85	3	40	133
Fuzi	FO		1	8	60	24	400	492
Rwezi	Technical school		1	7	90	46	400	543
Bashwira	FO		1	4	90	35	400	529
Mulume	FO		1	7	30	24	300	361
Ntahogwere	FO		1	9	80	34	200	323
Magoti	FO		1	6	50	24	100	180
Angaliya	LP	Kasheke	1	5	35	30	200	270
Odette	LP		1	7	90	21	300	418
Mulimbi	Technical school		1	10	70	32	400	512
Galuma	FO		1	5	90	69	100	264
Maganji	FO		1	10	65	20	190	285
Bakulikira	FO		1	9	80	54	300	443
Nyakungwa	Technical school		1	4	50	10	200	264
Habamungu	FO		1	9	70	32	400	511

Lukuga	FO		1	15	75	8	70	168
Munongo	FO		1	5	80	10	80	175
Marhegane	FO		1	7	60	67	500	634
Mugisho	FO		1	8	80	6	40	134
Nestine	FO		1	6	90	43	500	639
Beata	FO		1	8	50	7	50	115
Shagashano	Technical school		1	5	70	52	300	427
Chakupewa	FO		1	6	50	23	100	179
Marguerita	FO		1	4	70	24	300	398
Kalihi	FO		1	6	30	13	200	249
Shanyungu 2	FO		1	8	70	41	300	419
Kalinga	FO		1	15	75	24	300	414
Ntabugi	Technical school		1	15	75	34	100	224
Esta	FO		1	6	50	21	300	377
Kito	FO		1	7	80	5	38	130
Lukala	FO		1	20	70	34	200	324
Muhindo	FO		1	4	60	43	500	607
Cambwi	LP		1	23	85	31	200	339
Amuli	Coop		1	54	154	24	100	332
Rugabwa	FO		1	6	40	95	200	341
Bafilemba	FO		1	18	68	60	264	410
Nyakayaga	FO		1	7	40	42	200	289
Ombeni	FO		1	24	56	112	122	314
Bishano	FO		1	19	51	34	200	304
Mapendo	FO		1	74	600	23	300	997
Oscar	FO		1	42	300	31	200	573
Cinabalire	Coop		1	73	600	42	300	1015
Bwamire	FO		1	8	40	24	300	372
Muliriri	FO		1	10	75	82	241	408
Cinamula	FO		1	23	67	45	173	308
Shohoyirhu	LP		1	13	72	95	139	319
Mambili	FO		1	50	59	122	190	421
Cirhalabwa	FO		1	17	39	64	140	260
Njenge	FO		1	6	30	63	150	249
Miruho	FO		1	56	68	103	573	800
Parara	FO		1	24	300	53	400	777
Idee Hamuli	FO		1	43	200	20	100	363
Cirhuza	Technical school		1	3	29	10	22	64
Karhaga	FO		1	4	6	54	400	464
Nyalumya	FO		1	4	10	7	25	46
Kanze Kuhera	FO		1	7	60	46	400	513
Koza Minani	FO		1	5	80	32	100	217
Kayuka Cishugi	LP		1	9	70	21	300	400
Tegemea	LP		1	6	50	34	200	290
Matabishi	Technical school		1	7	40	54	159	260
Birhabaluge	FO	Tchofi	1	17	72	44	110	243
Murhula	FO		1	16	74	89	34	213
Polepole	FO		1	22	65	23	129	239
Didier	Technical school		1	33	36	45	87	201
Mupenda	FO		1	13	44	56	90	203
Cirimwami	FO		1	15	53	75	144	287
Kashegula	FO		1	6	40	45	186	277
Mihigo	FO		1	16	48	75	156	295
Byamuhanya	FO		1	26	54	38	92	210
Mutabazi	FO		1	20	55	90	140	305
Mabuga	FO		1	23	37	52	138	250
Mugunda	Technical school		1	12	78	56	108	254
Kulimushi	FO		1	7	50	72	159	288
Muruhuka	FO		1	6	40	66	165	277
Total			**75**	**1125**	**6275**	**3195**	**15844**	**26439**



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