



Norway's International  
Climate and Forest Initiative  
(NICFI)

# Establishment Report for Breeding Seed Orchard (BSO), F4-*Cordia africana*-Suba

2021

TECHNICAL



**Establishment Report**  
**for**  
**Breeding Seed Orchard (BSO), F4-*Cordia africana*-Suba**

**Provision of Adequate Tree Seed Portfolio (PATSPO)**  
**2021**



## Table of Contents

1. Basic Information about the BSO.....	1
2. Plant Material.....	3
3. Trial Area.....	6
4. Overview.....	7
4.1 Block 1-4.....	8
4.2 Block 5-8.....	9
4.3 Block 9-12.....	10
4.4 Block 13-17.....	11



**PATSPO has prepared establishment reports, similar to this one, for the more than 30 Breeding Seed Orchards (BSO) done from 2017 to 2021.**

## **Establishment Report for (BSO), F4-*Cordia africana*-Suba**

### **1. Basic Information about the BSO**

<b>District</b>	Suba-Sebeta
<b>Forest</b>	Menagesha Suba
<b>Coordinates</b>	37 P 448642, 989911
<b>Region</b>	Oromia
<b>Country</b>	Ethiopia
<b>Title</b>	BSO in Provision of adequate tree seed portfolio (PATSPPO) project/F4 <i>Cordia africana</i> Suba, 2018.
<b>Parallel trial</b>	F1 Dembecha, Amhara and F3 ILRI, Addis Ababa
<b>Objective</b>	<p><u>General objective:</u> development of a significant part of the breeding population in the pool of <i>Cordia Africana</i> in Ethiopia and aiming at conversion to a seed producing BSO.</p> <p><u>Specific objective:</u> Development of an improved seed source based on East African landraces through selections. The BSO will also serve as test site of <i>Cordia Africana</i> landraces.</p>
<b>Design</b>	The trial is planned and established as a randomized and unbalanced 17-block experiment, planted in a continuous series of designs. There are 120 plants representing 23 provenances that includes 54 families and 20 bulk collections in the 17 blocks, planted in 54 rows with distance between rows being 2m and plant spacing 2m. The rows are oriented approx. W-E, and the trial starts in the Northwest corner.
<b>Plant material</b>	The seedlings are raised from different family and provenance collections originated from different parts of Ethiopia, Kenya and Uganda. The seeds were pretreated by soaking in cold water and sown at Suba nursery located in the forest 600 m from the planting site during the period of March 2018.
<b>Trial area</b>	Located in Menagesha Suba forest, 2290-2329 masl with the mean annual rainfall of 1073mm., with humus rich forest soil, approximately 0.79 ha from which <i>Cupressus lusitanica</i> plantation has been harvested late 2017. The slope is ascending from North to South with elevation difference of 80-100m. On the eastern side there is dense Eucalyptus trees under planted with Juniperus. On the southern side there is <i>Grevillea robusta</i> BSO (4m away). On the Western side is there is newly planted One year old <i>Cupressuss lusitanica</i> . On the northern end the is small valley with seasonal stream running from East to West.
<b>Site preparation</b>	Following mechanical weeding, pit preparation and spot hoeing around the pits has been carried out.

**Establishment** Planting pits were prepared two weeks before planting and the planting was done during the period of August 14-20, 2018. The weather condition during planting was cloudy with little shower. There has been a very good plant establishment. Watering was started during October, 2018 and being carried out twice a week.

**Duration** 25+ years after being converted to a seed source.

**Resource persons** Abraham Abiyu (ICRAF), Kedra Mohammed (ICRAF), Yared Kebede (ICRAF), Tiglu Seboka (ICRAF) and Carsten Tom Norgaard (UCPH)

<b>Measurements</b>	<b>Planned</b>	<b>Year</b>
	Height and survival	2019
	Height, Diameter, Forking, Height of Forking and stem straightness	2022
	Height and Diameter	2026



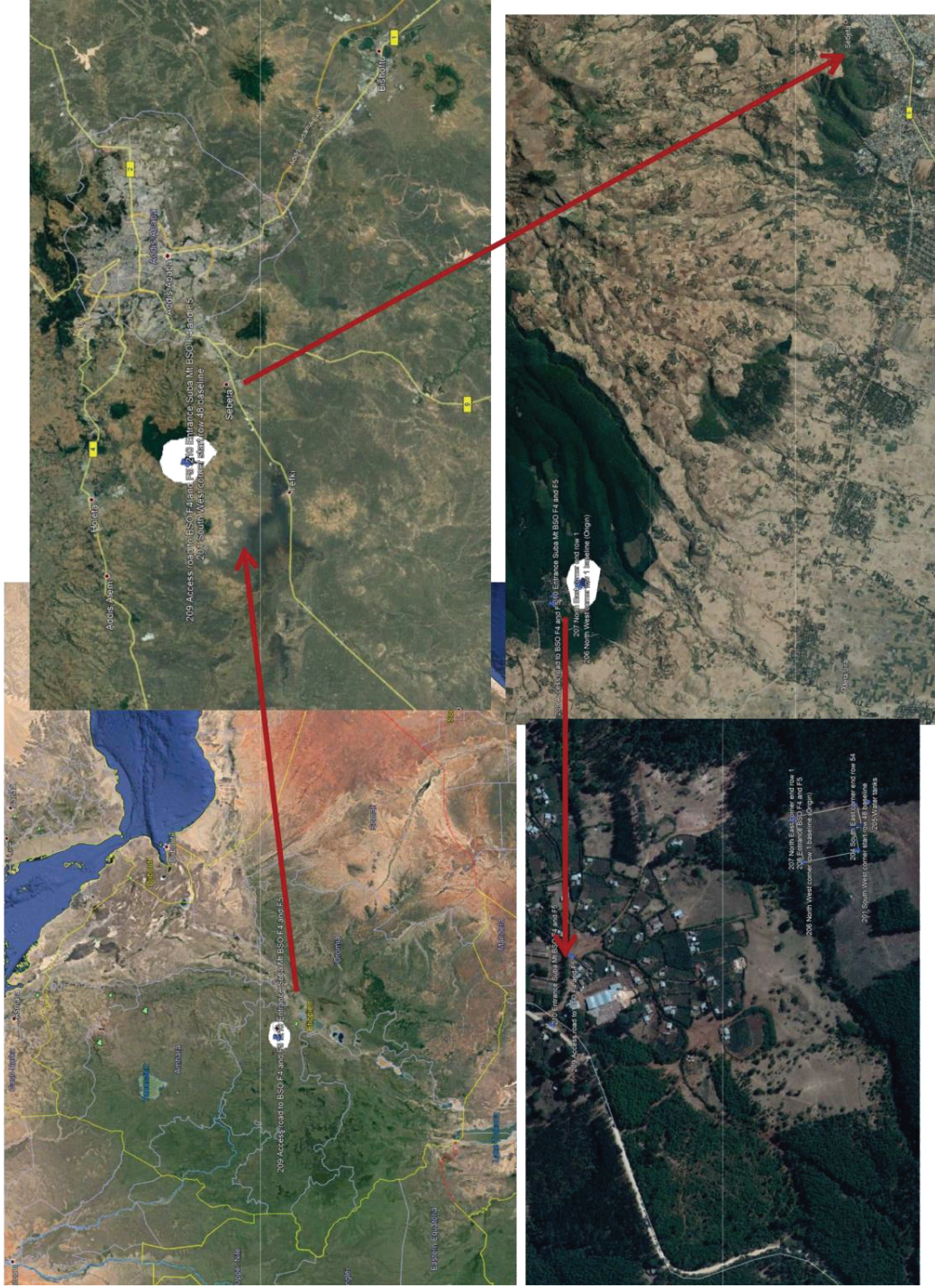
## 2. Plant Material

No	Snumber	Vnumber	Pnumber	Country	Location/Provenance
1	S4		P4	Kenya	Meru forest lodge
2	S5		P5	Kenya	Kaberua
3	S8		P8	Ethiopia	Bahir Dar/Zeghie
4	S9		P9	Ethiopia	Bako
5	S11		P11	Ethiopia	Butajira
6	S13		P13	Ethiopia	Guder
7	S14		P14	Ethiopia	Harar
8	S15		P15	Ethiopia	Hirna
9	S16		P16	Ethiopia	Wondo Genet
10	S17		P17	Ethiopia	Jibat-Gedo District, Finfine Zone, Shanan
11	S18		P18	Ethiopia	Boree District, Sukee
12	S22		P22	Ethiopia	South Gonder Zone, Fogera Woreda, Alemba Kebele, Alemba Site.
13	S23		P23	Ethiopia	North Wollo Zone, Woldiya Woreda, Anova Kebele, Anova Site.
14	S26		P26	Ethiopia	North Shewa Zone, Antsokya Woreda, Majtie Site
15	S27		P27	Ethiopia	Aw Zone, Zigem Woreda, Dembera Kebele, Dembera Site
16	S28		P28	Ethiopia	West Gojjam Zone, North Achefer Kebele, Qunzila Site
17	S29		P29	Ethiopia	North Gonder Zone, Chilga Woreda, Bohena Kebele, Bohena Site
18	S30	V217	P30	Ethiopia	North Bench Zone, Oka and Daki villages.
19	S31	V218	P30	Ethiopia	North Bench Zone, Oka and Daki villages.
20	S33	V220	P30	Ethiopia	North Bench Zone, Oka and Daki villages.
21	S34	V221	P30	Ethiopia	North Bench Zone, Oka and Daki villages.
22	S35	V222	P30	Ethiopia	North Bench Zone, Oka and Daki villages.
23	S37	V224	P30	Ethiopia	North Bench Zone, Oka and Daki villages.
24	S38	V225	P30	Ethiopia	North Bench Zone, Oka and Daki villages.
25	S39	V226	P30	Ethiopia	North Bench Zone, Oka and Daki villages.
26	S40	V227	P30	Ethiopia	North Bench Zone, Oka and Daki villages.
27	S41	V228	P30	Ethiopia	North Bench Zone, Oka and Daki villages.
28	S43	V230	P30	Ethiopia	North Bench Zone, Oka and Daki villages.

29	S44	V231	P30	Ethiopia	North Bench Zone, Oka and Daki villages.
30	S45	V232	P30	Ethiopia	North Bench Zone, Oka and Daki villages.
31	S47	V234	P30	Ethiopia	North Bench Zone, Oka and Daki villages.
32	S48	V235	P30	Ethiopia	North Bench Zone, Oka and Daki villages.
33	S50	V237	P30	Ethiopia	North Bench Zone, Oka and Daki villages.
34	S51	V238	P30	Ethiopia	North Bench Zone, Oka and Daki villages.
35	S52	V239	P30	Ethiopia	North Bench Zone, Oka and Daki villages.
36	S53	V240	P30	Ethiopia	North Bench Zone, Oka and Daki villages.
37	S54	V241	P31	Ethiopia	Adwa
38	S55	V242	P31	Ethiopia	Adwa
39	S56	V243	P31	Ethiopia	Adwa
40	S58	V245	P31	Ethiopia	Adwa
41	S59	V246	P31	Ethiopia	Adwa
42	S61	V248	P31	Ethiopia	Adwa
43	S62	V249	P31	Ethiopia	Adwa
44	S63	V250	P31	Ethiopia	Adwa
45	S64	V251	P31	Ethiopia	Adwa
46	S66	V253	P31	Ethiopia	Adwa
47	S67	V254	P31	Ethiopia	Adwa
48	S68	V255	P31	Ethiopia	Adwa
49	S69	V256	P31	Ethiopia	Adwa
50	S70	V257	P31	Ethiopia	Adwa
51	S72	V259	P31	Ethiopia	Adwa
52	S73	V260	P31	Ethiopia	Adwa
53	S78		P32	Ethiopia	North wollo Zone, Raya Kobo Woreda, Robit Kebele
54	S79		P33	Ethiopia	East Gojjam Zone, Debre Elias
55	S80	V267	P34	Ethiopia	Harar
56	S81	V268	P34	Ethiopia	Harar
57	S82	V269	P34	Ethiopia	Harar
58	S83	V270	P34	Ethiopia	Harar

59	S85	V272	P34	Ethiopia	Harar
60	S86	V273	P34	Ethiopia	Harar
61	S87	V274	P34	Ethiopia	Harar
62	S88	V275	P34	Ethiopia	Harar
63	S89	V276	P34	Ethiopia	Harar
64	S90	V277	P34	Ethiopia	Harar
65	S91	V278	P34	Ethiopia	Harar
66	S92	V279	P34	Ethiopia	Harar
67	S93	V280	P34	Ethiopia	Harar
68	S94	V281	P34	Ethiopia	Harar
69	S95	V282	P34	Ethiopia	Harar
70	S96	V283	P34	Ethiopia	Harar
71	S97	V284	P34	Ethiopia	Harar
72	S98	V285	P34	Ethiopia	Harar
73	S99	V286	P34	Ethiopia	Harar
74	S108		P35		Bahir Dar/Robit

### 3. Trial Area



## 4. Overview

[illegible]

## Key

np no planted seedling

missing

d dead

w wilderness browsing

na non-accessible

#### 4.1 Block 1-4

Block 1-4, from left to right.

20	S80	S28	ad13	S81	S45	S53	S52	S79	AD2	S85	S41	S80	S35	S28	S82	ad10	ad13	S15	S53	S43	S81	AD8	S14	ad10
19	S85	S38	ad16	S38	S18	S35	S29	AD8	ad10	S80	S22	S35	S15	S80	S38	ad19	S93	S35	S83	S35	S85	ad10	S35	ad14
18	S45	S26	ad20	S22	S26	S85	S15	ad14	ad14	S53	da13	S50	S11	S53	S22	S11	S53	S92	S80	S29	S38	ad14	AD8	AD2
17	s53	S18	S22	S86	S28	S93	S38	S26	AD1	S41	ad20	S86	AD2	S91	AD5	ad14	S41	ad14	S97	S26	S51	S11	S11	S79
16	S94	AD9	S41	S50	S13	S80	AD9	AD1	S28	S18	ad16	S78	na	AD1	AD1	S14	S29	S85	S87	S15	S22	AD2	S28	S94
15	AD2	S14	S11	S97	AD5	S15	S51	S13	S14	S34	ad14	S97	S98	S85	ad14	S30	S26	ad10	ad17	S11	S91	S15	S22	S97
14	S29	ad14	S15	S78	ad9	AD8	S78	S28	AD9	AD1	S27	S28	AD2	S41	ad19	AD6	S13	S41	AD1	AD8	S78	S26	S53	S88
13	S22	AD6	S30	S29	ad14	S30	S29	ad19	S26	S26	AD2	ad13	S91	S26	AD9	S28	AD8	S37	na	ad16	S27	S28	S82	S45
12	S15	AD2	S27	S27	AD1	S80	S14	S45	S5	S28	AD8	AD1	S80	AD8	S27	S79	ad16	AD8	AD5	AD2	ad20	S35	S86	S83
11	S11	ad10	S98	S11	ad19	S83	AD8	S82	S15	S5	S29	ad16	S83	ad11	S14	S51	na	na	S11	ad11	AD1	S41	S41	S80
10	S27	S97	AD8	AD8	ad17	ad13	S41	AD1	S41	AD8	S53	S26	ad14	ad20	S51	S22	ad16	S78	S14	ad19	S30	S53	ad16	S78
9	S41	ad14	S51	S14	ad20	S91	S35	ad13	S30	ad13	S86	S81	S11	S18	S29	S4	AD1	S94	S18	ad14	AD9	S8	AD1	S26
8	S51	S78	na	ad15	AD1	S52	S27	S11	S53	AD3	S80	AD6	S28	S38	S78	S97	S14	S29	S22	S11	na	S86	ad20	S29
7	AD8	ad10	S78	ad11	ad13	S28	S22	ad20	S80	ad11	S45	AD5	S53	S27	S88	S88	ad13	S26	S27	AD6	S14	S83	na	AD9
6	AD8	S86	S83	AD2	AD9	S41	AD1	ad17	S85	AD2	S30	S83	S30	AD1	S97	S83	S29	S81	S30	AD1	ad16	S97	S13	S13
5	S78	S5	AD6	AD9	S13	ad20	S86	S11	S82	AD2	S28	AD3	S4	AD9	S97	S38	ad20	S13	S35	S22	S82	S38	S78	S38
4	S83	S81	S22	S85	S53	AD1	ad13	S14	S51	ad14	S4	S86	S15	S50	S81	S81	AD9	S15	S78	S28	S93	S80	S18	S15
3	S97	S14	AD2	S80	S26	S26	S81	S22	S78	ad10	S26	ad20	ad10	ad14	S87	S15	S78	S86	S51	S52	S86	S50	S29	ad13
2	S87	S29	S11	S43	S28	ad16	AD8	S29	S45	S13	S15	S11	S22	ad17	S78	S86	S27	ad16	S85	S41	S79	S83	AD9	ad16
1	ad11	S38	S27	S35	S15	S13	ad16	S38	S27	AD9	S13	AD8	AD6	S14	S29	S45	S97	ad13	S81	S14	S31	S89	S27	ad20
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24



## 4.2 Block 5-8

Block 5-8, from left to right.

20	AD5	na	ad10	S29	S87	ad10	S14	ad10	S78	ad16	S52	ad14	S85	S26	S97	S81	S28	S90	S14	S52	ad16	ad13	ad13	s83
19	ad13	S30	ad19	S14	S47	ad20	S35	S18	S81	ad14	AD9	AD5	S50	ad20	S80	S87	S35	S98	S94	s27	ad13	ad1	ad9	s35
18	ad16	S80	ad14	AD2	ad14	S18	S41	AD5	S30	AD1	ad19	ad10	S17	AD8	S86	S41	S48	S85	S30	s11	ad1	ad8	s26	ad10
17	S14	S22	ad20	S78	AD8	S38	ad19	AD9	S4	ad20	S13	S18	S92	S28	S78	S52	ad20	S8	S80	s4	s13	s11	s89	ad20
16	AD9	S41	AD8	S97	S27	S82	S79	S27	S15	AD8	S35	S28	S38	S53	S29	S97	S13	S53	S99	ad15	ad8	s22	s41	s15
15	AD1	AD2	S13	ad16	ad19	AD1	S86	S53	S51	S13	S26	S99	ad11	np	S51	S78	S15	AD2	S22	np	ad20	s28	s40	s38
14	ad14	S27	S18	AD9	S13	ad14	S97	S29	AD1	S28	S79	S88	S83	ad13	AD9	S27	S26	ad14	S27	s22	s28	ad16	s78	ad5
13	ad20	S52	S28	S27	S29	ad17	S53	S86	ad20	S26	S41	S53	ad15	AD1	S41	S22	S96	S14	S29	ad6	s26	s41	ad17	s17
12	AD8	S85	S78	ad11	S78	AD6	S80	S97	ad16	S15	S85	S30	AD8	S13	S27	AD5	AD8	S11	S4	ad13	s81	s14	s28	s83
11	ad19	S86	S26	ad20	S97	S11	S45	ad15	S22	S51	S94	S50	S26	ad16	ad19	S30	ad13	ad10	S11	ad2	s15	ad20	s13	s45
10	S15	S80	S35	S51	AD1	ad20	S35	S87	ad13	S4	AD1	S80	S11	S38	S22	S22	ad16	S28	S85	ad2	s35	s23	ad16	s90
9	S26	S97	S45	S22	ad13	S26	S22	S80	S27	ad11	ad14	S38	S45	S94	S14	S78	S51	AD6	S14	s40	np	np	s53	ad9
8	S11	AD8	S81	S88	na	S15	ad11	S45	AD8	S93	ad17	S27	S28	S78	ad14	S29	S39	S30	S78	s14	s53	s87	na	s26
7	S35	S51	S86	S4	S11	S41	S27	S53	ad11	S83	S13	S22	S53	S97	AD1	ad17	S80	S52	ad14	s78	s97	s11	ad10	
6	S44	S29	S97	S83	AD2	S28	S29	S97	S91	S78	S28	S15	S88	np	AD3	S14	S86	S78	S50	ad14	s88	s80	np	ad14
5	S28	S40	ad13	S86	S11	S35	AD9	S27	S22	S93	AD9	ad11	np	S29	S86	S27	S14	S22	AD6	ad9	s85	ad1	s41	s13
4	S53	S85	AD2	S80	S15	S53	S14	S29	ad16	S85	ad20	AD8	S79	S26	AD1	ad14	AD2	S88	S93	s29	s38	s27	s80	s78
3	S96	S22	ad16	S93	S22	S86	AD6	AD2	ad13	S78	S18	ad16	S35	S13	ad20	AD9	ad14	S97	AD2	ad6	s27	ad13	s14	s29
2	na	np	S14	S41	S27	S94	ad15	AD8	S14	S52	S26	ad13	AD2	AD9	S18	AD1	ad10	S83	S99	ad10	s18	ad2	s22	s40
1	S81	AD3	AD9	S53	S30	S80	AD2	S35	ad11	S41	S35	AD2	S15	ad16	ad13	AD3	S11	S41	ad11	s27	s45	ad8	s30	ad19
	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48

### 4.3 Block 9-12

Block 9-12, from left to right.

40	S98	S26	S78	S18	S35	S50	S78	S50	S97	S8	S29	S14	S29	S81	S81	S53	S51		ad17	ad19	na	S29	S48	
39	S53	S28	S29	S5	S18	S53	S98	S30	S81	S15	S11	AD2	ad13	ad20	np	S87	S26	S41	ad13	AD1	na	S14	S53	
38	S41	AD8	S81	S85	S26	S85	S92	S28	S53	S30	S28	ad16	AD8	S18	S85	S97	S29	na	AD3	np	AD8	S27	S27	
37	S88	S80	S37	S93	AD3	S80	S27	S26	S88	S92	S78	AD6	S13	S26	S80	S35	S97	S85	AD1	S13	S11	S89	S97	
36	S83	S11	S86	S53	AD9	S94	S85	S11	S45	S41	S23	ad11	ad16	S35	S51	S53	AD8	S85	S15	AD3	AD2	S11	S38	
35	S83	ad11	S97	S80	S29	S15	S80	S14	S38	S93	S38	ad17	na	S45	S41	S78	S17	np	AD9	AD9	S14	S22	ad13	
34	S41	S30	S51	S98	S13	ad20	S27	AD8	S29	S51	S48	S13	S78	S53	S35	S18	S13	AD1	S26	S15	S27	ad20	ad16	
33	S87	ad16	S27	S35	AD1	ad13	S93	AD2	S14	S26	S9	S28	S88	np	S28	S27	ad13	ad14	S30	S28	S18	ad16	ad20	
32	S97	ad20	S22	S26	ad13	ad16	S35	ad16	ad19	AD8	S85	S27	S83	S87	S26	S29	ad20	ad20	S43	S13	S26	S29	AD8	
31	S26	S15	S14	S28	ad19	AD8	S51	ad13	AD9	S28	S97	S83	S38	S97	S15	ad20	ad16	na	S17	S28	S35	S47	S11	
30	AD8	S97	AD5	AD9	AD2	S11	S41	S35	S22	AD2	AD9	na	S45	ad16	S11	AD9	S83	S14	S29	ad13	S41	S53	S14	
29	ad10	S78	AD9	S13	AD1	S28	S28	S80	S27	AD1	S22	S53	S30	ad10	AD2	S13	S41	S30	S26	ad16	S79	S38	S27	
28	S79	AD2	AD2	ad17	ad14	S35	S26	S87	AD3	ad13	S89	S27	S14	S11	ad16	AD1	S93	S27	S13	AD1	S85	S87	S41	
27	S52	ad14	ad14	AD3	AD9	S26	S15	S95	ad10	S13	S47	S4	S22	AD5	AD8	ad14	na	S22	AD9	AD9	S51	S53	S29	
26	S30	ad10	AD1	ad13	S14	S80	na	S41	ad14	ad16	S97	S41	S27	AD2	ad13	ad17	S51	S38	AD2	ad20	S97	S45	S50	
25	S28	S89	S82	S81	S97	S53	AD1	S53	ad10	S27	S78	AD1	AD9	S14	S83	AD2	S8	S78	AD5	S11	S93	AD2	S37	
24	S11	S51	S41	S38	S78	S45	AD8	S22	ad14	S38	S29	ad20	ad19	S28	S89	na	S22	S45	na	S15	S85	na	S18	
23	S14	S14	S22	S51	S29	S85	S13	S27	na	ad11	S14	S18	ad14	S22	na	ad11	S28	S87	np	S22	S78	na	S22	
22	ad20	S11	S27	na	S11	S92	ad13	S29	ad19	S15	ad19	S80	AD3	S31	S41	S15	AD6	S81	S81	S28	S50	AD6	S29	
21	np	S29	AD8	S27	S22	S98	ad16	AD9	S13	AD5	S11	S35	ad10	S50	S79	S11	S33	S97	S35	S30	S41	AD9	S13	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24



#### 4.4 Block 13-17

Block 13-17, from left to right.

40	S4	AD2	S81	S93	S45	na	S27	S22	ad17	na	AD2	S4	na	S38	AD8	AD9	S22	S53	S28	S78	ad9	ad1	ad4	ad14	s78	s51	ad2	ad2	s14	s29
39	na	S29	S27	S81	S15	S35	S85	S11	S97	S78	S27	S28	na	S45	S14	AD1	S79	AD8	AD2	S41	ad1	ad14	s28	ad8	s97	s28	s14	ad16	s27	ad9
38	AD1	S27	S38	S27	S26	S41	S38	AD8	S52	S29	S43	S63	S97	S22	S27	ad20	S13	na	S27	AD1	np	s27	s27	ad9	s78	s15	ad22	ad13	s53	ad1
37	AD5	S22	S41	S35	S78	S93	S51	S29	S28	S14	S35	S93	S97	S14	na	na	S97	S29	na	S22	ad14	s41	s41	ad1	ad4	s13	s4	ad8	ad8	ad4
36	ad14	na	S35	S41	ad20	S81	S95	S78	S11	AD2	S26	S96	S11	AD8	S26	S26	np	ad13	AD8	S26	ad2	s53	ad16	ad20	s35	s26	s22	s15	s18	ad14
35	ad20	S97	S15	S78	AD9	S41	S27	S15	S41	ad16	AD9	na	S45	S29	S41	ad20	S85	np	S97	S97	ad4	ad4	s29	na	s13	s41	ad13	s11	s97	ad13
34	AD1	S51	S26	S15	S13	S97	S87	na	S87	S11	ad14	AD6	S95	S53	S83	na	S45	S51	S28	S29	s27	ad2	s78	ad13	ad13	ad8	s11	s35	s43	s14
33	ad13	S26	S28	S26	AD1	S26	S97	ad13	S26	na	AD6	S18	S41	S41	S35	S41	S14	AD8	S53	na	ad16	ad16	s22	na	na	ad20	s27	s22	s37	s11
32	AD9	S83	S53	S28	ad13	S38	S30	ad20	ad13	S27	S18	na	S14	AD2	AD1	S28	na	S52	S26	ad4	ad8	s78	s26	ad2	ad9	na	s83	s28	s8	s85
31	S18	S38	AD8	AD8	a17	S51	S17	AD1	AD9	AD8	ad4	AD9	na	ad13	S13	S27	S27	S85	S78	AD9	s41	s26	s97	ad9	ad1	ad13	na	s41	ad4	s22
30	S37	ad14	na	S13	ad16	na	ad20	AD1	S8	S50	na	S35	S97	S51	AD9	S50	AD8	S97	na	AD9	s78	ad13	ad20	ad14	s29	s97	ad8	s53	ad4	s48
29	S27	AD2	ad20	ad20	na	S18	na	ad20	S30	S22	S78	S26	S27	AD8	S28	S14	S28	S41	S29	AD8	s53	na	ad4	s27	s51	ad4	s30	s50	ad1	s27
28	S82	S41	S97	ad4	S97	S27	AD9	ad13	S15	S38	S28	S41	AD8	S34	S51	S52	na	S35	AD8	ad13	s29	ad8	ad13	ad16	s26	s35	s53	s97	s14	s30
27	S78	ad11	ad16	ad13	ad11	S29	ad13	AD8	ad20	S97	S14	S27	S53	na	S27	S51	S53	S29	na	ad14	s26	s29	ad16	ad8	ad20	s78	s47	s87	ad8	s97
26	S60	AD6	ad13	na	AD8	AD3	AD2	S15	AD1	S83	AD2	S93	S4	S30	ad16	AD8	S97	S14	na	S28	s97	s97	ad1	s29	s41	s50	s86	s85	ad13	s22
25	na	S15	S85	S27	AD2	AD9	S26	ad16	S95	ad4	na	AD2	S29	S28	ad20	S27	S22	AD9	S27	S27	s97	s27	s29	s28	s18	s22	ad16	s22	ad9	s53
24	S29	S30	S89	S85	S28	S14	S41	na	S51	AD6	na	S13	S22	AD9	S22	S30	S4	S26	AD9	S41	s26	s22	s97	s26	np	s15	s13	s78	s18	s41
23	S26	S27	S97	S30	S22	AD1	S53	S26	S85	S22	S26	S28	S11	S13	S41	S14	AD2	na	AD2	S78	s29	s41	ad2	s97	s78	ad20	s28	s8	s26	ad8
22	S14	S53	S38	S41	S53	na	S28	S27	S78	S35	S45	S63	AD2	ad13	S14	S14	S11	ad16	ad14	S22	na	s78	ad8	s78	s78	ad8	s41	s41	s29	ad14
21	ad19	S22	S4	S89	S15	AD2	S13	S4	S29	S27	S97	S97	ad14	AD1	S52	S99	ad14	ad13	na	ad1	na	s28	s26	s53	s97	ad13	s78	s52	s35	ad2
	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54



PATSPPO/ICRAF Office  
c/o ILRI Campus, Gurd  
Shola, P.O. Box 5689,  
Addis Ababa, Ethiopia

Phone: 251-116172000  
ext. 2491  
Email: K.Hadgu@cgiar.org

Website: <https://www.worldagroforestry.org/project/provision-adequate-tree-seed-portfolio-ethiopia>