Japan International Cooperation Agency (JICA)
Ministry of Waters, Forests and Environmental Protection (MWFEP)
Romania

THE FEASIBILITY STUDY ON FORESTS RESTORATION IN ROMANIAN PLAIN

FINAL REPORT

VOLUME 2

APPENDIX

JANUARY, 2000

JAPAN FOREST CIVIL ENGINEERING CONSULTANTS FOUNDATION

PASCO INTERNATIONAL INC.


1155100[9]

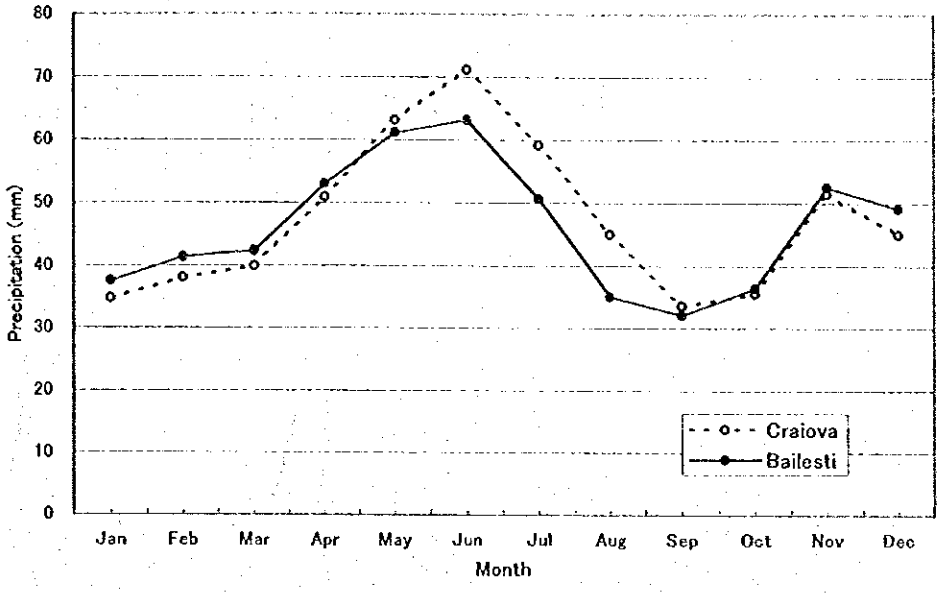
The Feasibility Study on Forests Restoration in Romanian Plain
Draft Final Report

Volume Two : Appendixes

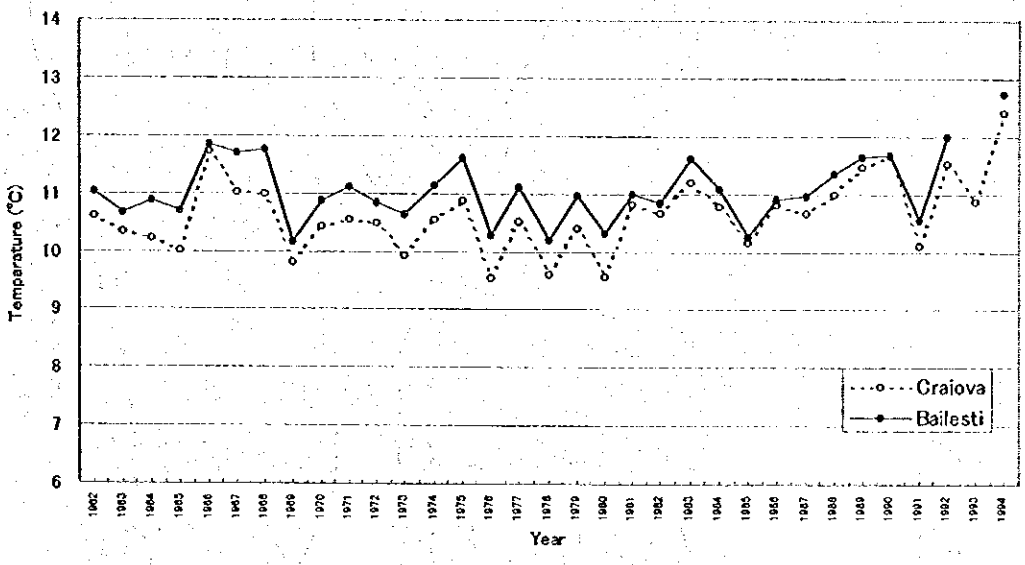
Contents of Appendixes

Appendix A Climate and Hydrology

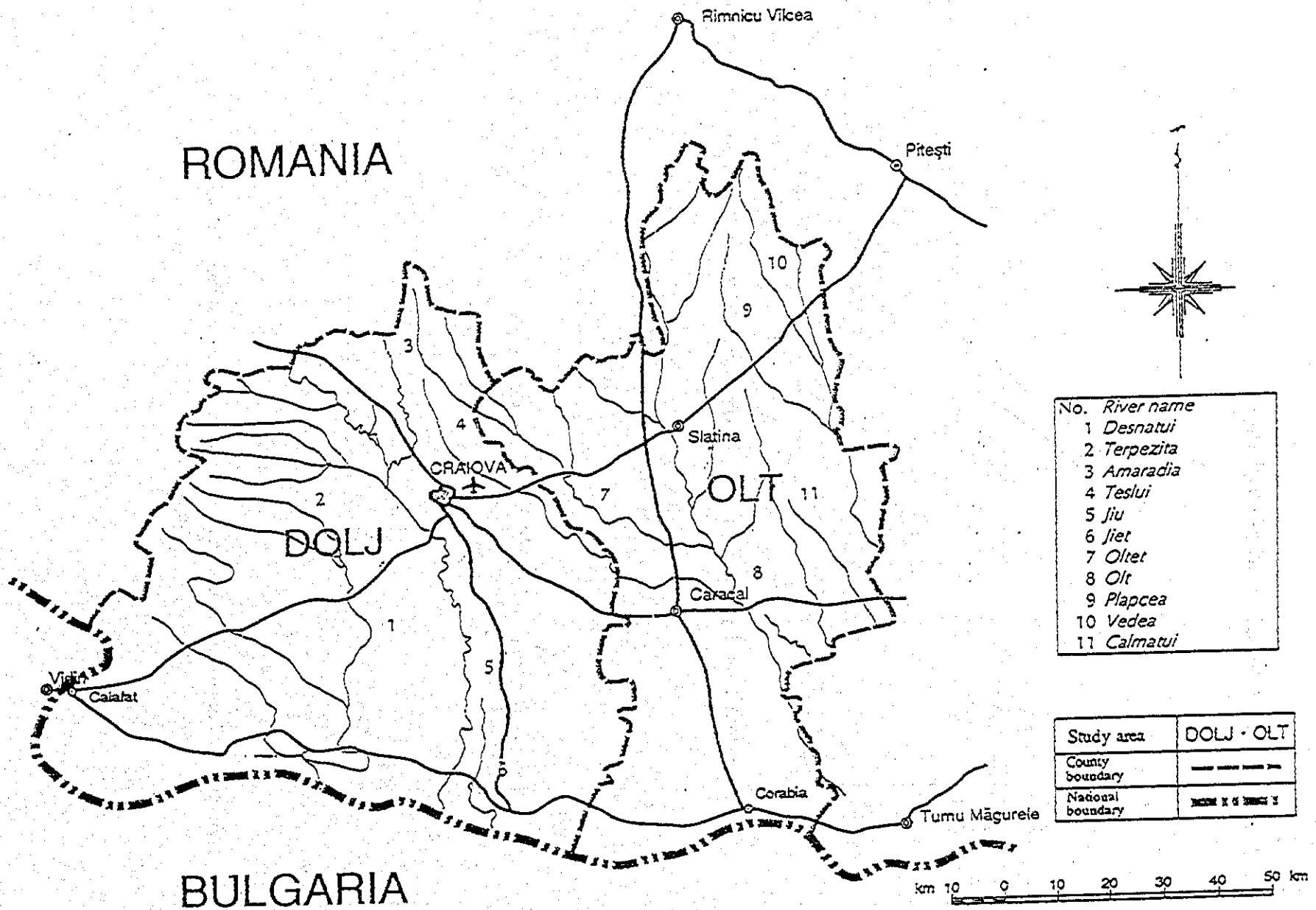
Appendix A: Climate and Hydrology



Appendix A-1 Monthly precipitation at Craiova Observatory and Bailesti Observatory



Appendix A-2 Annual mean temperature at Craiova Observatory and Bailesti Observatory (1962 - 1994)



Appendix A-3 Map of Main River System in Olt County and Dolj County

Appendix A-4 Precipitation per hour at Criva Forest

June, 1998 — Precipitation per Hour — Observatory: Criva

Day/Time	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Total	Remarks
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	Start of observation
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
Sub Total																									0.0	
11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.5	-	-	8.0	-	-	0.5	0.5	10.5	
13	1.0	3.0	0.5	1.0	1.0	2.0	-	1.0	0.5	0.5	-	-	-	-	-	0.5	-	-	-	-	-	-	-	-	11.0	
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
18	3.5	6.0	7.0	3.0	2.5	-	-	0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22.5	
19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
Sub Total																									44.0	
21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.0	-	-	-	-	-	3.0	
30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
31																									0.0	
Sub Total																									3.0	
Total																									47.0	

July, 1998 — Precipitation per Hour — Observatory: Criva

Day/Time	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Total	Remarks
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
4	-	-	-	-	-	0.5	-	-	0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.0	
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4.5	4.5	
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.5	-	-	-	-	-	-	-	-	0.5	
9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
Sub Total																									6.0	
11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
16	-	-	-	0.5	5.0	5.0	2.0	-	1.0	1.0	2.5	6.5	1.0	0.5	1.0	3.5	3.5	7.5	1.5	0.5	-	-	-	-	42.5	
17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
Sub Total																									42.5	
21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.5	1.0	2.5	
29	5.0	-	0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.5	
30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
Sub Total																									8.0	
Total																									56.5	

(Appendix A-4 Continued)

August, 1998 — Precipitation per Hour — Observatory: Criva

Day/Time	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Total	Remarks
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
6	-	-	-	-	-	-	-	-	15.0	1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16.0	
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
Sub Total																									16.0	
11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
Sub Total																									0.0	
21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.5	1.5	2.5	5.0	10.5	
29	2.5	5.5	8.5	-	0.5	-	-	-	-	-	-	-	-	-	-	0.5	-	1.5	0.5	0.5	6.5	2.5	-	0.5	29.5	
30	1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.0	
31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
Sub Total																									41.0	
Total																									57.0	

September, 1998 — Precipitation per Hour — Observatory: Criva

Day/Time	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Total	Remarks
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
4	-	-	-	-	-	-	-	-	-	-	-	3.0	1.0	1.5	-	-	1.0	-	-	-	1.0	-	-	-	7.5	
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
6	-	-	-	-	-	-	-	-	-	-	-	0.5	-	-	1.5	3.0	2.0	-	0.5	-	-	-	-	-	7.5	
7	-	-	-	-	0.5	4.0	5.0	2.5	-	-	0.5	0.5	-	-	-	-	-	-	-	-	-	-	-	-	13.0	
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
9	-	-	-	-	-	-	-	-	0.5	0.5	0.5	-	-	1.0	0.5	0.5	-	-	-	0.5	-	-	-	-	4.0	
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
Sub Total																									32.0	
11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
13	-	-	-	-	-	-	-	-	1.0	3.0	0.5	-	-	-	0.5	-	-	1.0	-	-	-	-	-	-	6.0	
14	-	-	-	-	-	-	-	-	1.0	0.5	0.5	-	1.0	0.5	1.5	-	-	-	-	-	-	-	-	-	5.0	
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
18	-	-	-	-	-	-	1.0	2.0	2.0	1.0	0.5	0.5	-	-	-	-	-	-	-	-	-	-	-	-	7.0	
19	-	-	-	-	-	-	-	-	-	-	-	-	-	0.5	0.5	0.5	-	-	-	-	-	0.5	0.5	-	2.5	
20	-	0.5	-	-	1.5	1.0	3.5	4.0	3.5	2.5	2.0	0.5	-	-	-	-	-	0.5	1.0	1.5	1.0	0.5	0.5	1.0	25.0	
Sub Total																									45.5	
21	1.0	1.0	0.5	1.5	3.5	1.0	-	-	-	-	0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	9.0	
22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
28	-	-	-	-	-	-	-	-	-	0.5	0.5	-	-	-	1.0	2.5	-	-	-	-	-	-	-	-	4.5	
29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
31																									0.0	
Sub Total																									13.5	
Total																									91.0	

(Appendix A-4 Continued)

October, 1998 — Precipitation per Hour — Observatory: Criva

Day/Time	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Total	Remarks
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
3	1.5	2.0	-	0.5	0.5	1.5	0.5	0.5	-	0.5	-	0.5	2.5	1.5	-	1.5	-	0.5	-	-	-	-	-	0.5	14.5	
4	-	-	-	-	-	-	-	0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.5	
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
8	1.0	1.5	-	-	-	0.5	-	-	0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.5	
9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
10	-	-	-	-	-	-	-	-	-	-	-	0.5	-	-	-	-	-	-	-	-	-	-	-	-	0.5	
Sub Total																									19.0	
11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.0	0.5	1.5	4.0	
13	1.0	-	-	0.5	2.5	1.0	1.0	1.5	2.5	1.5	0.5	-	-	2.0	1.0	2.5	-	-	-	-	-	-	-	0.5	18.0	
14	-	-	-	-	-	-	-	-	-	-	-	-	0.5	-	0.5	-	-	-	-	-	-	-	-	-	1.0	
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
Sub Total																									23.0	
21	1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.0	
22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
26	-	-	-	-	-	0.5	1.5	2.0	0.5	1.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6.0	
27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
Sub Total																									7.0	
Total																									49.0	

November, 1998 — Precipitation per Hour — Observatory: Criva

Day/Time	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Total	Remarks
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
2	-	-	-	-	-	-	-	-	0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.5	
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.5	-	-	0.5	
7	-	0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.5	
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
Sub Total																									1.5	
11	-	-	-	-	-	-	-	-	0.5	1.5	-	-	0.5	-	0.5	-	-	-	-	-	-	-	-	0.5	3.5	
12	-	0.5	-	0.5	1.0	-	1.0	1.0	0.5	-	0.5	1.0	0.5	0.5	0.5	-	-	0.5	-	-	-	-	-	-	8.0	
13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.5	-	-	-	-	-	-	0.5	
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
15	-	-	-	-	-	-	-	-	-	-	-	-	0.5	2.5	1.0	-	-	-	2.0	1.0	-	-	-	-	7.0	
16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
20	-	-	-	-	-	-	-	-	-	-	-	0.5	-	-	-	-	-	-	-	-	-	-	-	-	0.5	
Sub Total																									19.5	
21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
25	-	-	-	-	-	-	-	-	-	-	-	-	0.5	-	-	-	-	-	-	-	-	-	-	-	0.5	
26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	Stop observing
28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
Sub Total																									0.5	
Total																									21.5	

(Appendix A-4 Continued)

March, 1999 — Precipitation per Hour — Observatory: Criva

Day/Time	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Total	Remarks
1																									0.0	
2																									0.0	
3																									0.0	
4																									0.0	
5																									0.0	
6																									0.0	
7																									0.0	
8																									0.0	
9																									0.0	
10																									0.0	
Sub Total																									0.0	
11																									0.0	
12																									0.0	
13																									0.0	
14																									0.0	
15																									0.0	Start of observation
16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
Sub Total																									0.0	
21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
28	-	-	-	-	-	1.0	1.5	1.0	-	-	-	-	-	-	-	-	-	0.5	-	0.5	-	-	0.5	-	5.0	
29	-	-	-	-	-	-	-	0.5	-	-	-	-	-	-	-	-	-	-	-	0.5	-	-	-	-	1.0	
30	-	-	-	-	-	-	0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.5	1.0	
31	-	-	-	-	-	0.5	-	-	-	0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.0	
Sub Total																									8.0	
Total																									8.0	

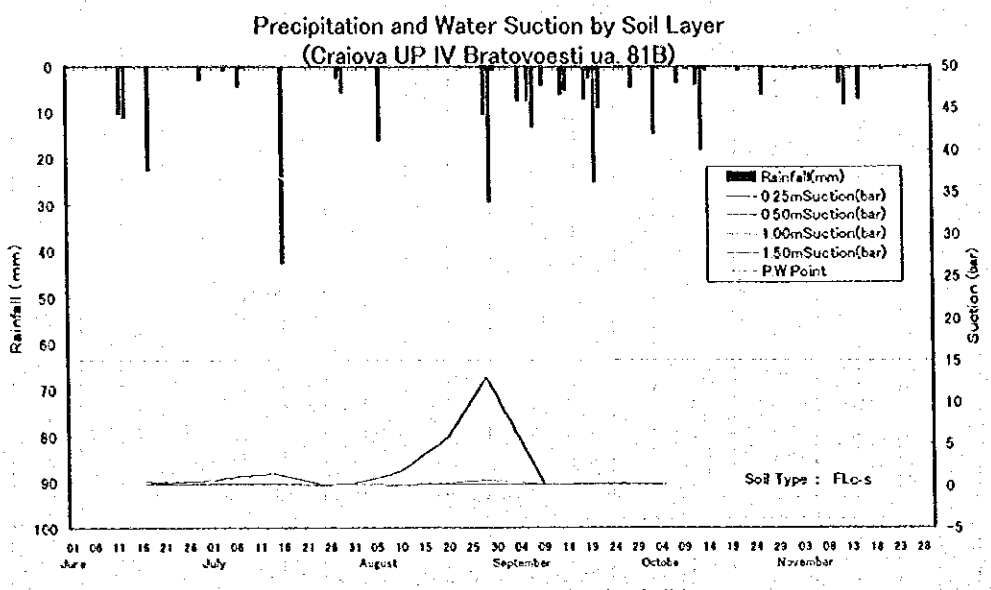
April, 1999 — Precipitation per Hour — Observatory: Criva

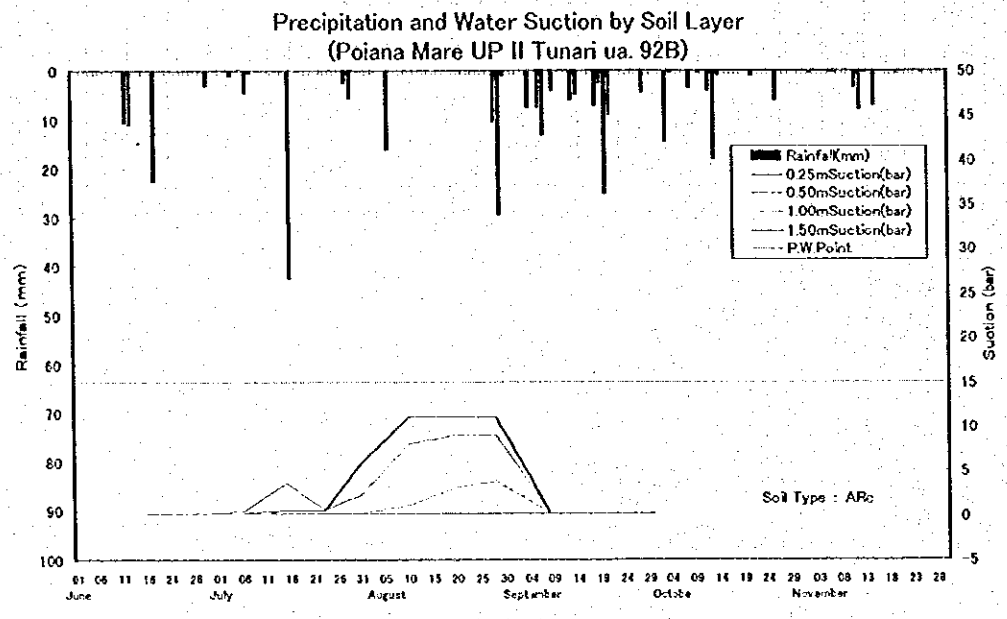
Day/Time	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Total	Remarks
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.5	0.5	0.5	-	-	-	-	-	1.5	
3	-	-	-	-	0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.5	
4	0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.5	
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.5	-	-	-	2.5	
Sub Total																									5.0	
11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.0	-	-	-	-	-	-	-	3.0	
14	-	-	0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.5	
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
17	-	-	-	-	-	0.5	0.5	1.0	-	-	1.0	0.5	-	-	-	7.0	-	-	-	-	-	0.5	-	-	10.5	
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.5	
19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
20	-	-	-	-	-	-	-	-	-	-	-	-	-	0.5	-	-	-	-	-	-	-	-	-	-	0.5	
Sub Total																									15.0	
21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
23	-	-	-	-	-	-	-	-	-	-	-	-	-	1.0	1.0	1.0	2.0	2.0	1.5	0.5	0.5	-	-	-	9.5	
24	-	-	-	-	-	-	-	3.0	2.5	5.5	2.0	-	-	-	-	-	-	-	-	-	-	-	-	-	13.0	
25	-	-	-	-	11.0	1.0	0.5	0.5	0.5	-	-	-	-	-	-	-	-	-	0.5	0.5	2.5	-	-	0.5	17.5	
26	2.5	3.5	1.5	0.5	-	4.5	1.5	-	0.5	-	-	-	-	-	-	-	-	-	-	-	0.5	1.0	0.5	-	16.5	
27	1.0	5.5	2.5	0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9.5	
28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
31																									0.0	
Sub Total																									66.0	
Total																									86.0	

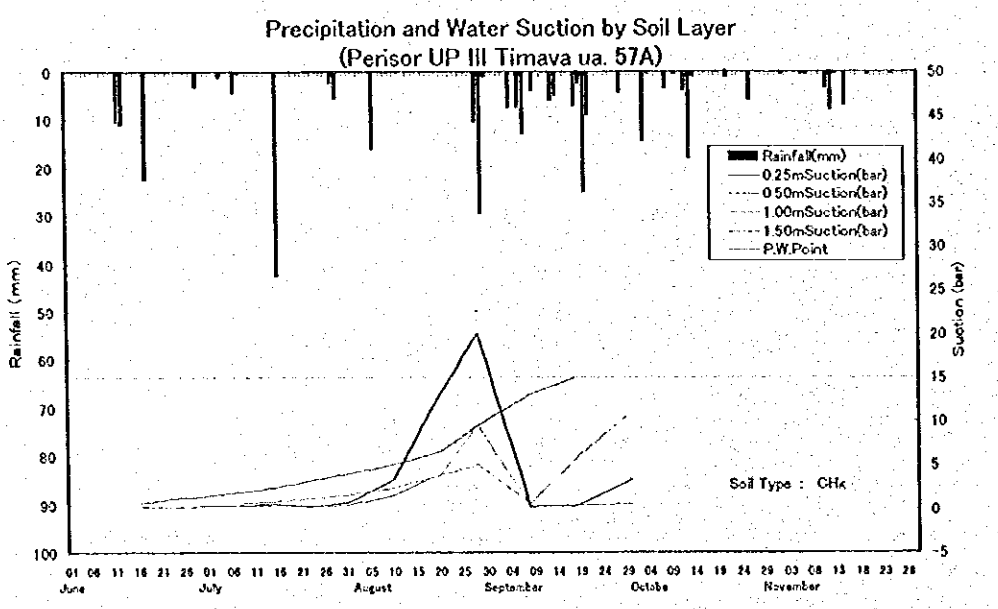
(Appendix A-4 Continued)

May, 1999	Precipitation per Hour																								Observatory	Criva	
Day/Time	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Total	Remarks
1	1.5	0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.0	
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.5	0.5	
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.5	-	-	-	-	-	-	-	-	0.5	1.0	
6	0.5	1.5	-	0.5	-	0.5	-	0.5	-	0.5	-	-	-	-	-	-	0.5	-	-	-	-	-	-	-	4.5	
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
10	0.5	-	1.5	1.0	-	-	-	-	0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.5	
Sub Total																									11.5	
11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
13	-	-	-	-	-	-	-	-	-	-	-	0.5	0.5	1.5	-	-	-	-	-	-	-	-	-	-	2.5	
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4.5	5.5	9.5	19.5	
15	-	-	5.5	-	0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6.0	
16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.5	-	-	-	-	-	0.5	
17	-	-	-	-	-	-	-	0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.5	
18	-	-	-	-	-	-	-	-	-	-	-	-	-	1.5	-	0.5	-	-	-	-	-	-	-	-	2.0	
19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
Sub Total																									31.0	
21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
22	-	-	-	-	-	-	-	3.0	4.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7.0	
23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.5	3.5	2.0	-	-	6.0	
24	-	-	-	-	-	-	-	-	-	-	-	-	0.5	-	-	-	-	-	-	-	-	-	-	-	0.5	
25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	
Sub Total																									13.5	
Total																									56.0	

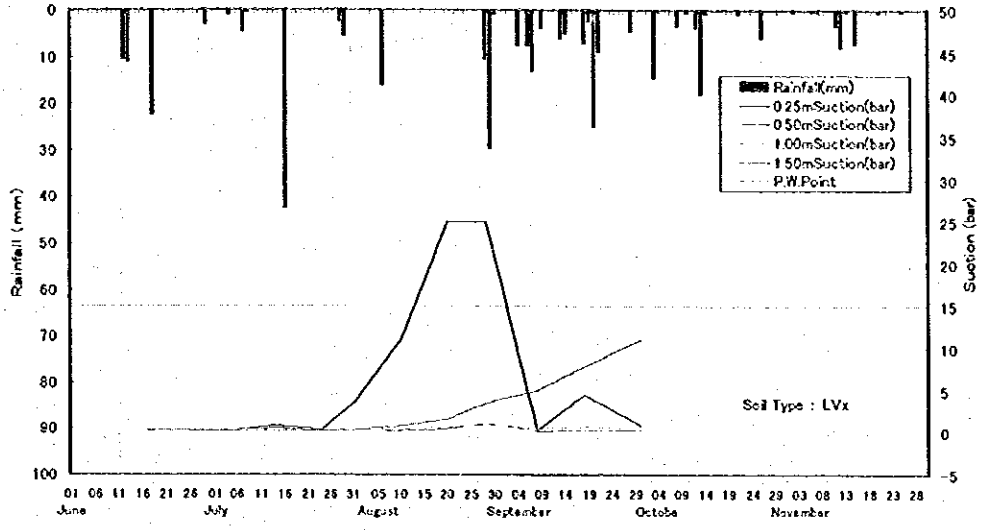
Appendix A-5 Precipitation and Water Suction



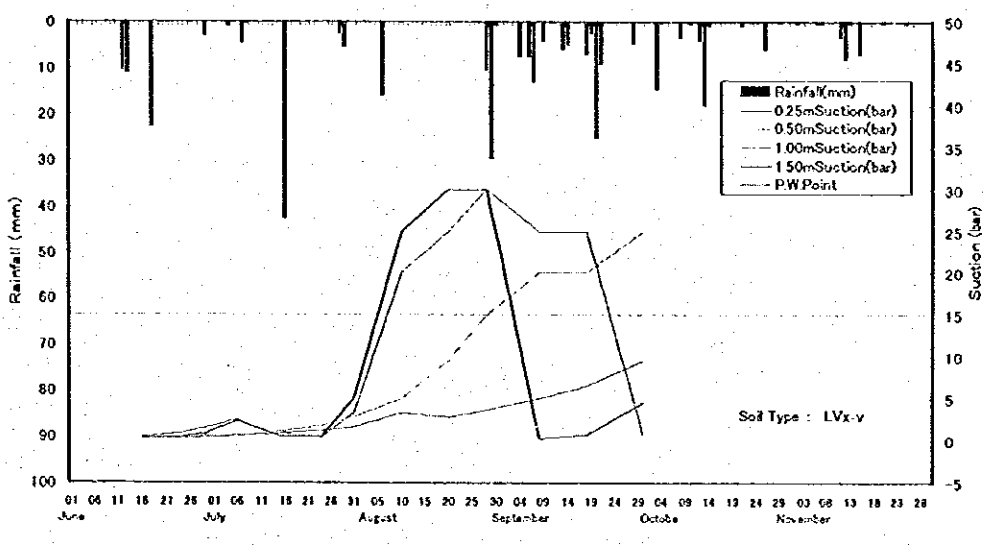




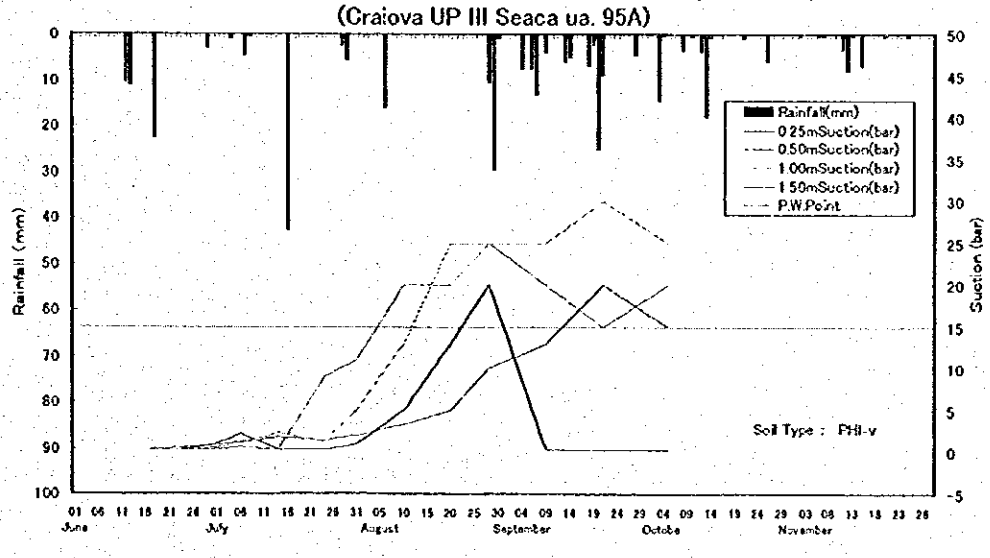
Precipitation and Water Suction by Soil Layer
(Craiova UP I Criva ua. 80)



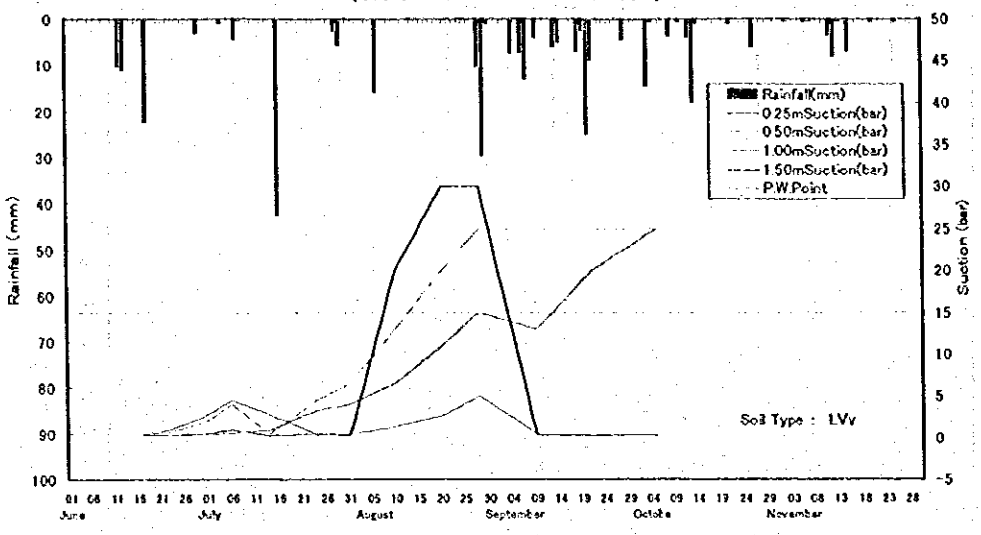
Precipitation and Water Suction by Soil Layer
(Perisor UP I Verbicioara ua. 64A)

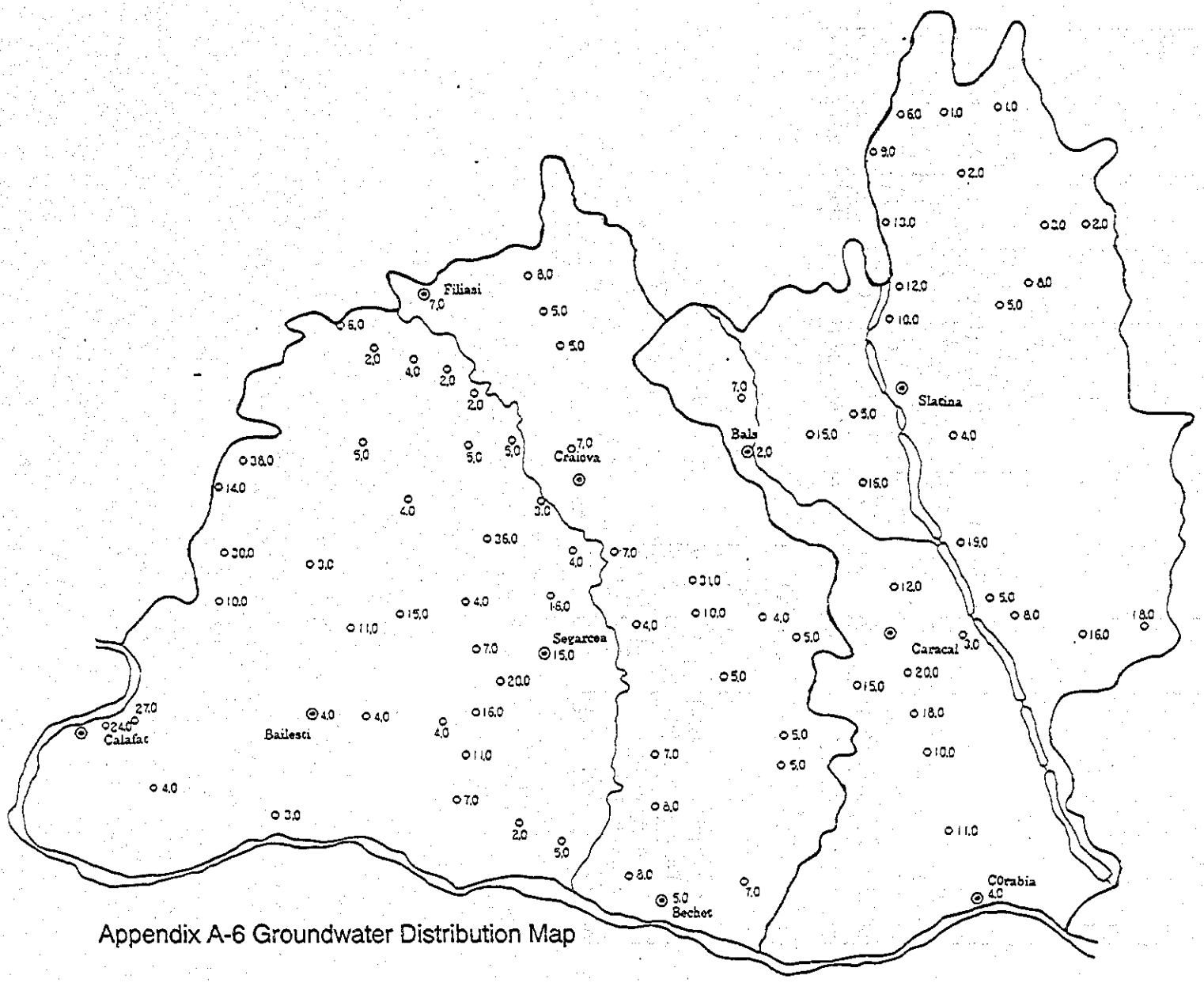


Precipitation and Water Suction by Soil Layer
(Craiova UP III Seaca ua. 95A)



Precipitation and Water Suction by Soil Layer
(Craiova UP III Seaca ua. 46A)





Appendix A-6 Groundwater Distribution Map

Appendix A-7 Soil porosity ratio on each study point

Items	Study Point								
	Slatina UP III, ua.95a			Craiova UP I, ua.80			Craiova UP IV, ua.81B		
Sample Depth (cm)	15	50	80	15	50	80	10	45	80
pF0.7 Porosity Ratio (%)	5.3	0.4	0.5	0.8	0.4	0.6	1.3	2.2	3.9
pF1.7 Porosity Ratio (%)	7.3	0.6	0.7	1.2	0.6	0.8	1.6	3.0	4.5
pF2.7 Porosity Ratio (%)	15.2	3.0	4.2	5.9	3.0	3.3	5.3	9.5	10.6
pF4.0 Porosity Ratio (%)	35.1	21.6	22.1	32.2	19.6	20.0	45.2	40.3	39.1

Items	Study Point								
	Slatina UP III, ua.46a			Perisor UP I, ua.114A			Perisor UP III, ua.57A		
Sample Depth (cm)	15	50	90	15	45	80	15	50	80
pF0.7 Porosity Ratio (%)	4.8	2.0	1.2	4.6	1.7	1.9	1.8	1.0	1.4
pF1.7 Porosity Ratio (%)	5.9	2.6	1.7	5.9	1.8	2.2	2.6	1.1	2.0
pF2.7 Porosity Ratio (%)	11.7	8.4	6.1	12.9	5.8	5.7	7.2	3.6	6.2
pF4.0 Porosity Ratio (%)	42.6	40.9	38.8	39.6	27.1	27.2	39.7	20.8	27.1

Items	Study Point	
	Poiana Mare UP III, ua.15A	
Sample Depth (cm)	15	80
pF0.7 Porosity Ratio (%)	16.1	8.5
pF1.7 Porosity Ratio (%)	18.0	8.9
pF2.7 Porosity Ratio (%)	27.5	14.0
pF4.0 Porosity Ratio (%)	47.5	40.1

Appendix B Soil

Appendix B: Soil

Appendix B-1 Positions of Soil Profile Points

Profile No.	Location		Position	
	Ocol Silvic	UP, ua.	Longitude	Latitude
Dolj No. 1	CRAIOVA	UP III, ua. 95A (Seaca)	44° 21.332 N	23° 18.051 E
Dolj No. 2	CRAIOVA	UP I, ua. 80 (Criva)	44° 15.862 N	23° 38.522 E
Dolj No. 3	CRAIOVA	UP I, ua. 90 (Criva)	44° 15.706 N	23° 38.764 E
Dolj No. 4	CRAIOVA	UP II, ua. 62G (Bucovat)	44° 17.312 N	23° 42.462 E
Dolj No. 5	CRAIOVA	UP IV, ua. 144A (Cosoveni)	44° 13.685 N	23° 56.051 E
Dolj No. 6	CRAIOVA	UP IV, ua. 81B (Bratovoesti)	44° 06.059 N	23° 54.290 E
Dolj No. 7	AMARADIA	UP III, ua. 114B (Barota)	44° 43.756 N	23° 46.514 E
Dolj No. 8	CRAIOVA	UP III, ua. 46A(Seaca)	44° 23.035 N	23° 12.811 E
Dolj No. 9	PERISOR	UP I, ua. 114A (Verbicioara)	44° 17.560 N	23° 12.916 E
Dolj No. 10	PERISOR	UP I, ua. 119A (Verbicioara)	44° 17.095 N	23° 13.239 E
Dolj No. 11	PERISOR	UP III, ua. 57A (Timava)	44° 08.549 N	23° 32.021 E
Dolj No. 12	PERISOR	UP II, ua. 27A (Izvoare, Rudari)	44° 09.081 N	23° 19.306 E
Dolj No. 13	POIANA MARE	UP III, ua. 15A (Pisculet)	43° 50.226 N	23° 08.863 E
Dolj No. 14	POIANA MARE	UP III, ua. 11B (Pisculet)	43° 50.026 N	23° 08.490 E
Dolj No. 15	APELE VII	UP II, ua. 75C (Apele Vii)	44° 02.737 N	24° 03.429 E
Dolj No. 16	APELE VII	UP II, ua. 42C (Apele Vii)	44° 02.620 N	24° 01.752 E
Dolj No. 17	SEGARCEA	UP III, ua. 72A (Radovan, Desnatui)	44° 09.256 N	23° 36.290 E
Dolj No. 18	SEGARCEA	UP III, ua. 84A (Radovan, Desnatui)	44° 08.919 N	23° 37.654 E
Dolj No. 19	SADOVA	UP III, ua. 11A (Zaval, Lunca Jiu)	43° 49.485 N	23° 52.519 E
Dolj No. 20	AMARADIA	UP II, ua. 37D (Farcasu)	44° 38.991 N	23° 44.604 E
Olt No. 1	CARACAL	UP III, ua. 52A (Resca)	44° 11.210 N	24° 25.259 E
Olt No. 2	BALS	UP V, ua. 100 (Bistrita)	44° 21.943 N	24° 11.401 E
Olt No. 3	BALS	UP V, ua. 145 (Saru)	44° 25.406 N	24° 11.579 E
Olt No. 4	VULTURESTI	UP I, ua. 98D (Dumitresti)	44° 37.169 N	24° 23.545 E
Olt No. 5	SLATINA	UP V, ua. 37A (Seaca)	44° 42.597 N	24° 28.257 E
Olt No. 6	SLATINA	UP IV OPORELU, ua. 123 (Ghiteasca)	44° 33.581 N	24° 34.333 E
Olt No. 7	SLATINA	UP IV OPORELU, ua. 151A (Corbu, Sinesti)	44° 28.582 N	24° 41.332 E
Olt No. 8	CARACAL	UP I, ua. 35 (Vladila)	44° 00.195 N	24° 22.461 E

Appendix B-2 Soil Profile Points and Soil Classification

Profile No.	Location Ocol Silvic, UP, ua.	Vegetation	Soil Classification	
			SRCS	FAO/UNESCO
Dolj No. 1	CRAIOVA UP III, ua. 95A (Scaca)	*Q. frainetto* 98% *Q. cerris* 2% 60 y	BDmo-vs Sol brun argiloiluvial molic-vertic	PHl-v Vertic-Luvic Phaeozems (weak luvic)
Dolj No. 2	CRAIOVA UP I, ua. 80 (Criva)	*Q. frainetto* 90% *Q. cerris* 10% 80-90 y degraded 20-30% *Q.c.* increase	BRti Sol brun roscat tipic (slab luvic)	LVx Chromic Luvisols (weak luvic)
Dolj No. 3	CRAIOVA UP I, ua. 90 (Criva)	*Q. frainetto* 90% *Q. cerris* 10% 49-50y	BDti Sol brun argiloiluvial tipic	LVh Haplic Luvisols
Dolj No. 4	CRAIOVA UP II, ua. 62G (Bucovat)	*Q. frainetto* 70% 66y *Q. cerris* 30%	BDpz Sol brun argiloiluvial pseudogleizat	LVh-j Stagnic-Haplic Luvisols
Dolj No. 5	CRAIOVA UP IV, ua. 144A (Cosoveni)	*Q. frainetto* 90% 50y Others 10% degraded 30-40%	RPti Sol brun roscat luvic tipic	LVx Chromic Luvisols
Dolj No. 6	CRAIOVA UP IV, ua. 81B (Bratovoesti)	*Q. robur* 50% 120y *F. excelsior* 20% 80y *Carpinus* sp. 10% Others 20%	SAsc Sol aluvial salinizat	FLc-s Sali-Calcaric Fluvisols
Dolj No. 7	AMARADIA UP III, ua. 114B (Barota)	*Q. petraea* 100% 90y degraded 5-10% *Q.c.* increase	SPvspz Luvisol albic vertic pseudogleizat	LVa-v-j Stagnic-Vertic Albic Luvisols
Dolj No. 8	CRAIOVA UP III, ua. 46A (Scaca)	*Q. frainetto* 100% 62y degraded 25-30% *Q.c.* increase	BDvs Sol brun argiloiluvial vertic	LVv Vertic Luvisols (weak luvic)
Dolj No. 9	PERISOR UP I, ua. 114A (Verbicioara)	*Q. frainetto* 40% 90y *Q. cerris* 60%	RPvs Sol brun roscat luvic vertic	LVx-v Verti-Chromic Luvisols
Dolj No. 10	PERISOR UP I, ua. 119A (Verbicioara)	*Q. frainetto* 30% 90y *Q. cerris* 70% degraded 40%	RPvs Sol brun roscat luvic vertic	LVx-v Verti-Chromic Luvisols

(Appendix B-2 continue)

Profile No.	Location Ocol Silvic, UP, ua.	Vegetation	Soil Classification	
			SRCS	FAO/UNESCO
Dolj No. 11	PERISOR UP III, ua. 57A (Timava)	*Q. frainetto* 40% 55y *Q. cerris* 50% *Q. pubescens* 10% degraded 10-15%	CCi Cernoziom cambic tipic	CHk Calcic Chernozems
Dolj No. 12	PERISOR UP II, ua. 27A (Izvoare, Rudari)	*Q. frainetto* 40% 55y *Q. cerris* 60% degraded 0-5%	BRti Sol brun roscat tipic slab luvic	LVx Chromic Luvisols
Dolj No. 13	POIANA MARE UP III, ua. 15A (Pisculet)	*Robinia pseudoacacia* 100% 22y	PSti Psamosol tipic (carbonatic)	ARc Calcaric Arenosols
Dolj No. 14	POIANA MARE UP III, ua. 11B (Pisculet)	*R. pseudoacacia* *Pinus nigra* 15y	PSti Psamosol tipic (carbonatic)	ARc Calcaric Arenosols
Dolj No. 15	APELE VII UP II, ua. 75C (Apele Vii)	*R. pseudoacacia* degraded	PSti Psamosol tipic	ARh Haplic Arenosols
Dolj No. 16	APELE VII UP II, ua. 42C (Apele Vii)	*R. pseudoacacia* 100% 46y	PSti Psamosol tipic	ARh Haplic Arenosols
Dolj No. 17	SEGARCEA UP III, ua. 72A (Radovan, Desnatui)	*Q. pedunculiflora* 30% 102y *F. excelsior* 60% Others(*Crategus*) 10% 82y	LCmo Lacoviste molic	GLm Mollic Gleysols
Dolj No. 18	SEGARCEA UP III, ua. 84A (Radovan, Desnatui)	*Q. frainetto* 80% 49y *Q. cerris* 20% degraded 6%	BRti Sol brun roscat tipic	LVx Chromic Luvisols
Dolj No. 19	SADOVA UP III, ua. 11A (Zaval, Lunca Jiu)	*Q. robur* 40% 182y *F. excelsior* 60%	Sati Sol aluvial tipic	FLc Calcaric Fluvisols
Dolj No. 20	AMARADIA UP II, ua. 37D (Farcasu)	*Q. cerris* 70% *Q. frainetto* 20% *Q. petraea* 10%	BMti Sol brun eumezobazic tipic	CMe Eutric Cambisols

(Appendix B-2 continue)

Profile No.	Location Ocol Silvic, UP, ua.	Vegetation	Soil Classification	
			SRCS	FAO/UNESCO
Olt No. 1	CARACAL UP III, ua. 52A (Resca)	*Q. robur* 60% 128y *F.e.* 30% 80-100y *Populus alba* 10% 71-82y	BMvs Sol brun eumezobazic vertic	CMv Vertic-(Eutric) Cambisols
Olt No. 2	BALS UP V, ua. 100 (Bistrita)	*Q. frainetto* 70% 54y *Q. cerris* 20% *Q. petrea* 10% degraded 15-25%	SPpz Luvisol albic Pseudogleizat	LVa-j Stagni-Albic Luvisols
Olt No. 3	BALS UP V, ua. 145 (Saru)	*Q.frainetto* 60% *Q.cerris* 20% 59y *F.ornus* 10% *Piris communus* *Cratagus* degraded 35-40%	BMvs-pr Sol brun eumezobazic vertic pseudorenzinic	CMe-v Vertic-Eutric Cambisols
Olt No. 4	VULTURESTI UP I, ua. 98D (Dumitresti)	*Q.frainetto* 80% 119y *F.ornus, Crategus,* Others 20% 10y degraded 10%	SPgl-pz Luvisol albic glosic pseudogleizat	PDc-j Stagnic-Eutric Podzoluvisols
Olt No. 5	SLATINA UP V, ua. 37A (Seaca)	*Q.frainetto* 100% 140y degraded 10-15%	SPti Luvisol albic tipic	LVa Albic Luvisols
Olt No. 6	SLATINA UP IV OPORELU, ua. 123 (Ghiteasca)	*Q.frainetto* 100% 45y	BDvs Sol brun argiloiluvial vertic	LVv Vertic Luvisols
Olt No. 7	SLATINA UP IV OPORELU, ua. 151A (Corbu, Sinesti)	*Q.frainetto* 100% 70y *F. ornus* degraded 15%	SPro Luvisol albic rodic	LVa-x Chromic-Albic Luvisols
Olt No. 8	CARACAL UP I, ua. 35 (Vladila)	*Q. pedunciflora* 60% *Q. pubescens* 40% 70y *Crategus*	BRti Sol brun roscat tipic slab luvic	LVx Chromic Luvisols

SRCS: Sistemul Roman de Clasificare a Solurilor (1979)

FAO/UNESCO: Soil Map of the World, Revised Legend (1988)

Appendix B-3 Romanian Soil Classification Systems and Sub Type Symbols

S.R.C.S.(Romania Soil Classification System)			
ICAS Code (Book)	(Inventry) Code	Major Symbol	Romania Soil Name
Molisoluri			
1	11	SB	Sol balan
2	12	CZ	Cernoziom
3	13	CC	Cernoziom cambic
4	14	CI	Cernoziom argiloiluvial
5	15	CM	Sol cernoziomoid
6	16	CN	Sol cenusiu
7	17	RZ	Rendzina
8	18	PR	Pseudorendzina
Argiluvisoluri			
9	21	BR	Sol brun-roscat
10	22	BD	Sol brun argiloiluvial
11	23	RP	Sol brun-roscatluvic (podzolit)
12	24	BP	Sol brun-luvic (podzolit)
13	25	SP	Luvisol alvic (Sod podzolic argiloiluvial)
14	26	PL	Planosol
Cambisoluri			
15	31	BM	Sol brun eu-mezobazic
16	32	TR	Sol rosu (terra rossa)
17	33	BO	Sol brun acid
Spodosoluri			
18	41	PB	Sol brun fertiluvial (podzolic)
19	42	PD	Podzol
Molisoluri			
20	51	NO	Sol negru acid
21	52	AN	Andosol
22	53	HS	Sol humicosilicatic
Soluri hidromorfe			
23	61	LC	Lacoviste
24	62	GC	Sol gleic
25	63	NF	Sol negru clinohidromorf (Sol negru de finesta)
26	64	PG	Sol pseudogleic
Soluri halomorfe			
27	71	SC	Solonceac
28	72	SN	Solonet
Vertisoluri			
29	81	VS	Vertisol
Soluri necvoluate trunchiate sau desfundate			
30	91	LS	Litosol
31	92	RS	Regosol
32	93	PS	Psamosol
33	94	AA	Protosol aluvial (aluviune)
34	95	SA	Sol aluvial
35	96	ER	Erodisol
36	97	CO	Coluvisol
37	98	DD	Sol desfundat
38	99	PA	Protosol antropic
Soluri organice (Histosoluri)			
39	2	TB	Sol turbos (Organic)

Sub type symbol			
	Sub type Name		Sub type Name
ti	tipic	ar	argiloiluvial
ls	litic	ro	rodic
gz	gleizat	vs	vertic
pz	pseudogleizat	pl	planic
gc	gleic	um	umbric
pg	pseudogleic	vm	vermic
sc	salinizat	lv	luvic
ac	alcalizat	al	albic
ml	mlastinoasa	cr	cromic
tb	turbos (organic)	gl	glosic
rz	rendzinic	cp	criptospodic
pr	pseudo-rendzinic	fe	feriiluvial
mo	molic	an	andic
ca	cambic		

Appendix B-4 Reading of codes and marks of Romanian soil classification in FAO/UNESCO soil classification (1988)

Romania Soil Classification			FAO/UNESCO Soil Classification
Soil Code		Symbol	Soil Unit Symbol
Book	Invent	Major-sub	Level 1 - level 2
0101	1101	SBti	KSk-c,KSh-c(Kastanozems)
0102	1102	SBvm	KSk-c-vermi
0103	1103	SBsc	KSk-c-s
0104	1104	SBac	KSk-c-n
0201	1201	CZti	CHk-c(Chernozems)
0202	1202	CZvm	CHk-c-vermi
0203	1203	CZvs	CHk-c-v
0204	1204	CZrz	
0205	1205	CZpr	PHc(Calcaric Phaeozems)
0206	1206	CZls	CHk-c-lithi
0207	1207	CZgz	CHk-g
0208	1208	CZsc	CHk-c-s
0209	1209	CZac	CHk-c-n
0210	1210	CZvm-gz	CHk-c
0211	1211	CZvs-gz	CHk-c-v
0212	1212	CZvs-sc	CHk-c-v
0213	1213	CZvs-ac	CHk-c-v
0214	1214	CZpr-sc	PHc
0215	1215	CZls-rz	CHk-c
0216	1216	CZsc-ac	CHk-c
0301	1301	CCti	CHk,PHh
0302	1302	CCvm	CHk-vermi
0303	1303	CCvs	CHk-v,PHh-v
0304	1304	CCrz	
0305	1305	CCpr	PHh(Haplic Phaeozems)
0306	1306	CCls	CHh-lithi
0307	1307	CCgz	CHk-g
0308	1308	CCsc	CHk-s
0309	1309	CCac	CHk-n,PHh-n
0310	1310	CCvm-gz	CHk-vermi-g
0311	1311	CCvs-pr	CHk-v
0312	1312	CCvs-gz	CHk-v
0313	1313	CCvs-sc	CHk-v
0314	1314	CCvs-ac	CHk-v
0315	1315	CCsc-ac	CHk-n
0401	1401	CIti	PHl(Luvic Phaeozems)
0402	1402	CIvs	PHl-v
0403	1403	CIrz	
0404	1404	CIpr	
0405	1405	CIgz	PHl-g
0406	1406	CIpz	PHl-j
0407	1407	CIsc	
0408	1408	CIac	PHl-n
0409	1409	CIvs-pr	PHl-v
0410	1410	CIvs-gz	PHl-v
0411	1411	CIvs-pz	PHl-v
0412	1412	CIvs-sc	PHl-v
0413	1413	CIvs-ac	PHl-v
0501	1501	CMti	PHk(Calcic Phaeozems)
0502	1502	CMvs	PHk-v
0503	1503	CMca	PHh(Haplic Phaeozems)
0504	1504	CMar	PHl(Luvic Phaeozems)
0505	1505	CMrz	
0506	1506	CMpr	
0507	1507	CMgz	PHc-g
0508	1508	CMpz	PHj(Stagnic Phaeozems)
0509	1509	CMvs-pr	PHk-v
0510	1510	CMvs-gz	PHk-v
0511	1511	CMca-vs	PHh
0512	1512	CMca-rz	PHh-v
0513	1513	CMca-pr	PHh
0514	1514	CMca-gz	PHh-g
0515	1515	CMar-vs	PHl-v
0516	1516	CMar-pr	PHl
0517	1517	CMar-gz	PHl-g
0518	1518	CMar-pz	PHl-j
0601	1601	CNti	GRh(Haplic Greyzems)
0602	1602	CNca	CHh(Haplic Chernozems)
0603	1613	CNpr	
0604	1604	CNgz	CHh-g
0605	1605	CNpz	CHh-j
0606	1606	CNca-pr	CHh
0607	1607	CNca-gz	CHh-g
0608	1608	CNpr-pz	CHh-j
0701	1701	RZti	LPk(Rendzic Leptosols)
0702	1702	RZca	LPk
0703	1703	RZls	LPk
0704	1704	RZca-ls	LPk
0801	1801	PRti	PHc(Calcaric Phaeozems)
0802	1802	PRvs	PHc-v
0803	1803	PRca	PHh
0804	1804	PRar	PHl
0805	1805	PRpz	PHc-j
0806	1806	PRca-vs	PHh-v
0807	1807	PRca-pz	PHh-j
0808	1808	PRar-vs	PHl-v
0809	1809	PRar-pz	PHl-j
0901	2101	BRti	LVx(Chromic Luvisols)
0902	2102	BRmo	PHl-x
0903	2103	BRvs	LVx-v
0904	2104	BRgz	LVx-g
0905	2105	BRpz	LVx-j
0906	2106	BRmo-vs	PHl-x-v
0907	2107	BRmo-gz	PHl-x-g
0908	2108	BRvs-pz	LVx-v-j
1001	2201	BDti	LVh(Haplic Luvisols)
1002	2202	BDmo	PHl
1003	2203	BDvs	LVv(Vertic Luvisols)
1004	2204	BDrz	
1005	2205	BDpr	
1006	2206	BDro	LVx
1007	2207	BDls	LVh-lithi
1008	2208	BDgz	LVh-g
1009	2209	BDpz	LVh-j
1010	2210	BDac	LVh-n
1011	2211	BDmo-vs	PHl-v
1012	2212	BDmo-rz	PHl
1013	2213	BDmo-pr	PHl
1014	2214	BDmo-gz	PHl-g
1015	2215	BDmo-pz	PHl-j
1016	2216	BDmo-ac	PHl-n
1017	2217	BDvs-pr	LVv
1018	2218	BDvs-gz	LVv-g
1019	2219	BDvs-pz	LVv-j
1020	2220	BDro-rz	LVx
1021	2221	BDpr-pz	LV
1022	2222	BDgz-pz	LVj-g
1101	2301	RPti	LVx
1102	2302	RPvs	LVx-v
1103	2303	RPpl	LVx
1104	2304	RPgz	LVx-g
1105	2305	RPpz	LVx-j
1106	2306	RPvs-pl	LVx-v
1107	2307	RPvs-pz	LVx-v
1108	2308	RPpl-pz	LVx-j
1201	2401	BPti	LVh
1202	2402	BPvs	LVv
1203	2403	BPpl	LVh

(Appendix B-4 continued)

Romania Soil Classification			FAO/UNESCO Soil Classification
Soil Code		Symbol	Soil Unit Symbol
Book	Invent	Major-sub	Level 1 - level 2
1204	2404	BPro	LVx
1205	2405	BPls	LVh-lithi
1206	2406	BPgz	LVh-g
1207	2407	BPpz	LVh-j
1208	2408	BPvs-pl	LVv
1209	2409	BPvs-pz	LVv-j
1210	2410	BPpl-pz	LVh-j
1211	2411	BPro-ls	LVx-lithi
1212	2412	BPro-pz	LVx-j
1213	2413	BPgz-pz	LVj-g
1301	2501	SPti	LVa(Albic Luvisols)
1302	2502	SPvs	LVa-v
1303	2503	SPpl	LVa
1304	2504	SPgl	PDe(Eutric Podzoluvisols),PDd
1305	2505	SPro	LVa-x
1306	2506	SPls	LVa-lithi
1307	2507	SPgz	LVa-g
1308	2508	SPpz	LVa-j
1309	2509	SPpg	LVa-j
1310	2510	SPac	LVa-n
1311	2511	SPvs-pl	LVa-v
1312	2512	SPvs-pz	LVa-v
1313	2513	SPvs-pg	LVa-v
1314	2514	SPvs-ac	LVa-v
1315	2515	SPpl-pz	LVa-j
1316	2516	SPpl-ac	LVa-n
1317	2517	SPpl-pg	LVa-j
1318	2518	SPgl-pz	PDe-j,PDd-j
1319	2519	SPgl-pg	PDj(Stagnic Podzoluvisols)
1320	2520	SPgl-ac	PDe-n
1321	2521	SPro-ls	LVa-x
1322	2522	SPro-pz	LVa-x
1323	2523	SPgz-pz	LVa-g-j
1324	2524	SPgz-pg	LVa-g-j
1325	2525	SPpz-ac	LVa-j-n
1401	2601	PLti	PLe(Eutric Planosols)
1402	2602	PLmo	PLm(Mollic Planosols)
1403	2603	PLvs	PLe-v
1404	2604	PLal	PLd(Dystric Planosols)
1405	2605	PLgz	PLe-g
1406	2606	PLpg	PLe
1407	2607	PLmo-vs	PLm-v
1408	2608	PLmo-gz	PLm-g
1409	2609	PLvs-pg	PLe-v
1410	2610	PLal-vs	PLd-v
1411	2611	PLal-gz	PLd-g
1412	2612	PLal-pg	PLe,PLd
1501	3101	BMti	CMe(Eutric Cambisols)
1502	3102	BMmo	PHh(Haplic Phaeozems)
1503	3103	BMvs	CMv(Vertic Cambisols)
1504	3104	BMrz	
1505	3105	BMpr	CMe
1506	3106	BMan	CMe-andi
1507	3107	BMls	CMe-lithi
1508	3108	BMgz	CMg,CMe-g
1509	3109	BMpz	CMe-j
1510	3110	BMsc	CMe-s
1511	3111	BMac	CMe-n
1512	3112	BMmo-vs	PHh-v
1513	3113	BMmo-rz	CMe-rendzi
1514	3114	BMmo-pr	PHh
1515	3115	BMmo-an	PHh-andi
1516	3116	BMmogz	PHh-g
1517	3117	BMmo-pz	PHh-j

Romania Soil Classification			FAO/UNESCO Soil Classification
Soil Code		Symbol	Soil Unit Symbol
Book	Invent	Major-sub	Level 1 - level 2
1518	3118	BMmo-sc	PHh-s
1519	3119	BMmo-ac	PHh-n
1520	3120	BMvs-pr	CMv
1521	3121	BMpr-pz	CMe-j
1522	3122	BMan-ls	CMe-andi-lithi
1523	3123	BMsc-ac	CMe-s-n
1524	3124	BMgz-pz	CMe-j-g
1601	3201	TRti	CMx(Chromic Cambisols)
1602	3202	TRls	CMx-lithi
1701	3301	BOti	CMd(Dystric Cambisols)
1702	3302	BOum	CMu(Humic Cambisols)
1703	3303	BOan	CMd-andi
1704	3304	BOcp	CMd-spodo
1705	3305	BOls	CMd-lithi
1706	3306	BOgz	CMd-g
1707	3307	BOum-an	CMu-andi
1708	3308	BOum-ls	CMu-lithi
1709	3309	BOan-ls	CMd-andi-lithi
1710	3310	BOcr-um	CMu-spodo
1711	3311	BOcrls	CMd-spodo-lithi
1801	4101	PBti	PZb(Cambic Podzols)
1802	4102	PBls	PZb-lithi
1803	4103	PBtb	PZb-histi
1901	4201	PDti	PZh(Haplic Podzols)
1902	4202	PDfe	PZf(Ferric Podzols)
1903	4203	PDls	PZh-lithi
1904	4204	PDtb	PZh-histi
1905	4205	PDfe-ls	PZf-lithi
2001	5101	NOti	CMu
2002	5102	NOan	CMu-andi
2003	5103	NOls	CMu-lithi
2004	5104	NOgz	CMu-g
2005	5105	NOan-ls	CMu-andi-lithi
2101	5201	ANti	ANu(Umbric Andosols)
2102	5202	ANca	ANh(Haplic Andosols),ANu
2103	5203	ANls	ANu-lithi
2104	5204	ANca-ls	ANh-lithi
2201	5301	HSti	LPu(Umbric Leptosols),LPd
2202	5302	HScp	CMu-spodo
2203	5303	HSls	LPu-lithi
2204	5304	HScp-ls	CMu-spodo-lithi
2301	6101	LCti	PHg,CHh-g
2302	6102	LCca	PHg(Gleyic Phaeozems)
2303	6103	LCml	GLm(Mollic Gleysols)
2304	6104	LCsc	CHh-g-s
2305	6105	LCac	CHh-g-n
2306	6106	LCca-sc	PHg-s
2307	6107	LCca-ac	PHg-n
2308	6108	LCml-sc	GLm-s
2309	6109	LCsc-ac	CHh-g-s-n
2401	6201	GCti	CMg(Gleyic Cambisols)
2402	6202	GCmo	PHg
2403	6203	GCum	CMu-g
2404	6204	GCca	CMg
2405	6205	GCml	GLe(Eutric Gleysols)
2406	6206	GCtb	GLm(Mollic Gleysols)
2407	6207	GCsc	CMg-s
2408	6208	GCac	CMg-n
2409	6209	GCmo-ca	PHg
2410	6210	GCmo-ml	GLm
2411	6211	GCmo-sc	GLm-s
2412	6212	GCmo-ac	GLm-n
2413	6213	GCml-sc	GLe-s
2414	6214	GCsc-ac	CMg-s-n

Romania Soil Classification			FAO/UNESCO Soil Classification
Soil Code		Symbol	Soil Unit Symbol
Book	Invent	Major-sub	Level 1 - level 2
2501	6301	NFti	PHg-j
2502	6302	NFar	PHl-j
2503	6303	NFvs	PHj-v
2504	6304	NFar-vs	PHl-j-v
2601	6401	PGti	CMe-j
2602	6402	PGmo	PHj(Stagnic Phaeozems)
2603	6403	PGvs	CMe-v-j
2604	6404	PGlv	LVj(Stagnic Luvisols)
2605	6405	PGal	LVj-a
2606	6406	PGpl	LVa-j
2607	6407	PGgz	CMg-j
2608	6408	PGml	CMe-j-hyper
2609	6409	PGtb	CMe-j-histi
2610	6410	PGvs-lv	LVj-v
2611	6411	PGvs-al	LVa-j-v
2612	6412	PGlv-pl	LVj
2613	6413	PGlv-gz	LVg-j
2614	6414	PGal-pl	LVa(Albic Luvisols)
2615	6415	PGal-gz	LVa-g-j
2616	6416	PGpl-gz	LVa(Albic Luvisols)
2617	6417	PGpl-ml	LVa
2618	6418	PGpl-tb	LVa
2701	7101	SCti	SCh(Haplic Solonchaks)
2702	7102	SCmo	SCm(Mollic Solonchaks)
2703	7103	SCvs	SCh-v
2704	7104	SCgc	SCg(Gleyic Solonchaks)
2705	7105	SCac	SCn(Sodic Solonchaks)
2706	7106	SCmo-vs	SCm-v
2707	7107	SCmo-gc	SCm-g
2708	7108	SCvs-gc	SCh-v-g
2709	7109	SCgc-ac	SCg-n
2801	7201	SNti	SNg(Gleyic Solonetz),SNh
2802	7202	SNlv	SNh(Haplic Solonetz)
2803	7203	SNal	SNj(Stagnic Solonetz),SNh
2804	7204	SNgl	SNh,SNj
2805	7205	SNca	
2806	7206	SNmo	SNh
2807	7207	SNsc	SNh-sali
2808	7208	SNgc	SNg(Gleyic Solonetz)
2809	7209	SNlv-sc	SNg
2810	7210	SNlv-gc	SNg
2811	7211	SNal-sc	SNh-sali
2812	7212	SNal-gc	SNh,SNj
2813	7213	SNgl-sc	SNj(Stagnic Solonetz)
2814	7214	SNgl-gc	SNj
2815	7215	SNca-sc	SNh
2816	7216	SNca-gc	SNh
2817	7217	SNmo-sc	SNh
2818	7218	SNmo-gc	SNh
2819	7219	SNsc-gc	SNh
2901	8101	VSti	VRk(Calcic Vertisols),VRe
2902	8102	VScr	VRe(Eutric Vertisols)
2903	8103	VSgz	VRe-g
2904	8104	VSpz	VRe-j
2905	8105	VSsc	VRe-s
2906	8106	VSac	VRe-n
2907	8107	VScr-gz	VRe-g
2908	8108	VScr-pz	VRe-j
2909	8109	VScr-sc	VRe-s
2910	8110	VScr-ac	VRe-n
3001	9101	LSti	LPe,LPq(Lithic Leptosols),LPd
3002	9102	LSrz	LPq(Lithic Leptosls)-k
3003	9103	LStb	LPu-histi
3004	9104	LSrz-tb	LPq-k-histi

Romania Soil Classification			FAO/UNESCO Soil Classification
Soil Code		Symbol	Soil Unit Symbol
Book	Invent	Major-sub	Level 1 - level 2
3101	9201	RSti	RGe(Eutric Regosols),RGc
3102	9202	RSmo	RGc-m,RGe-m
3103	9203	RSum	RGu(Umbric Regosols)
3104	9204	RSrz	LPk(Rendzic Leptosols),RGc-k
3105	9205	RSpr	RGc(Calcaric Regosols)
3106	9206	RSls	LPe(Eutric Leptosols)
3107	9207	RSsc	RGc
3108	9208	RSmo-rz	LPk
3109	9209	RSmo-pr	RGc-m
3110	9210	RSmo-ls	LPm(Mollic Leptosols)
3111	9211	RSmo-sc	RGc
3112	9212	RSum-ls	RGu
3113	9213	RSrz-ls	LPq-k
3201	9301	PSti	ARh(Haplic Arenosols),ARc
3202	9302	PSmo	ARh-m,ARc-m
3203	9303	PSgz	ARh-g,ARc-g
3204	9304	PSgc	ARg(Gleyic Arenosols)
3205	9305	PSsc	ARg-s
3206	9306	PSmo-gz	ARh-m-g
3207	9307	PSmo-sc	ARh-m-s
3208	9308	PSgc-sc	ARg-s
3301	9401	AAti	FLe(Eutric Fluvisols),FLc
3302	9402	AAls	FLe-rudi,FLc-rudi
3303	9403	AAgz	FLe-g,FLc-g
3304	9404	AAsc	FLc-s
3401	9501	SAti	FLe,FLc,FLd
3402	9502	SAmo	FLm(Mollic Fluvisols)
3403	9503	SAum	FLu
3404	9504	SAvs	FLc-v,FLd-v
3405	9505	SAls	FLe-rudi,FLc-rudi,FLd-rudi
3406	9506	SAgz	FLe-g
3407	9507	SAsc	FLc-s,FLc-s
3408	9508	SAac	FLe-n,FLc-n
3409	9509	SAmo-vs	FLm-v
3410	9510	SAmo-ls	FLm
3411	9511	SAmo-gz	FLm-g
3412	9512	SAmo-sc	FLm-s
3413	9513	SAmo-ac	FLm-n
3414	9514	SAum-ls	FLu(Umbric Fluvisols)
3415	9515	SAum-gz	FLu
3416	9516	SAvs-gz	FLc-v-g
3417	9517	SAvs-sc	FLc-v-s
3418	9518	SAvs-ac	FLc-v-n
3419	9519	SAsc-ac	FLc-s-n
3501	9601	ERti	RGe,RGc
3502	9602	ERrz	RGc-rendzi
3503	9603	ERpr	RGc(Calcaric Regosols)
3504	9604	ERls	RGc
3505	9605	ERvs	RGe-v
3506	9606	ERgz	RGe-g,RGc-g
3507	9607	ERpz	RGe-j
3508	9608	ERsc	RGe-s,RGc-s
3509	9609	ERac	RGe-n,RGc-n
3510	9610	ERca	RGc
3511	9611	ERar	RGe-l
3512	9612	ERfe	RG
3513	9613	ERro	
3514	9614	ERan	RGe-andi
3515	9615	ERrz-ls	RGc
3516	9616	ERpr-pz	RGc-j
3517	9617	ERpz-vs	RGe-j
3518	9618	ERca-rz	RGe
3519	9619	ERca-pr	RGe
3520	9620	ERca-gz	RGe

(Appendix B-4 continued)

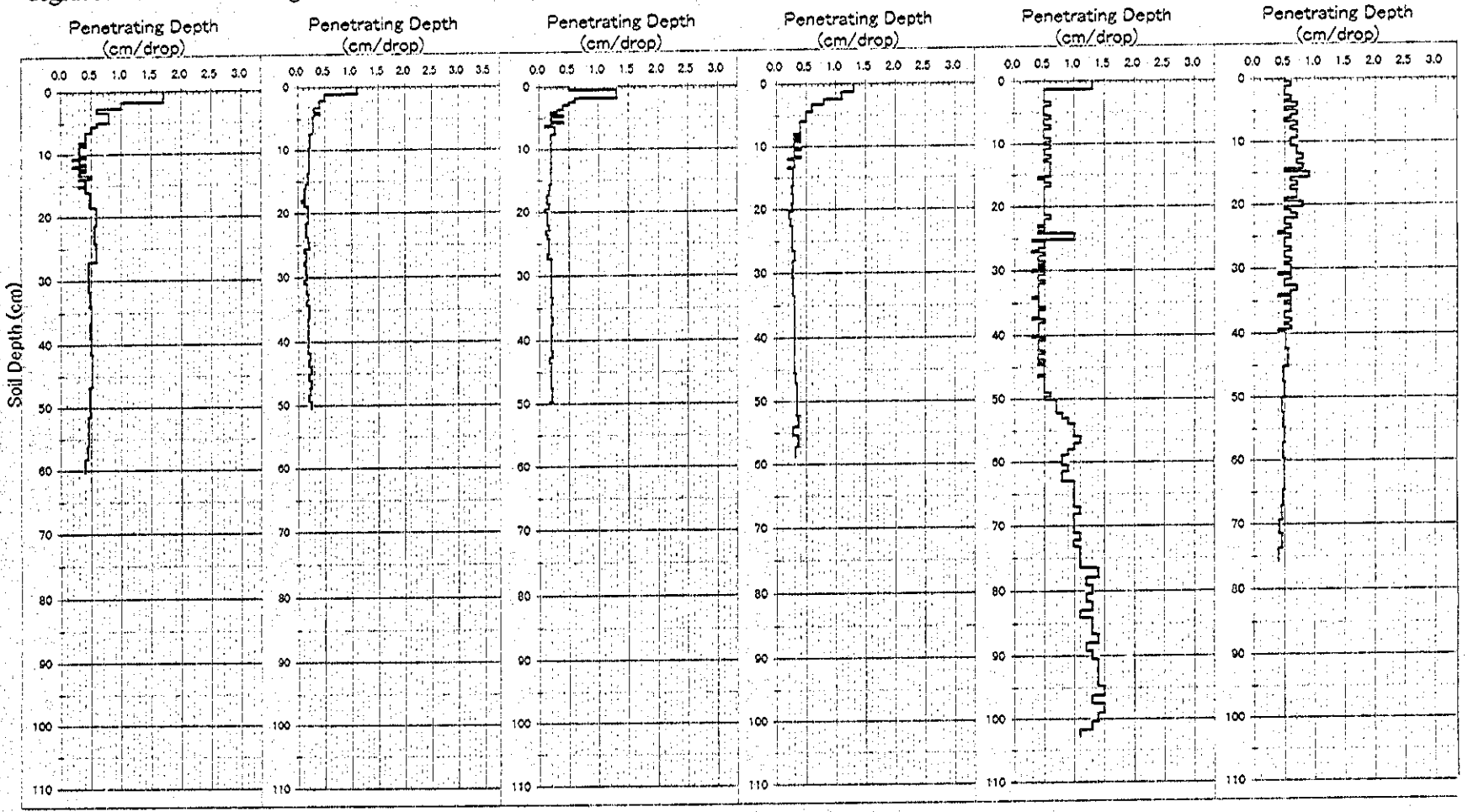
Romania Soil Classification			FAO/UNESCO Soil Classification
Soil Code		Symbol	Soil Unit Symbol
Book	Invent	Major-sub	Level 1 - level 2
3521	9621	ERca-pz	RGe
3522	9622	ERca-sc	RGe
3523	9623	ERca-ac	RGe
3524	9624	ERar-pr	RGe
3525	9625	ERar-gz	RGe-l-g
3526	9626	ERar-pz	RGe-l-j
3527	9627	ERar-ac	RGe-l-n
3601	9701	COti	FLc,FLc
3602	9702	COmo	FLm
3603	9703	COgz	FLc-g,FLc-d
3604	9704	COpz	FLe-j
3605	9705	COsc	FLc-s
3606	9706	COmo-gz	FLm-g
3607	9707	COmo-sc	FLm-s
3701	9801	DDti	ATa(Aric Anthrosols)
3702	9802	DDmo	ATa
3703	9803	DDca	ATa
3704	9804	DDar	ATa
3801	9901	PAti	AT(Anthrosols)
3901	0201	TBti	HS(Histosols)
3902	0202	TBsc	HS

Romania Soil - FAO/UNESCO Soil Classification Revised Legend (1988)

AN	Andosols	haplic	umbric					
		ANh	ANu					
AT	Anthrosols	aric						
		ATa						
AR	Arenosols	calcaric	cambic	dystric	gleyic	haplic		
		ARc	ARb	ARd	ARg	ARh		
CM	Cambisols	dystric	eutric	gleyic	humic	vertic		
		CMd	CMe	CMg	CMu	CMv		
CH	Chernozems	calcic	gleyic	haplic	luvic			
		CHk	CHg	CHh	CHl			
FL	Fluvisols	calcaric	dystric	eutric	mollic	salic	umbric	
		FLc	FLd	FLe	FLm	FLs	FLu	
GL	Gleysols	calcic	dystric	eutric	mollic	umbric		
		GLk	GLd	GLe	GLm	GLu		
GR	Greyzems	haplic						
		GRh						
HS	Histosols	fibric						
		HSf						
KS	Kastanozems	calcic	haplic					
		KSk	KSh					
LP	Leptosols	dystric	eutric	lithic	mollic	rendzic		
		LPd	LPe	LPq	LPm	LPk		
LV	Luvisols	albic	calcic	chromic	gleyic	haplic	stagnic	vertic
		LVa	LVk	LVx	LVg	LVh	LVj	LVv
PH	Phaeozems	calcaric	gleyic	haplic	luvic	stagnic		
		PHc	PHg	PHh	PHl	PHj		
PL	Planosols	dystric	eutric	mollic				
		PLd	PLe	PLm				
PD	Podzoluvisols	dystric	eutric	stagnic				
		PDd	PDe	PDj				
PZ	Podzols	cambic	ferric	haplic				
		PZb	PZf	PZh				
RG	Regosols	calcaric	dystric	eutric				
		RGc	RGd	RGe				
SC	Solonchaks	calcic	gleyic	haplic	mollic	sodic		
		SCk	SCg	SCh	SCm	SCn		
SN	Solonetz	calcic	gleyic	haplic	mollic	stagnic		
		SNk	SNg	SNh	SNm	SNj		
VR	Vertisols	calcic	dystric	eutric				
		VRk	VRd	VRe				

Appendix B-5 Measurement data of soil hardness (soil penetration resistance)

(1) Non soil-improved area in Olt and Dolj Counties

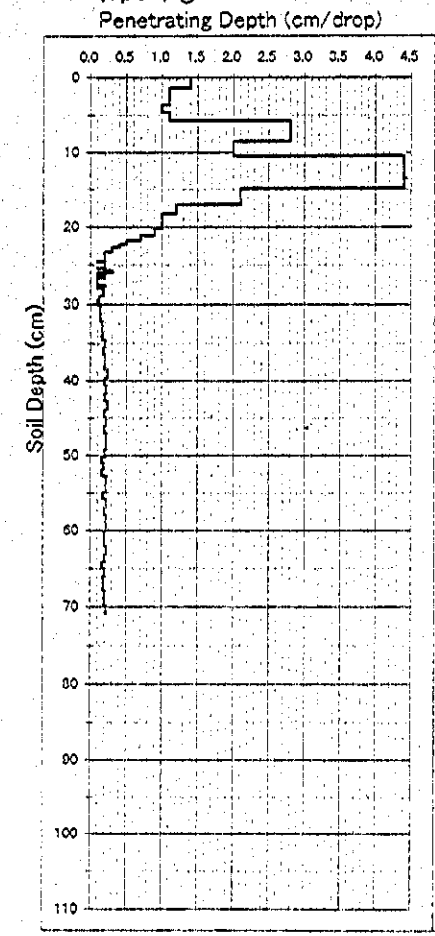


Appendix B-5 Measurement data of soil hardness (soil penetration resistance)

(2) Soil-improved area at Ghimpati forests

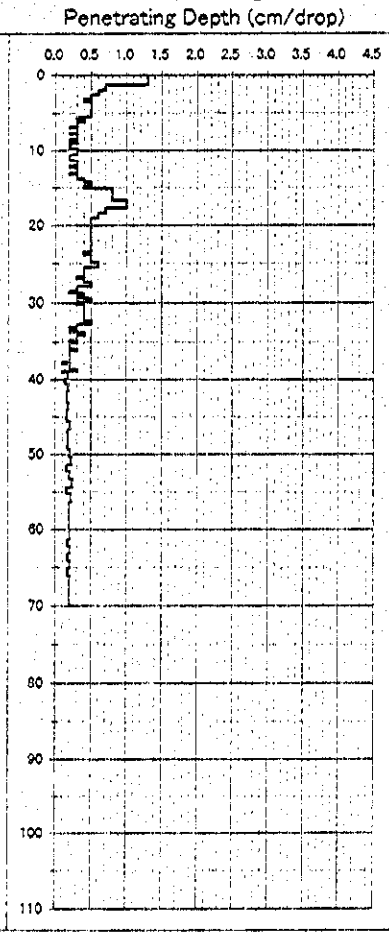
GHIMPATI UP I
ua 62 (Letca)
Soil Unit LVx
Soil improvement (1992)
Planted *Q.cerris* (1993)

P.1 (open) grass



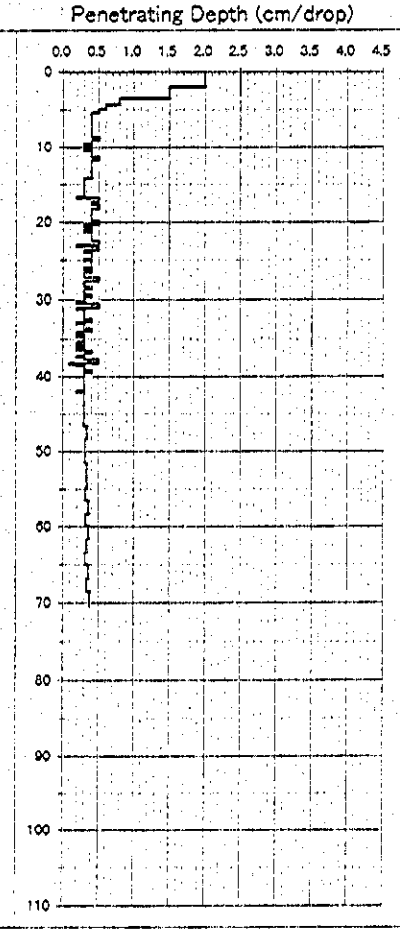
GHIMPATI UP I
ua 62 (Letca)
Soil Unit LVx
Soil improvement (1992)
Planted *Q.cerris* (1993)

P.2 Between planting lines



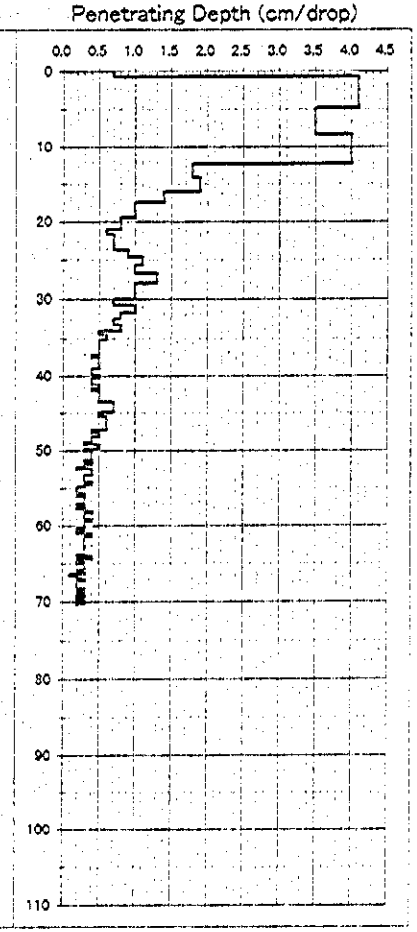
GHIMPATI UP I
ua 62 (Letca)
Soil Unit LVx
Soil improvement (1992)
Planted *Q.cerris* (1993)

P.3 Between trees



GHIMPATI UP I
ua 62 (Letca)
Soil Unit LVx
Soil improvement (1992)
Planted *Q.c* , *Prunus* , *Tilia* , *Crategus* , *Acer* (1993)

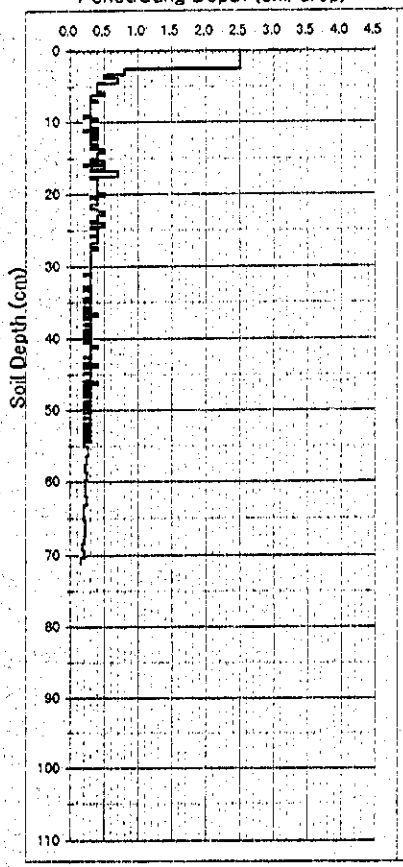
P.4 Under the crown of *Tilia*



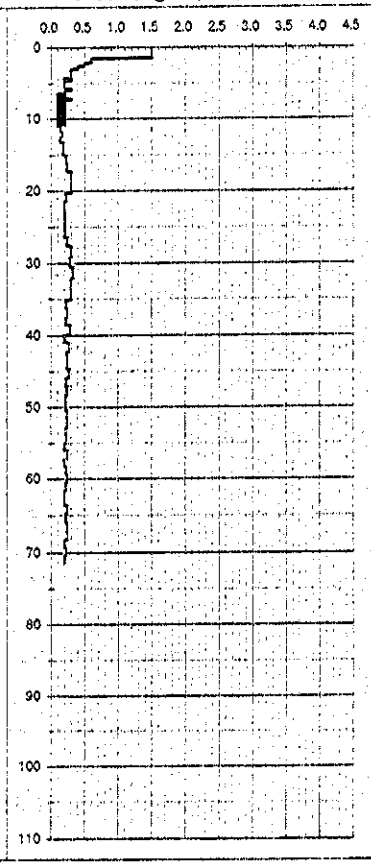
Appendix B-5 Measurement data of soil hardness (soil penetration resistance)

(3) Non soil-improved area at Ghimpati forests

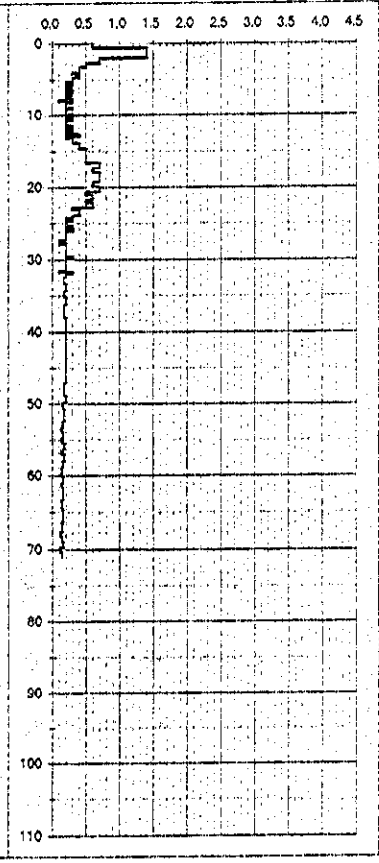
GHIMPATI UP I
ua 63 (Letca)
Soil Unit LVx
Q.cerris (50%)
Q.frainetto (50%)
54 y
Hard, Dry



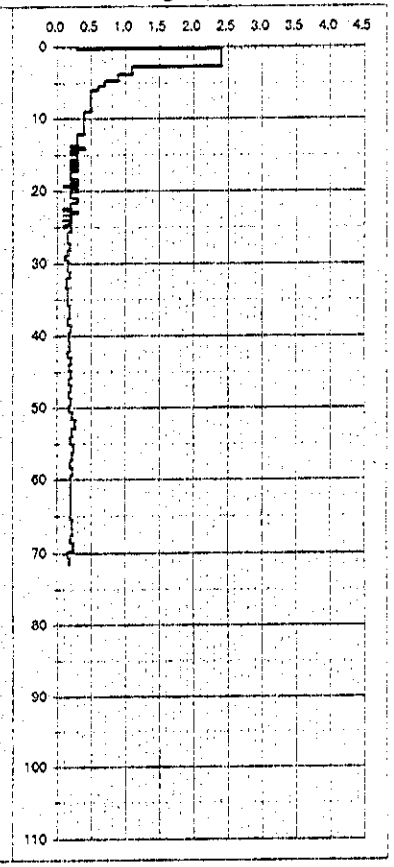
GHIMPATI UP I
ua 63 (Letca)
Soil Unit LVx
Q.cerris (50%)
Q.frainetto (50%)
54 y
Hard, Dry



GHIMPATI UP I
ua 82 (Letca)
Soil Unit LVx
Q.cerris (90%)
Q.frainetto (10%)
60 y
Hard, Dry



GHIMPATI UP I
ua 82 (Letca)
Soil Unit LVx
Q.cerris (90%)
Q.frainetto (10%)
60 y
Hard, Dry



Appendix B-5 Measurement data of soil hardness (soil penetration resistance)

(4) Measurement of Soil Hardness

Soil Hardness

Soil Hardness refers to resistance of soil toward external force applied, in other words, resistance per unit sectional area (press-fitting resistance: kgf cm^{-2}) required in squeezing a certain bulk of object into soil. It is considered to be physically composed of cohesion and frictional force among soil particles in principle. Soil hardness compositely reflects mechanical composition, porosity, dry density, organic matter and moisture status.

Yamanaka-Type Soil Hardness Tester

In Japan, Yamanaka-type soil hardness tester (developed by Yamanaka and Matsuo in 1962) is generally used to measure hardness of soil. Its basic structure is shown in Figure I. When a cone part of a hardness tester is squeezed into soil, the cone part receives resistance according to soil hardness, which shrinks coiled spring supporting the bottom of the cone, and the cone moves inward proportionally. Yamanaka-type tester is attached to coiled spring whose compressibility is usually 8.0 kgf per shrink of 40 mm. Since scales are marked on a side face of the tester, hardness can be gauged by a point where a floating indicator stops. Scales mark indicator hardness (mm) or press-fitting resistance (kgf cm^{-2}).

Penetrating Type Soil Hardness Tester (Hasegawa-Type Soil Penetration Tester)

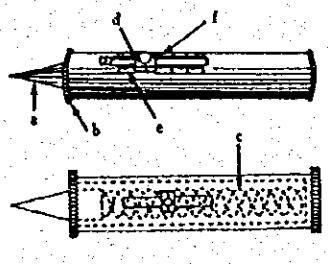
Penetrating resistance is the strength required penetrating a cone or something into soil. If a cone penetrates, the resistance of soil to the penetration is basically determined by cohesion and frictional force among soil particles, which is the same as the case using Yamanaka-type soil hardness tester. However, involvement of soil elasticity, plasticity, viscosity, friction and capillary force varies with the shape of the cone (vertical angle, bottom area, etc.) and the speed of penetration.

While Yamanaka-type soil hardness tester penetrates a part of a cone according to soil hardness, penetrating type soil hardness tester penetrates a cone into soil in succession. The basic structure of Hasegawa-type soil penetration tester is shown in Figure II. Penetrating type tester can be operated by one person without test boring, and it can be used to verify whether roots of certain crops can extend in tested soil or whether the soil is cultivatable.

How to Read Soil Hardness

Criteria of Soil Hardness	Used in Soil Profile Survey		Used without Soil Profile
	Yamanaka-Type Soil Hardness Tester		Soil Penetration Tester
	Indicater Hardness(mm)	Press-Fitting Resistance	Penetration Deprh (cm/drop)
Soft	15 mm ≥		1.4 cm ≤
	15 mm	≒3.0 kg/cm² ≒300 kPa	1.4 cm
Middle			
	23 mm	≒10.0 kg/cm² ≒1,000 kPa	0.4 cm
Hard			
	27 mm	≒20.0 kg/cm² ≒2,000 kPa	0.2 cm
Very Hard			
	30 mm	≒38.0 kg/cm² ≒3,800 kPa	0.1 cm
	32 mm	≒63.0 kg/cm² ≒6,300 kPa	

Provided that it is a case of dry soil on plains in the southwest Romania.



a: Cone part
b: Guard
c: Coiled spring
d: Floating indicator
e: Scales of indicator hardness
f: Scales of press-fitting resistance

Figure I. Structure of Yamanaka-Type Soil Hardness Tester

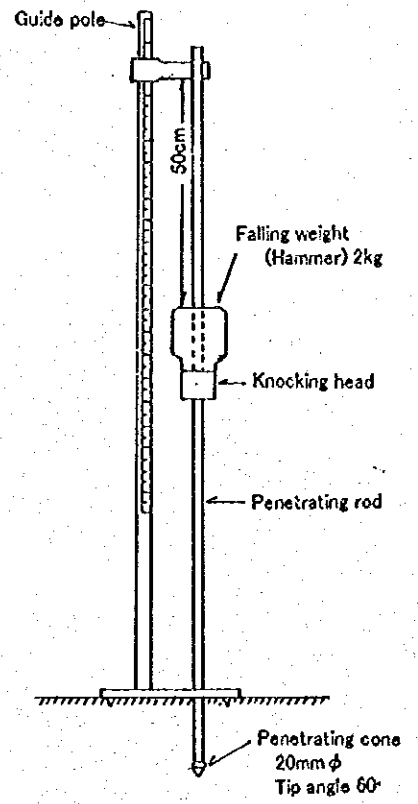


Figure II. Structure of Hasegawa-Type Penetration Tester

Appendix C Social Economy

Appendix C: Social Economy

Appendix C-1 Statistics of Romanian Economy

1. Romania Country

Table1-1 Population at 1st July

	1970	1980	1985	1990	1995	1996
Total	20,252,541	22,201,387	22,724,836	23,206,720	22,680,951	22,607,620
Urban (%)	36.9	45.8	50.0	54.3	54.9	54.9
Rural (%)	63.1	54.2	50.0	45.7	45.1	45.1

Source: Romanian Statistical Yearbook, 1997

Table1-2 Total land area by use (end of year)

thou hectares	1991	1992	1993	1994	1995	1996
Total area of the land fund	**23,839.1**	**23,839.1**	**23,839.1**	**23,839.1**	**23,839.1**	**23,839.1**
Agricultural area	**14,798.3**	**14,790.1**	**14,793.1**	**14,797.5**	**14,797.2**	**14,788.7**
Arable	9,423.5	9,356.9	9,341.5	9,338.0	9,337.1	9,338.9
Pastures	3,309.8	3,349.2	3,362.6	3,378.4	3,392.4	3,391.7
Hayfields	1,467.9	1,480.6	1,489.3	1,493.7	1,497.7	1,498.5
Vineyards and nurseries	285.8	298.6	303.9	298.4	292.4	289.0
Orchards and nurseries	311.3	304.8	295.8	289.0	277.6	270.6
Forests and other forest vegetation lands	**6,680.1**	**6,681.8**	**6,681.1**	**6,680.2**	**6,680.1**	**6,690.3**
Forests	6,253.4	6,253.5	6,249.2	6,245.8	6,244.7	6,240.2
Construction	**624.2**	**630.5**	**627.9**	**629.6**	**627.2**	**626.3**
Roads and railways	**390.9**	**393.4**	**394.0**	**392.5**	**396.2**	**397.0**
Waters and ponds	**893.4**	**892.8**	**892.6**	**888.3**	**889.8**	**886.9**
Other areas	**452.2**	**450.5**	**450.4**	**451.0**	**448.6**	**449.9**
Total area provided with irrigation facilities	**3,197.2**	**3,202.3**	**3,202.8**	**3,205.2**	**3,211.1**	**3,190.6**
Agricultural area	3,095.3	3,099.9	3,101.7	3,104.3	3,110.1	3,095.6
Arable area	2,920.3	2,924.4	2,925.5	2,929.1	2,934.6	2,921.4

Source: Romanian Statistical Yearbook, 1997

Table1-3 Agricultural production

thou tonnes	1991	1992	1993	1994	1995	1996
Cereal grains	**19,306.6**	**12,288.5**	**15,493.1**	**18,183.8**	**19,882.8**	**14,199.7**
Wheat and rye	5,558.9	3,227.6	5,354.5	6,186.5	7,709.3	3,164.1
Barley and two-row barley	2,950.7	1,678.0	1,552.8	2,133.6	1,816.3	1,107.5
Oats	258.2	507.7	553.6	496.8	404.4	290.5
Maize	10,497.3	6,828.3	7,987.5	9,343.2	9,923.1	9,607.9
Sorghum	6.0	4.5	5.5	7.1	4.4	4.3
Rice	31.4	38.9	36.4	15.2	24.1	23.1
Leguminous crops for grains	**79.5**	**74.7**	**85.2**	**76.1**	**97.0**	**77.0**
Peas	32.3	33.2	36.4	38.1	54.3	33.7
Beans	46.0	41.2	48.4	37.4	41.8	42.1
Fibre crops	**73.7**	**64.2**	**14.6**	**9.3**	**13.1**	**17.1**
Flax fibre	15.4	25.6	7.2	4.8	7.2	4.1
Hemp fibre	58.3	38.6	7.4	4.5	5.9	13.0
Oilseed crops	**823.4**	**920.3**	**820.8**	**874.1**	**1,055.4**	**1,218.7**
Sunflower	612.0	774.0	695.8	763.7	932.9	1,095.6
Rape	8.8	1.4	1.4	0.3	0.4	1.9
Soyabeans	178.6	126.2	95.4	100.1	107.9	113.1
Flax for oil	22.8	17.9	28.0	6.5	4.7	4.5
Castor plant	0.6	0.6	0.1	*	*	0.1
Crops for other industrial purposes						
Sugar beet	4,702.7	2,896.7	1,776.3	2,763.8	2,654.6	2,848.2
Tobacco	13.9	7.6	10.5	13.0	13.4	12.1
Chicory	-	-	-	-	-	-
Medicinal and aromatic plants	**20.9**	**21.5**	**12.1**	**6.3**	**12.1**	**6.6**
Potatoes	**1,872.8**	**2,601.6**	**3,708.9**	**2,946.7**	**3,019.9**	**3,591.4**
Autumn potatoes	1,634.1	2,332.2	3,354.1	2,620.1	2,681.3	3,246.3

Source: Romanian Statistical Yearbook, 1997

Table1-4 Structure of industrial production by activities

%	1991	1992	1993	1994	1995	1996
Total	100	100	100	100	100	100
Mining and quarrying	8.9	7.5	6.8	7.1	6.9	6.8
Coal mining and preparation	1.1	2.2	2.1	2.4	2.2	2.2
Petroleum and natural gas extraction	6.7	4.4	4.0	3.7	3.6	3.6
Metalliferous ores quarrying and preparation	0.4	0.4	0.3	0.5	0.5	0.4
Other extractive activities	0.5	0.4	0.4	0.4	0.5	0.5
Manufacturing	83.5	81.6	84.6	79.6	80.5	81.9
Food and beverages	14.8	14.7	19.4	15.9	16.3	17.1
Tobacco industry	0.5	0.4	0.6	0.5	0.5	0.7
Textiles and textile products	6.7	4.9	4.3	3.5	3.7	3.3
Textile, fur and leather wearing apparel	2.7	2.1	2.6	2.2	2.1	2.4
Leather goods and footwear	1.9	1.7	1.6	1.2	1.5	1.4
Wood processing (excluding furniture)	1.8	2.0	1.8	1.8	1.9	1.9
Pulp, paper and cardboard	1.5	1.4	1.0	0.9	1.2	1.2
Publishing houses, polygraphy and records reproduction on supports	0.3	0.3	1.5	1.1	1.1	1.3
Crude oil processing, coal coking and nuclear fuel treatment	6.5	6.7	8.6	7.7	7.7	6.4
Chemistry and synthetic and man made fibres	7.8	8.9	7.4	7.5	8.7	7.8
Rubber and plastics processing	2.6	2.2	2.3	1.6	2.1	2.1
Other nonmetallic mineral products	3.6	3.9	2.9	3.7	3.8	3.9
Metallurgy	9.6	10.6	8.8	9.5	10.4	10.4
Metallic construction and metal products	3.3	3.0	2.5	4.4	2.8	3.0
Machinery and equipment	7.8	7.5	6.2	5.4	5.8	5.6
Computers and office means	0.1	0.1	0.3	0.1	0.2	0.4
Electric machinery and appliances	2.4	2.2	1.7	1.8	2.0	2.3
Radio, TV and communications equipment and apparatus	0.7	0.4	4.1	3.2	0.9	1.2
Medical, precision, optical, watchmaking instruments and apparatus	0.9	0.6	0.3	0.3	0.4	0.5
Means of road transport	3.5	3.1	2.7	2.9	3.0	4.2
Other means of transport	2.1	2.6	1.5	1.3	1.5	1.7
Furniture and other nonclassified activities	2.3	2.2	2.2	2.8	2.6	2.7
Waste recovering	0.1	0.1	0.3	0.3	0.3	0.4
Electric and thermal energy,gas and water	7.6	10.9	8.6	13.3	12.6	11.3
Electric and thermal energy, gas and hot water production, transport and distribution	7.3	10.3	7.9	12.4	11.6	10.3
Water collection, treatment and distribution	0.3	0.6	0.7	0.9	1.0	1.0

Source: Romanian Statistical Yearbook, 1997

Table1-5 Gross domestic product by categories by resources

%	1991	1992	1993	1994	1995	1996
Agriculture	18.3	18.6	20.6	19.4	19.3	18.7
Sylviculture, fishing, forestry and hunting	0.5	0.5	0.4	0.5	0.5	0.4
Industry	37.9	38.3	33.8	36.2	32.9	34.2
Construction	4.4	4.8	5.2	6.5	6.6	6.9
Trade	13.5	14.3	10.3	8.2	10.5	10.1
Transport	5.7	7.6	8.8	7.5	6.3	6.6
Post and telecommunications	1.0	0.9	1.3	1.3	1.4	2.1
Financial, banking and insurance activities	2.6	5.3	5.1	4.8	5.0	4.1
Real estate and other services	3.9	4.3	4.2	4.3	4.8	5.5
Public administration and defence, compulsory social assistance	3.1	3.4	3.1	3.2	3.7	3.4
Education	2.8	2.7	2.5	2.5	2.6	2.1
Health and social assistance	2.3	2.1	1.8	1.9	1.8	1.5
Gross domestic product - total(billion lei)	2,203.9	6,029.2	20,035.7	49,773.2	72,135.5	108,390.9
Gross domestic product per capita (lei)	95,057	264,565	880,487	2,189,697	3,180,444	4,794,441
The weight of private sector in gross domestic product (%)	23.6	26.4	34.8	38.9	45.3	52.5

Source: Romanian Statistical Yearbook, 1997

Table1-6 Consumer price indices

	Previous year = 100						
	1991	1992	1993	1994	1995	1996	1997
Total	270.2	310.4	356.1	236.7	132.3	138.8	254.8
Food goods	286.2	336.6	348.9	236.2	131.9	136.4	-
Non-food goods	267.8	294.2	369	232.8	129.6	139.1	-
Services	235.7	280.4	340.3	250.8	142.7	146.9	-

Source: Romanian Statistical Yearbook, 1997

Table1-7 Commercial exchange rate

Year	1992	1993	1994	1995	1996	1997	1998
The exchange rate with the U.S (for $)	308	760	1,655	2,033	3,085	7,168	8,383 *

Sorce : Country Report 2nd quarter 1998

* April 17th 1998

Table1-8 Employment by activities of national economy (end of year)

thou persons	1991	1992	1993	1994	1995	1996
Total	10,786	10,458	10,062	10,011	9,493	9,379
Agriculture	3,116	3,362	3,537	3,561	3,187	3,249
Sylviculture, forestry and hunting	89	81	77	86	78	71
Industry	3,803	3,301	3,030	2,882	2,714	2,741
Mining and quarrying	277	272	259	256	250	250
Manufacturing	3,372	2,865	2,606	2,456	2,293	2,302
Electric and thermal energy, gas and water	154	164	165	170	171	189
Construction	501	579	574	563	479	475
Trade	699	754	585	636	865	772
Hotels and restaurants	213	175	131	136	123	116
Transport	594	556	497	462	458	448
Post and telecommunications	96	93	95	94	98	99
Financial, banking and insurance activities	44	57	66	59	71	71
Real estate and other services	421	441	417	438	324	257
Public administration and defence; compulsory social assistance	99	113	117	125	131	125
Education	426	432	432	437	437	441
Health and social assistance	311	306	308	333	333	337
Other activities of the national economy	374	208	196	199	195	177

Source: Romanian Statistical Yearbook, 1997

Table1-9 Monthly average salary income (April 1998)

	lei
Total Economy	1,045,498
Agriculture	721,181
Industry - total	1,107,938
Mining and quarrying	1,740,446
Wood industry	725,170
Pulp, paper and cardboard	1,021,699
Transport and store	1,239,273
Financial, banking and insurances institutions activities	3,414,473
Public administration	1,163,170

Source: Monthly Statistical Bulletin, no.4 1998

2. Olt County

Table 2-1 Population at 1st July (Olt County)

	1980	1985	1990	1995	1996
TOTAL	531,972	530,996	530,425	519,030	517,597
Urban (%)	26.5	30.8	39.1	39.8	39.9
Rural (%)	73.5	69.2	60.9	60.2	60.1

Source: The Statistic Summary of Olt, 1997

Table 2-2 Employment by branches (Olt County)

thou persons	1980	1985	1990	1995	1996
Total	250.3	245.6	247.2	208.4	205.8
Agriculture	123.6	107.3	107.6	104.1	106.6
Silviculture,forestry and hunting	0.7	0.8	0.7	0.5	0.5
Industry	60.6	67.3	72.7	39.3	40.9
Constructions	18.6	21.9	14.3	9.6	9.3
Trade	10.3	10.8	12	16.9	11.8
Transports	13	12.1	11.9	6.8	6.6
Post and communications	1.5	1.5	1.8	1.7	1.6
Financial,banking and insurance activities	0.5	0.6	0.9	1.2	1.3
Public administration and defence,compulsory social assistance	1.3	1.2	1.5	2.7	2.6
Education	8.7	8.7	9.1	8.5	8.5
Health and social assistance	4.8	5.1	5.4	5.9	6.1

Source: The Statistic Summary of Olt, 1997

Table 2-3 Monthly average salary income(Olt County)

lei	1995	1996
Total	208,305	313,561
Agriculture	208,305	313,561
Silviculture,forestry and hunting	177,383	249,429
Fishing and fish breeding	188,782	299,122
Industry	230,030	-
Mining and quarrying	303,281	450,491
Manufacturing	220,403	355,886
Electric and thermal energy,gas and water	285,825	424,673
Constructions	203,518	295,963
Trade	197,588	239,710
Hotels and restraunts	128,131	193,937
Transports	241,765	397,730
Post and communications	230,958	352,001
Financial,banking and insurance activities	369,248	626,552
Real estate and other services	180,545	255,974
Public administration and defence,compulsory social assistance	205,378	264,920
Education	189,617	281,507
Health and social assistance	173,334	237,934
Other branches of the national economy	137,883	196,980

Source: The Statistic Summary of Olt, 1997

Table 2-4 Total land area by use (Olt County)

Thous hectares	1995	1996
Total area	**549.8**	**549.8**
Agricultual area	**442.4**	**442.5**
Arable	383.1	383.2
Pastures	35.3	35.4
Meadows	0.8	0.8
Vineyards and nurseries	10.5	10.5
Orchards and nurseries	12.6	12.5
Forests	**57.7**	**57.7**
Area with waters and ponds	**17.9**	**17.9**
Other areas	**31.8**	**31.8**

Source: The Statistic Summary of Olt, 1997

Table 2-5 Cultivated area (Olt County)

Thou hectares	1980	1985	1990	1995	1996
Cereals for grains	**258.0**	**229.0**	**251.9**	**303.2**	**247.3**
Wheat and rye	81.6	82.4	101.0	138.8	74.6
Barley and two-row	33.0	30.3	34.9	23.7	17.9
Maize	142.2	103.7	113.4	138.6	151.2
Vegetables for grains	**4.3**	**13.0**	**5.4**	**1.2**	**1.9**
Pea	1.1	4.0	2.0	0.8	1.2
Green bean	3.2	8.4	3.0	0.4	0.6
Oil plants	**50.3**	**50.8**	**32.7**	**35.7**	**58.5**
Sunflower	30.7	32.5	24.5	34.3	56.3
Soy	15.3	11.9	5.9	1.0	1.5
Plants for industrization	**17.5**	**15.8**	**10.1**	**4.0**	**3.8**
Medicinal and aromatic plants	**2.7**	**3.6**	**2.5**	**1.7**	**1.7**
Vegetables	**17.5**	**13.0**	**11.6**	**8.3**	**9.1**
tomatoes	6.0	4.8	3.7	2.2	2.6
Dry onion	2.2	1.0	1.4	0.9	0.9
Cabbage	1.1	0.6	1.2	1.5	1.4
Fodder plants	**24.4**	**36.0**	**65.0**	**25.4**	**21.1**

Source: The Statistic Summary of Olt, 1997

Table 2-6 Agricultural production (Olt County)

Thou tons	1980	1985	1990	1995	1996
Cereals grains	**900.4**	**1,103.7**	**894.7**	**1,106.9**	**607.4**
Wheat and rye	256.3	332.5	392.9	519.5	76.4
Barley and two-row barley	104.8	132.7	143.1	88.1	30.6
Maize	538.4	626.1	355.1	495.7	498.4
Leguminous crops for grains	**2.2**	**18.1**	**3.1**	**2.6**	**5.4**
Sun flower	**40.4**	**77.3**	**31.8**	**52.4**	**71.0**
Soybean	**9.9**	**17.9**	**5.0**	**1.7**	**1.1**
Sugar beet	**296.6**	**379.6**	**147.1**	**49.2**	**51.9**
Potatoes	**30.1**	**56.6**	**22.3**	**18.2**	**20.4**
Vegetables - total	**190.9**	**241.4**	**96.3**	**111.9**	**99.4**
Tomatoes	104.8	151.0	42.4	43.8	37.9
Dry onion	10.8	10.4	9.1	7.4	6.0
Cabbage	32.5	22.6	20.8	27.7	23.7
Fruit	**68.5**	**77.7**	**37.2**	**27.8**	**48.8**
Plums	42.6	46.2	17.1	17.8	29.1
Apples	7.9	11.6	11.2	5.5	10.7
Pears	2.7	2.1	0.8	0.6	0.9
Peaches	1.1	4.0	2.1	0.9	1.4
Cherries and sour cherries	2.1	2.0	1.0	0.9	2.8
Apricots and ungrafted apricots	1.2	1.9	2.0	0.8	2.3
Nuts	1.5	1.0	0.8	0.3	0.5

Source: The Statistic Summary of Olt, 1997

Table 2-7 Structure of industrial production by activities(Olt County)

mill lei 1995 prices	%
Total	**100.0**
Mining and quarrying	**0.1**
Energy	0.1
Nonenergy	0.1
Manufacturing	**97.6**
Food and beverage tabacco industry	6.9
Textile and textil products	2.4
Textile , fur and leather wearing apparel	0.8
Leather goods and footwear	0.9
Wood processing(excluding funiture)	0.1
Publishing house , polygraphy and recordings on supports	0.1
Chemicals and synthetic and artificial fibres	5.7
Rubber and plastics processing	0.8
Other nonmetalic mineral products	9.5
Metallurgy	57.6
Metallic constructions and metal products	1.1
Machinery and equipments	2.2
Electric machinery and appliances	2.4
Means of road transport	3.9
Other means of transport	2.9
Furniture and other nonclassified	0.3
Wastes recovering	0.1
Electric and thermal energy , gas and water	**2.3**

Source: The Statistic Summary of Olt, 1997

3. Dolj County

Table 3-1 Population at 1st July (Dolj County)

1989	1990	1991	1992	1993	1994	1995	1996	1997
772,451	776,161	774,082	761,219	759,605	758,895	756,318	751,938	749,311

Source: The Statistic Summary of Dolj, 1997

Table 3-2 Employment by branches (Dolj County)

(thou persons)	1989	1990	1991	1992	1993	1994	1995	1996
Total	355.9	360.5	355.2	344.0	336.3	332.3	301.7	300.2
Agriculture	132.7	137.3	134.1	148.8	155.6	158.2	144.7	147.2
Silviculture,forestry and hunting	0.9	1.0	0.9	1.3	1.2	1.1	2.3	1.4
Industry	110.1	109.9	98.0	80.2	71.0	67.7	61.0	65.2
Mining and quarrying	3.2	3.0	2.8	2.3	2.5	2.4	2.4	2.3
Manufacturing	97.0	97.2	86.7	69.9	61.1	56.8	50.9	54.5
Electric and thermal energy,gas and water	9.9	9.7	8.5	8.0	7.4	8.5	7.7	8.4
Constructions	21.0	18.9	14.9	16.2	13.7	21.6	13.4	13.5
Trade	16.5	16.2	20.3	22.1	24.3	16.0	21.4	16.8
Hotels and restraunts	3.2	3.1	3.5	4.5	2.1	1.7	4.8	3.8
Transports	22.2	22.8	22.1	19.1	15.8	14.3	12.1	12.7
Post and communications	2.1	2.7	2.7	2.7	2.6	2.6	2.9	2.9
Financial,banking and insurance activities	1.1	1.3	1.4	1.3	1.4	1.4	1.7	1.8
Real estate and other services	15.9	14.4	14.3	14.0	13.7	14.7	6.0	5.4
Public administration and defence,compulsory social assistance	1.3	1.5	2.4	2.9	3.3	3.6	3.6	3.4
Education	12.5	15.0	16.5	15.0	14.7	13.6	13.4	13.3
Health and social assistance	8.8	9.1	9.1	9.6	10.2	9.8	9.4	9.6
Other branches of the national economy	7.6	7.3	15.0	6.3	6.7	6.0	5.0	3.2

Source: The Statistic Summary of Dolj, 1997

Table 3-3 Monthly average salary income (Dolj County)

lei	1995	1996
Total	213,659	319,341
Agriculture	163,041	233,622
Silviculture,forestry and hunting	147,168	260,874
Fishing and fish breeding	161,299	192,970
Industry	238,083	353,621
Mining and quarrying	293,649	415,163
Manufacturing	216,075	321,574
Electric and thermal energy,gas and water	357,429	529,416
Constructions	208,653	306,459
Trade	177,531	283,382
Hotels and restraunts	116,973	148,724
Transports	269,180	372,864
Post and communications	246,022	377,844
Financial,banking and insurance activities	375,887	620,236
Real estate and other services	215,196	323,491
Public administration and defence,compulsory social	205,128	272,960
Education	215,463	317,116
Health and social assistance	175,362	258,524
Other branches of the national economy	172,305	265,362

Source: The Statistic Summary of Dolj, 1997

Table 3-4 Total land area by use (Dolj County)

Thou hectares	1989	1990	1991	1992	1993	1994	1995	1996
Total area	**741.4**	**741.4**	**741.4**	**741.4**	**741.4**	**741.4**	**741.4**	**741.4**
Agricultual area	**590.3**	**590.1**	**590.1**	**583.9**	**584.0**	**588.7**	**588.6**	**588.6**
Arable	485.4	484.7	484.7	480.8	482.3	485.3	485.6	485.7
Pastures	72.9	74.1	74.1	68.0	67.1	68.8	71.4	71.5
Meadows	2.9	2.9	2.9	2.8	2.6	2.7	2.8	2.8
Vineyards and nurseries	16.2	16.0	16.0	20.5	20.5	20.4	19.0	19.0
Orchards and nurseries	12.9	12.4	12.4	11.9	11.5	11.5	9.8	9.7
Forests	**81.5**	**81.5**	**81.5**	**81.5**	**81.5**	**81.4**	**81.5**	**81.5**
Area with waters and ponds	**25.2**	**25.2**	**25.2**	**25.2**	**25.2**	**22.5**	**22.6**	**22.6**
Other areas	**44.3**	**44.6**	**44.6**	**50.7**	**50.6**	**48.9**	**48.8**	**48.8**

Source: The Statistic Summary of Dolj, 1997

Table 3-5 Cultivated Area (Dolj County)

Thou hectares	1989	1990	1991	1992	1993	1994	1995	1996
Cereals for grains	**302.6**	**305.3**	**341.5**	**319.6**	**364.2**	**384.3**	**371.7**	**274.8**
Wheat and rye	125.5	128.4	137.2	102.9	165.0	178.6	177.4	72.1
Barley and two-row	30.5	32.7	49.2	23.3	28.2	36.8	17.7	12.1
Oats	0.8	1.4	1.7	3.8	5.8	3.5	0.8	1.2
Maize	139.6	138.3	152.2	189.0	164.6	165.2	175.3	188.6
Rice	6.2	4.5	1.2	0.6	0.6	0.2	0.1	0.5
Vegetables for grains	**17.2**	**4.0**	**1.2**	**1.4**	**1.2**	**1.1**	**1.5**	**2.2**
Pea	3.1	2.3	0.8	0.5	0.5	0.5	0.9	1.1
Green bean	11.5	1.5	0.4	0.8	0.7	0.5	0.5	0.9
Chick Pea	2.4	0.1	-	0.0	-	0.0	0.1	0.2
Textile plants	**1.1**	-	-	-	-	-	-	-
Oil plants	**80.7**	**40.9**	**43.5**	**46.5**	**38.7**	**26.0**	**41.7**	**66.0**
Sunflower	38.2	31.8	38.7	42.1	36.1	24.2	39.4	61.9
Rape	0.4	0.5	0.4	-	-	-	0.1	-
Soy	34.0	7.2	3.4	4.2	2.3	1.4	1.8	3.8
Flax for oil	5.1	1.2	0.9	0.1	0.2	0.1	-	-
Castor-oil plant	3.1	0.2	-	-	-	-	-	-
Plants for industrization	**21.0**	**12.1**	**14.6**	**10.6**	**6.5**	**8.1**	**7.8**	**6.6**
Sugar beet	14.5	9.1	12.3	8.3	2.5	4.0	3.4	1.8
Tabacco	5.7	2.6	2.0	2.1	3.9	3.9	4.3	4.7
Sorghum for broom	0.8	0.4	0.2	0.1	0.2	0.2	0.2	0.2
Medicinal and aromatic plants	**4.3**	**2.7**	**1.2**	**2.6**	**0.5**	**0.4**	**0.4**	**0.9**
Potatoes	**7.4**	**5.0**	**1.9**	**2.8**	**3.9**	**3.9**	**3.8**	**4.5**
Early summer potatoes	3.9	3.2	1.3	1.5	2.2	2.6	2.4	2.7
Autumn	3.5	1.8	0.6	1.3	1.7	1.3	1.4	1.7
Vegetables	**13.5**	**10.4**	**9.0**	**12.5**	**11.9**	**10.6**	**11.2**	**11.8**
Tomatoes	4.7	3.4	3.8	4.6	3.8	3.2	3.4	3.5
Dry onion	1.0	1.0	0.8	1.7	1.5	1.5	1.5	1.7
Dry garlic	0.6	0.3	0.3	0.6	0.6	0.7	0.7	0.9
Cabbage	0.7	0.9	0.8	1.5	1.4	1.6	1.7	1.6
Peppers	1.2	1.2	0.5	1.0	0.7	0.6	0.5	0.7
Cucumber	0.7	0.3	0.1	0.3	0.3	0.2	0.3	0.2
Root crops	0.5	0.3	0.3	0.4	0.6	0.6	0.6	0.7
Rod pea	2.3	2.0	1.5	0.9	0.8	0.9	0.8	0.6
Rod bean	0.3	0.3	0.4	0.7	0.6	0.6	0.7	0.9
Green and yellow melons fodder	3.6	3.6	7.5	7.7	7.5	7.3	8.3	8.8
Fodder plants	**60.7**	**92.6**	**49.4**	**62.9**	**42.4**	**36.4**	**31.7**	**36.8**
Annual plants for hay and green	**31.8**	**19.3**	**14.6**	**12.4**	**14.4**	**12.2**	**9.8**	**13.8**
Plants for silage	**3.1**	**41.7**	**7.9**	**30.1**	**6.7**	**3.9**	**2.3**	**5.5**
Strawberry	**0.8**	**0.5**	**0.2**	**0.1**	**0.1**	**0.0**	**0.0**	**0.0**
Vineyard	**13.9**	**14.7**	**13.5**	**14.6**	**16.2**	**16.7**	**16.6**	**17.3**

Source: The Statistic Summaty of Dolj, 1997

Table 3-6 Agricultural production (Dolj County)

Thou tons	1989	1990	1991	1992	1993	1994	1995	1996
Cereals grains	**1,118.5**	**1,169.3**	**1,345.3**	**696.8**	**362.4**	**1,315.1**	**1,115.6**	**622.9**
Wheat and rye	529.9	509.8	394.4	219.1	255.7	545.3	398.5	75.6
Barley and two-row barley	167.1	143.5	189.5	72.0	44.3	131.0	56.8	21.0
Oats	2.6	2.9	3.5	7.5	4.2	4.7	1.2	0.9
Maize	410.3	507.2	756.4	397.4	57.1	633.6	656.1	525.0
Rice	8.5	5.8	1.5	0.7	1.1	0.4	0.0	0.5
Leguminous crops for grains	11.3	2.2	1.0	1.3	1.3	1.0	2.2	1.5
Fibre crops – cotton	**0.0**	-	-	-	-	-	-	-
Oilseed crops	**66.1**	**43.8**	**57.9**	**48.2**	**16.6**	**43.1**	**56.7**	**72.9**
Sugar beet	**308.7**	**178.3**	**308.3**	**104.2**	**8.3**	**84.1**	**50.1**	**20.7**
Tabacco	**3.7**	**2.2**	**3.0**	**2.1**	**3.7**	**5.7**	**5.8**	**5.4**
Genista	**0.4**	**0.3**	**0.2**	**0.1**	**0.2**	**0.1**	**0.2**	**0.2**
Medicinal and aromatic plants	**3.4**	**1.9**	**0.7**	**0.6**	**0.1**	**0.2**	**0.0**	**0.1**
Potatoes	**53.8**	**28.5**	**17.9**	**28.3**	**21.8**	**38.5**	**39.1**	**37.4**
Vegetables - total	**173.3**	**124.6**	**119.4**	**147.7**	**101.5**	**120.6**	**136.1**	**132.7**
Tomatoes	80.5	67.7	71.1	67.4	40.5	47.2	48.4	49.3
Dry onion	13.6	10.1	6.9	16.2	5.7	12.0	13.8	12.0
Dry garlic	1.6	0.9	1.5	2.8	0.7	2.7	3.7	3.4
Cabbage	27.6	19.0	17.4	25.5	27.0	28.7	33.7	33.6
Green peppers	7.0	5.5	3.0	7.7	4.1	5.5	5.1	6.0
Cucumber	5.8	6.0	6.4	11.8	10.2	3.0	14.0	12.1
Edible roots	5.7	2.0	2.8	3.8	3.1	6.2	5.4	5.5
Peas	**12.6**	**7.3**	**5.1**	**3.6**	**1.8**	**3.8**	**3.8**	**1.5**
Beans	**1.6**	**0.9**	**1.0**	**1.9**	**2.6**	**1.8**	**2.6**	**2.4**
Water melons and melons	**9.7**	**52.4**	**119.2**	**98.2**	**48.8**	**103.8**	**101.4**	**94.7**
Grapes	**40.1**	**19.2**	**70.8**	**51.4**	**47.5**	**71.7**	**69.5**	**76.7**
Fruit	**43.9**	**26.4**	**24.5**	**28.8**	**21.0**	**16.1**	**18.9**	**32.5**
Apples	20.7	12.6	8.7	16.6	9.8	5.2	9.1	13.6
Pears	0.9	0.9	0.8	0.9	0.5	0.5	0.7	1.0
Plums	6.3	5.8	7.8	6.9	6.3	6.7	4.9	11.0
Apricots and ungrafted apricots	3.2	2.6	1.6	1.2	1.0	1.5	0.7	2.8
Peaches	10.1	2.2	4.0	1.3	2.1	0.7	2.2	1.8
Cherries and sour cherries	1.1	0.8	0.7	1.0	0.7	0.6	0.6	1.2
Nuts	0.2	0.2	0.1	0.2	0.1	0.2	0.2	0.4
Strawberries	0.7	0.6	0.4	0.2	0.1	0.1	0.0	0.1

Source: The Statistic Summary of Dolj, 1997

Table 3-7 Structure of industrial production by activities in 1997 (Dolj County)

Indicator	Industrial production structure (%)
Total	100
Natural gas and oil extraction (excluding prospections)	2.3
Food and drink industry	19.2
Tobacco industry	1.2
Textiles	0.7
Leather, fur and textiles coats industry	2.2
Shoe and leather industry	0.4
Wood processing industry(excluding the furniture production)	0.6
Publishing polygraphy and recording reproduction on supports	0.5
Artificial fibres and chemical industry	10.7
Other no-metallic products industry	1.3
Metallurgical industry	0.6
Metallic buildings and metal machine products Industry (excluding equipment, installation)	1.2
Equipment and machine industry	1.8
Electric machine and devices	6.0
Car industry	25.6
Other transportation industry	2.4
Furniture industry	0.9
Recyclable materials	
Waste recovery	0.2
Gas, water, thermic and electric energy production and transport	20.8
Water treatment and distribution	1.2

Source: The Statistic Summary of Dolj, 1997

Appendix C-2 Results of the socioeconomic interview survey regarding national forests

Result of the interview survey - 1998 - Northern zone

Function of wood production

The most frequent species mentioned are as follows: *Quercus* spp., *Robinia* spp., *Populus* spp., while *Salix* spp. and *Carpinus* spp. or *Betula* spp. are less frequent mentioned. The evaluated mature age of *Quercus* spp. was 40-70 years which is smaller than the real one.

The initial number of seedlings per hectare was appreciated as ranging from 2,000 up to 7,000. The number of trees at cutting age ranges from 100 to 800 per hectare.

The data regarding the evaluated mature age, initial number of seedlings, number of trees at cutting age are recorded according to the species in the table below.

The prices are estimated according to the species, destination (firewood and wood industry) and the results are shown in the table below, too.

Species	Silvicultural system			Price of wood (thousand Lei)	
	Mature age (years)	Initial number of trees /ha	Final number of trees /ha	Fire wood	Wood industry
Quercus spp.	40-70	2,000-7,000	100-800	120-180	176-300
Robinia sp.	18-60	2,500-3,500	500-1,000	150	172-200
Populus spp.	20-50	400-3,000	300-600	110	140-150
Salix spp.					150

Adequate terrain is a hilly slope in case of *Quercus* spp., plain and sandy soil for *Robinia* and *Populus* spp.

According to the silvicultural systems the work conditions are appreciated as medium.

Function of fire wood production

The consumption of firewood is 4 to 5 m^3 per family. In the past, the consumption was about 3 m^3, so that it increased.

In the past the families used coal, and when provisions finished they depended on firewood as well as on the heating. Charcoal is produced in the northern mountainous region, but as it is expensive, they do not use it.

The most utilised wood is that of *Quercus* spp., *Robinia pseudoacacia* and other species that can be bought close to the national forests. The quality and quantity is similar to those sold in the past.

The price of firewood is 120 thousand Lei for *Populus* spp., 150 thousand Lei for *Robinia* spp. and 180 thousand for *Quercus* spp., which is referred to as very expensive.

Function of subproducts in the forest

The subproducts mentioned are: mushrooms, medicinal plants, fruits and grass and bush for fodder.

Particularly there are utilising the mushrooms. There are recorded the answers that the production of subproducts decreased because of decline phenomenon of the forest, on the other side there is also recorded the situation that there is no such influence in the Olt County. The area of the production covers

all the forests including the hilly districts.
The villagers are utilising it, on the other side RNP is harvesting and selling it.

Function of water resource conservation
About 57 % of the interviewees have no knowledge about it. Anybody, who feels a benefit of it, is particularly thinking of the river band forest as they are practically utilising it as water supply resource for the Mersey.

Function of soil conservation
This function is evident in two places: where landslide occurred, and the river band forest behind the Olt river dam. On the other hand, there is a good perception of this function as the forests exist nearby the community.

Function of wind break
There are not many answers regarding the topic. About 86 % of interviewees do not feel the necessity of the function. Due to the topography and climate, forests are not prone to wind damage. Into the district of Pitesti in the Olt County people are aware of this function.

Utilization of hunting
Into the *Quercus* forest on the hilly district the perception of the effect of hunting is evident. AGVPS and RNP are managing and making a profit on it. Objective animals are fox, pheasant, wild boar, deer and hare.

Utilization of grazing in the forest
It does not occur because it is prohibited by law.

Forestry labour
The employment of the national forest are carrying out the afforestation, nursery work, felling of the wood, gathering fruits, and support work for hunting.
The work type is daily employment mainly, the wage is 20 to 50 thousand Lei, average is 30 thousand Lei using chainsaw and manual tools. The opportunity of forestry work is increasing, and is expected in the near future, too.

Coordination of the regional development
The contribution is connected with afforestation in the felled area, degraded area, and maintenance work of the road and valley.
The influence of decline phenomenon results in increasingly scarce trees and poor quality of wood, as well as the reducing of agricultural crops. Regarding the matter of request and co-ordination they hope that RNP will solve the afforestation and tending on the degraded area, the improvement and arrangement of river band forest, and establishment of water supply system for community. More financial funds are required either.

Function of wood production

The species mentioned are as follows: *Quercus* spp., *Robinia* spp., *Populas* spp., *Salix* spp., *Pinus* spp., *Fraxinus* spp., *Fagus* spp., *Acer* spp. and *Carpinus betulus*. The main species are: *Quercus* spp., *Robinia* sp. and *Populus* spp.

The answers regarding the silvicultural system are recorded according to the species in the table below. The items are the same with Northern and Southern zone.

Species	Silvicultural system			Price of wood (thousand Lei)	
	Mature age (years)	Initial number of trees /ha	Final number of trees /ha	Fire wood	Wood industry
Quercus spp.	100-120	6,700	600-800	110-133	150-300 (200)
Robinia sp.	25	5,000	700-900	100-133	160-200 (180)
Populus spp.	25	625	300-400	133	180
Salix spp.					180
Fraxinus spp.	60	6,700		110	160

Concerning *Quercus* spp., there is a case of selling for wood industry outside the county at the price of 225 to 240 thousand Lei for laminated wood or board. There is a case of selling by 800 thousand Lei for special users, too.

The difficulty of silvicultural technique is considered particularly for *Quercus* spp.

Function of fire wood production

The consumption of firewood is 3 to 4 m^3 per year for a family. The trend increased with 20-40 % in comparison with the past. Between 1980 and 1990 the provisions of firewood were restricted, actually they are supplying from declined trees, too as they can be obtained more easily. There are utilized salvage cut trees.

The price of firewood is increasing in spite of the quality decreasing. The price of wood ranges from 133 to 150 up to 170 thousand Lei.

In the poor villages they are utilizing the dry cane of sunflower.

Function of subproducts in the forest

The subproducts utilized are: firstly, fruits and medicinal plants and secondly, mushrooms. The grass as well as the branches of *Robinia* sp. are utilized as fodder. In Bals and Falcoiu in Olt County it is RNP which harvests the fruits and exports them obtaining income. A few quantity is utilized by villagers.

High forest of *Quercus* spp. is suitable for subproducts, but as the forest is affected by the decline phenomenon, fruit production is decreasing, In Bals district there are 100 ha and it is desired more than 1,200 ha or 2,000 ha.

Function of water resource conservation

About 68 % of the interviewees have no knowledge about it.
Practically there are districts where water is used and water resource forest is clearly referred to as a benefit by the villagers. Only one of the mayors and one of the forest rangers are conscious of the function within the whole area of the district forest.

Function of soil conservation

On the slopes of the hilly district forest surrounding the community settlements as land slided, the whole degraded area or moreover, on the river band forest of the Olt river, people are consciousness of the soil conservation function.
There are some forests planted with *Robinia*, *Elaeagnus* and *Quercus* spp. And within other areas there are established forest belts of 200 m wide on the farmland.
On the other hand, about 37 % of the interviewees are not aware of it.

Function of wind break

About 89 % of the interviewees have no knowledge of it.
In Radovan and Scornicesti districts the wind break function is expected practically, the forests consist of *Robinia* and *Quercus* spp.

Utilization of hunting

All the interviewees recognized that hunting is done in the neighbouring forests. It is done in all the seasons, particularly in winter much more frequently.
As for the forest cover type it is considered that broad-leaved forest such as *Quercus* spp., *Robinia* sp. are adequate, but they are not particularly required.
Regarding the forest size it is considered that more than 250 ha or 1,000 ha are suitable but it is not specially required.
Objective animals are as follows: fox, wild boar, rabbit, pheasant, deer, fallow deer (*Cervus dama*) and badger.
AGVPS and RNP are managing game funds and making profits on it.

Utilization of grazing in the forest

It does not occur but scarcely because it is prohibited by law since 1997.
The watchmen accompany the farmers' animals grazing on the harvested farm and meadows. But because of the bad manners there are a few cases of grazing in the forest.

Forestry labour

The employees of the national forest carry out the following operations: felling, afforestation, silvicultural works, nursery, medical (chemical) spraying, gathering medical plants and fruits, collecting of seeds, stacking of fire wood etc.
The type of work is daily employment, using chain saw and manual tools mainly.
The labour wage is 20 to 50 thousand Lei, that is almost 30 thousand Lei level. There are a few cases of voluntary work, it includes a merit of obtaining fire wood more cheaply. The desire of forestry work is increasing.

Coordination of the regional development

Regarding the case of contribution there are listed the following: improvement of road, support of afforestation work for monastery and degraded area, and levy fees by making hunting chalets available.

The influence of decline phenomenon appeared increasing in case of fire wood provisions referred to as positive; on the other side, a negative view appeared as the ecological equilibrium was broken and bad conditions for regeneration appeared due to undesirable climatic condition and drought which reduced the honey yield due to low florescence of *Robinia* sp., reduced the agricultural crops, hunting opportunities, and resulted in erosion.

As for the matter of request and co-ordination, the road construction and improvement, afforestation on degraded area, good forest management and protection work, support of water supply system for community, improvement of the employment in the forestry are hoped for the RNP. Almost all the interviewees desired the increasing of fund for the above mentioned activities.

Function of wood production

The species mentioned are as follows: *Quercus* spp., *Robinia* sp., *Populus* spp., *Salix* spp., *Fraxinus* spp., and *Tilia* spp. The main species are: *Quercus* spp., *Robinia* spp., and *Populus* spp.

The answers regarding the silvicultural system are recorded according to the species in the table below. The items are the same with Northern and Central zone.

Species	Silvicultural system			Price of wood (thousand Lei)	
	Mature age (years)	Initial number of trees /ha	Final number of trees /ha	Fire wood	Wood industry
Quercus spp.	60-120	1,600-7,000	250-2,000	110-200	170-500
(Average)	(100)	(7,000)	(700)	(200)	(140)
Robinia sp.	20-35	1,000-5,000	500-3,000	110-180	160-220
(Average)	(30)	(5,000)	(1,500)	(130)	(170)
Populus spp.	20-25	400-660	250-600	80-160	130-200
(Average)	(20)	(600)	(400)	(110)	(160)
Fraxinus spp.	120	4,400	220		150
Tilia spp.	60	4,400	880		

The number of trees in case of *Robinia* sp., reflects a high density, more than in the Northern and central zone.

The difficulty of silvicultural technique is considered in case of *Quercus* spp. and *Robinia* sp. in a few parts of answers, but it is not considered difficult in case of *Populus* spp.

Function of fire wood production

The consumption of firewood is 4 to 5 m^3 per family. The trend has not changed in many districts, but in case of some districts the consumption increased with 20-40 % in comparison with the past. Between 1980 and 1990 the provisions of fire wood was restricted. The most used is *Robinia* sp., but they also use *Populus* spp., *Quercus* spp. as well as branches of *Salix* spp.

The decline phenomenon does not influence the provisions of fire wood so much as it seems to be "decreased" for some and "increased" for others. As for the quality it has been appreciated as decreased but there is no problem for using firewood.

The price of wood ranges from 80 to 200 thousand Lei, the villagers' impression is that it is very high relating to the recent inflation.

Function of subproducts in the forest

The subproducts utilized are: medicinal plants, fruits, mushrooms and particularly grass for fodder for animals in many districts.

Urtica dioica is used as medicinal plant and fodder, too. The utilization began in 1990, about 10 years ago. One of the forest range offices gathers and sells fruits of *Rosa canina*.

The decline phenomenon influences the reducing of medicinal plants, fruits and fodder slightly and decreasing of their quality.

These subproducts are utilized in the *Robinia* sp. forest mainly but it possible for them to be utilized in

the forests of *Quercus* spp., *Populus* spp. and *Salix* spp., too.

Function of water resource conservation

About 73% of the interviewees have no knowledge about it.

In the Vladila village water is used for irrigation in the vegetable gardens through the canal in the national forests from spring, In the Resca village, *Quercus* spp. covering 900 ha has the water resource conservation function.

Regarding the situation of wells, the depth is 3-4 m on the river band but the depth decreases with the altitude (when altitude increases, the depth of wells ranges from 10-20 m to 20-30 m). The wells existed on the low plateau of the plain but the drought influenced them.

Function of soil conservation

The *Robinia* sp. coppice forest performs the role of protection of soil conservation and climate alleviating for the neighbouring farmland on the sandy soil area.

The Danube river band forest (*Robinia* sp. and *Eleagnus* spp. forest of 15 m width; *Robinia* sp. forest of 10 m width) comprises forest belts of *Robinia* sp., *Populus* spp., *Quercus* spp. of 6,500 ha, and *Quercus* forest of 5,000 ha and perform the protection role of agricultural crops and works.

On the other side, about 27 % of interviewees are not aware of it.

Function of wind break

There are wide areas of sandy soil from the Danube river band to low plateau and the climate is dry, therefore the protective function of forest against strong wind is expected.

There are established forest belts of 3 m width minimum, 6-8 m width average, and 10 to 50 m is the most widely spread type. They cover more than 1,500 ha of that type of forest.

Robinia spp. is usually used for the forest belt. There can be encountered a two-stair forest type with the participation of *Elaeagnus angustifolia* at the edge of the belt. The height of the forest is 4 m or more, but generally it is low.

On the other hand there are the forest belts of *Populus* spp. and *Salix* spp. They are considered to perform the protection role for the farm land, crops and villagers' life depending on the wind break effect, and moreover, combined with the soil conservation and wood production. About 27 % of answers have no correspondence.

Utilization of hunting

About 73 % of answers recognised that hunting and fishing are done in the plain forest of *Robinia* sp., *Quercus* spp. and wind protection belts of the above mentioned species including *Populus* spp., river band forest and lakes, too.

Regarding the dimension of the forest according to the answers the big forest is suitable.

Objective animals are as follows: wild boar, deer, fox, hare, and birds like: duck, partridge etc. representative for the river band forest.

AGVPS and RNP are managing the game funds and making profits on it.

Utilization of grazing in the forest

It does not occur because it is prohibited by law. But very often they are grazing in the forest in spring.

Forestry labour

There are opportunities of work from felling to afforestation and other silvicultural activities including gathering fruits, support work for hunting, too.

They use manual tools and chain saw mainly and in a few cases they use tractor on the felling area.

The employment type is mainly daily work.

The wage is 15 to 50 thousand Lei very often it is 20 to 30 thousand Lei.

The opportunity of forestry work is increasing although some parts of the district provide a few opportunities for work; therefore, the employment opportunities are expected to increase.

Coordination of the regional development

The contribution is connected with construction of forest road and improvement of road, afforestation and establishment of forest belt on the river band and plateau.

The influence of decline phenomenon results in increasing of firewood supply which can be referred to as a benefit, but on the other-side, the undesirable climatic conditions, the reducing agricultural crops, wind damage, movement of sand, soil erosion and the influence for hunting are referred to as negative effects.

Regarding the matter of request and co-ordination they hope that the establishment of forest will contribute to the safety of agricultural activity, and other expectations are as follows: rent of machinery for private forest activity, increasing of demand for agrotourism.

Generally, a great part of the answers reflect the requires for more financial funds.

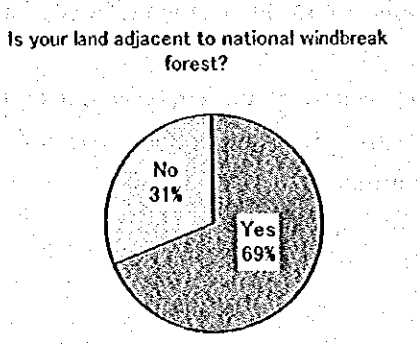
Appendix C-3 Interview Survey Regarding Windbreak Forests

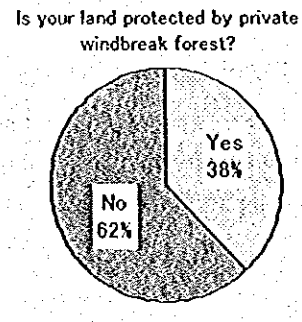
Study on functional type categorization and regional forest landscape

An interview survey was conducted on 13 peoples who live or work at southern area of Olt County or Dolj County. They were 5 RNP related peoples, 3 village mayors and 5 farmers. The survey identified what type of windbreak forests local people expect.

[Presence of Windbreak Forests]

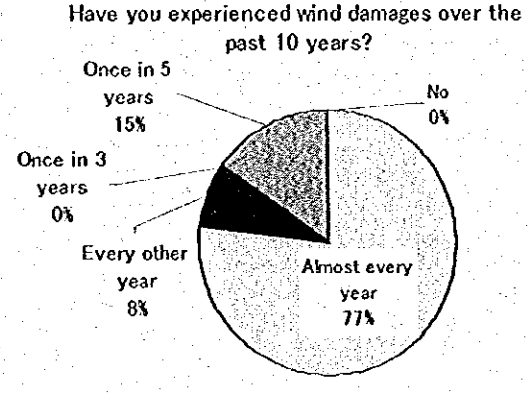
Among respondents of the interview survey, 70% of them are adjacent to national windbreak forests. Some of them in Ostroveni and Apele Vii area had farmlands with private windbreak forests. 38% of their lands bordered on both of national windbreak forests and private windbreak forests. 31% of them bordered on neither of them. 31% of them are adjacent to only national windbreak forests.





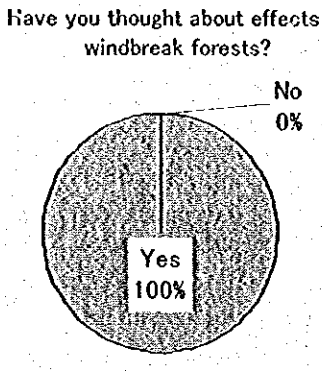
[Experiences of Wind Damage]

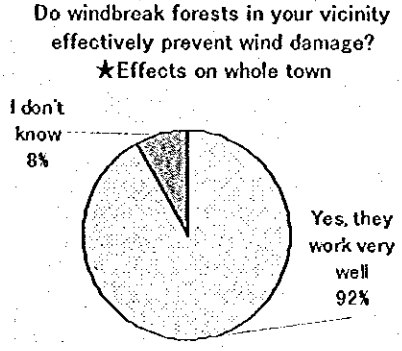
All respondents (100%) experienced wind damages. In terms of frequency, about 77% of them answered, "almost every year". They have experienced wind damages regardless of their adjacency to national windbreak forests or private forests.

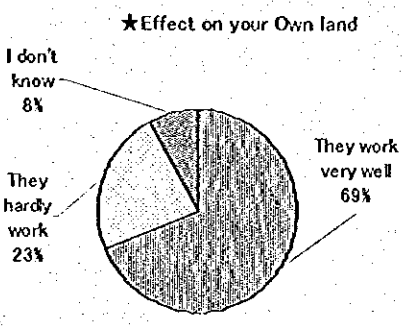


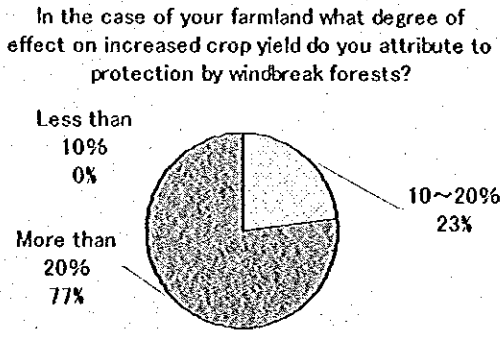
[Degree of Interest in Windbreak Forests]

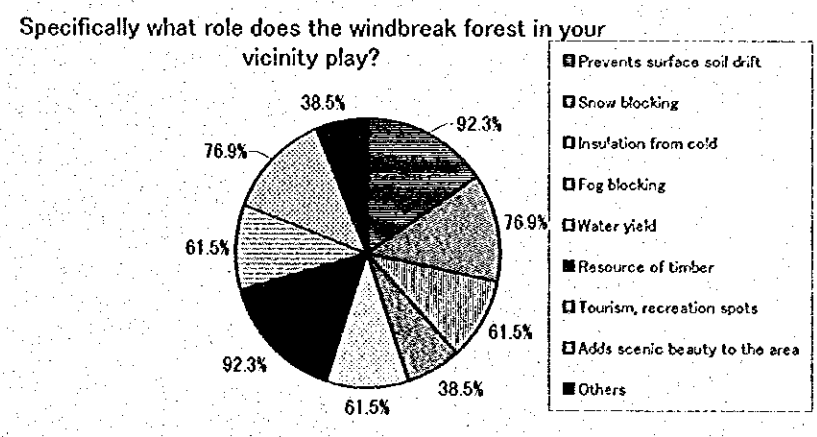
All respondents (100%) said that they are interested in windbreak forests. In response to a question whether windbreak forests are effective in windbreaking, 100% of them answered that they were effective comprehensively, however, a few of them said that windbreak forests did not work for their own lands. With regard to other effects of windbreak forests in addition to their windbreaking, both "Prevention of surface soil drift" and "Resource of timber" ranked first and exceeded 90%. In contrast, effects with lowest evaluation are "Fog blocking" and "others (hunting)" at 38.5%. Functions that they expect of windbreak forests are "Prevention of surface soil drift" at 69% and "Resource of timber" at 54% and so on.











[Dissatisfactions and Requests to national Forests]

Only 15% of respondents were satisfied with national windbreak forests. Reasons of their dissatisfaction included 1) Gaps in the windbreak forest result in impact from wind (39%), 2) I suffer due to total lack of windbreak forest (23%). In response to a question whether national forests are abundant or lacked on the whole, 85% of them answered, "they should be increased and reinforced on the whole". 92% of them think that they want to plant windbreak forests on their own lands if circumstances permit. If they develop windbreak forests with consciousness of forest landscapes, preferred types of trees are *Robinia pseudoacacia* (62%), *Quercus* spp. (46%) and *Populus* spp. (31%.) There were positive opinions that they wanted to link windbreak forests with the development of the region including promotion of tourism.