Soil

Draft

Norwegian Mapping Authority
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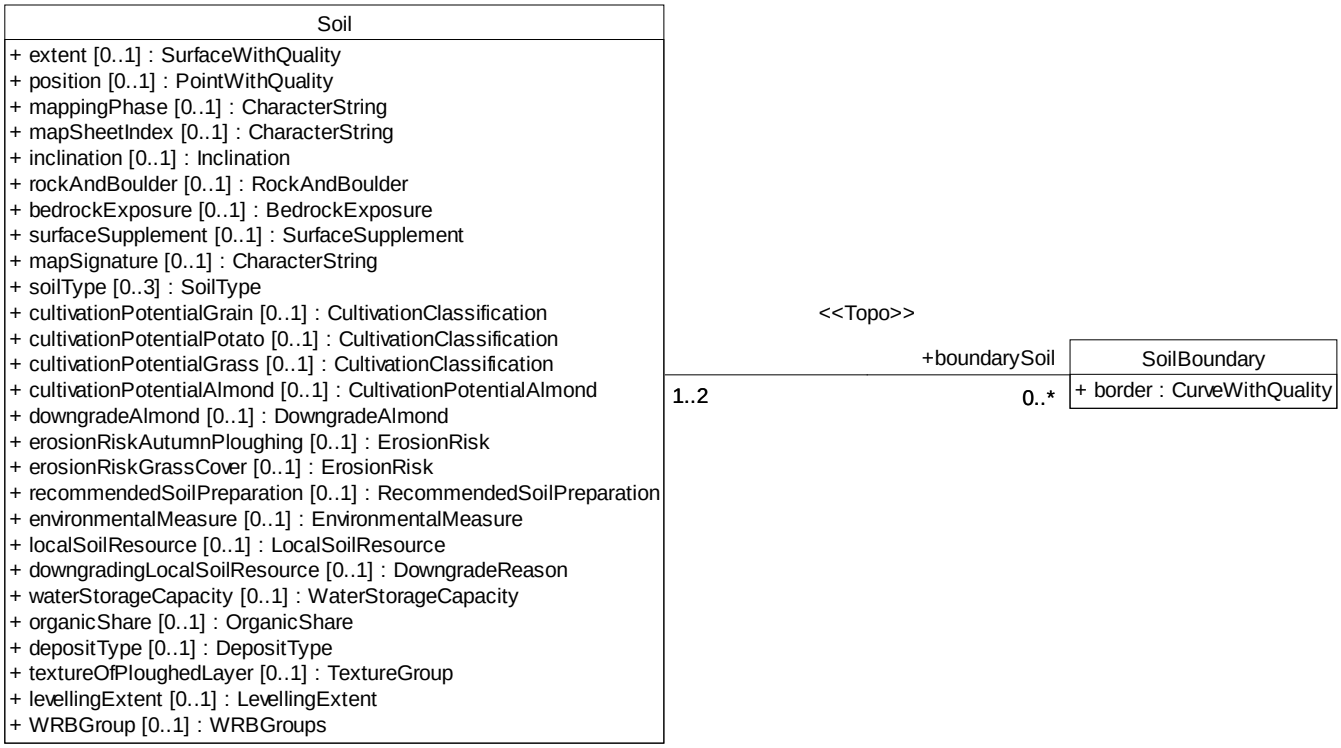
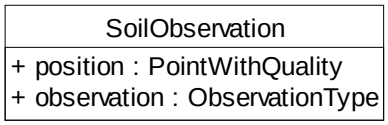
1.1 Application schema

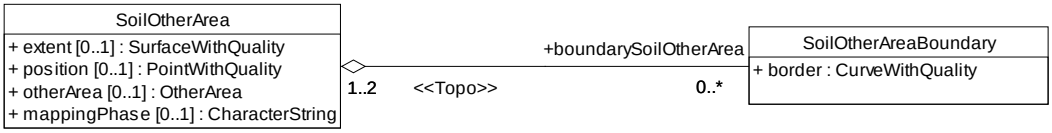
Soil



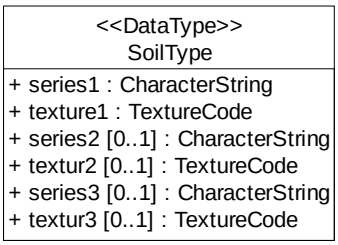
Soil observation

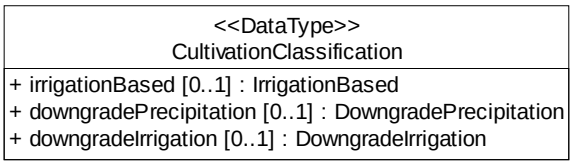


Soil area

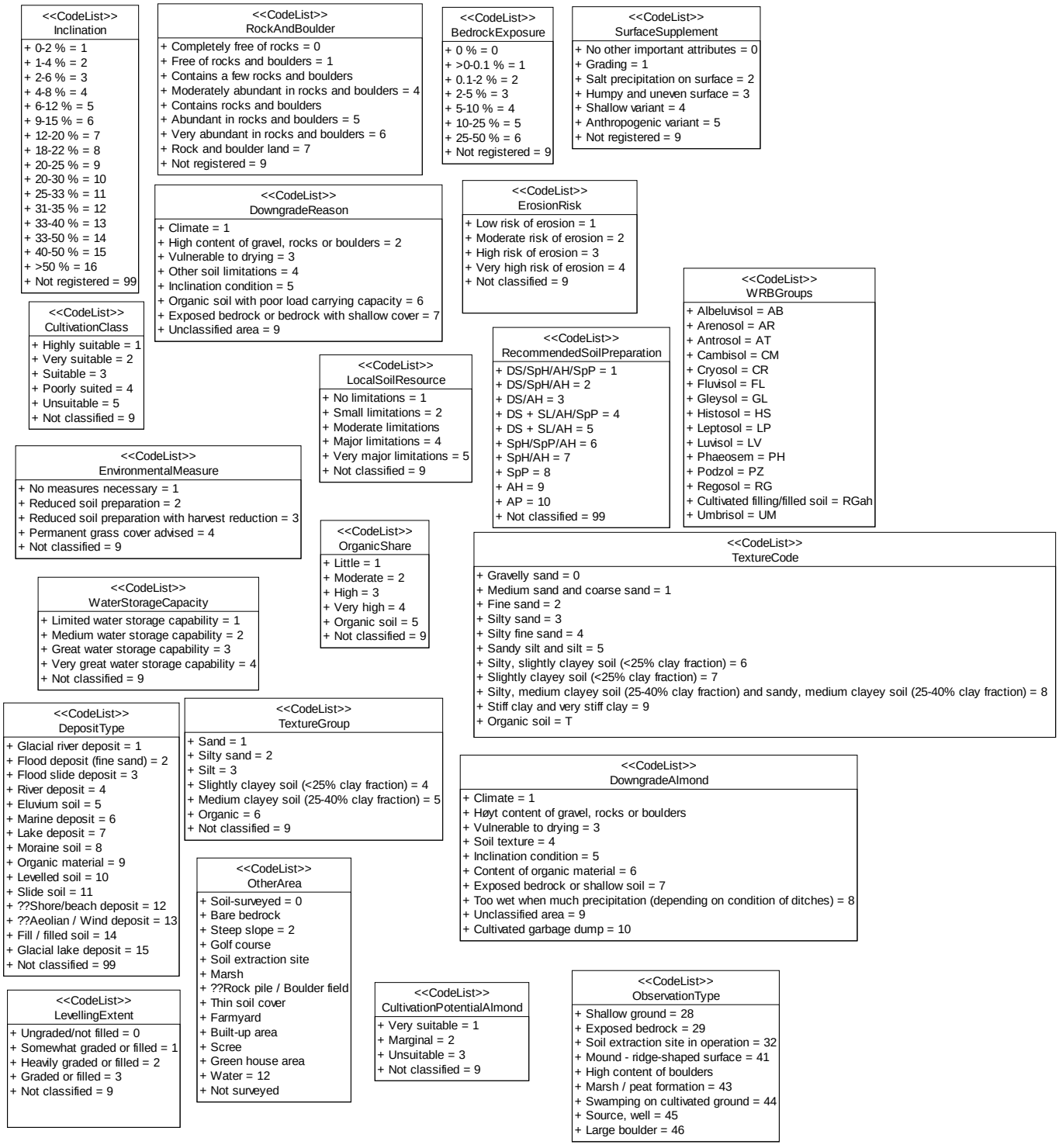


Datatypes


<<DataType>>
SoilType
+ series1 : CharacterString
+ texture1 : TextureCode
+ series2 [0..1] : CharacterString
+ textur2 [0..1] : TextureCode
+ series3 [0..1] : CharacterString
+ textur3 [0..1] : TextureCode


<<DataType>>
CultivationClassification
+ irrigationBased [0..1] : IrrigationBased
+ downgradePrecipitation [0..1] : DowngradePrecipitation
+ downgradeIrrigation [0..1] : DowngradeIrrigation

Codelists


<<CodeList>>
Inclination
+ 0-2 % = 1
+ 1-4 % = 2
+ 2-6 % = 3
+ 4-8 % = 4
+ 6-12 % = 5
+ 9-15 % = 6
+ 12-20 % = 7
+ 18-22 % = 8
+ 20-25 % = 9
+ 20-30 % = 10
+ 25-33 % = 11
+ 31-35 % = 12
+ 33-40 % = 13
+ 33-50 % = 14
+ 40-50 % = 15
+ >50 % = 16
+ Not registered = 99
<<CodeList>>
RockAndBoulder
+ Completely free of rocks = 0
+ Free of rocks and boulders = 1
+ Contains a few rocks and boulders
+ Moderately abundant in rocks and boulders = 4
+ Contains rocks and boulders
+ Abundant in rocks and boulders = 5
+ Very abundant in rocks and boulders = 6
+ Rock and boulder land = 7
+ Not registered = 9
<<CodeList>>
BedrockExposure
+ 0 % = 0
+ >0-0.1 % = 1
+ 0.1-2 % = 2
+ 2-5 % = 3
+ 5-10 % = 4
+ 10-25 % = 5
+ 25-50 % = 6
+ Not registered = 9
<<CodeList>>
SurfaceSupplement
+ No other important attributes = 0
+ Grading = 1
+ Salt precipitation on surface = 2
+ Humpy and uneven surface = 3
+ Shallow variant = 4
+ Anthropogenic variant = 5
+ Not registered = 9
<<CodeList>>
DowngradeReason
+ Climate = 1
+ High content of gravel, rocks or boulders = 2
+ Vulnerable to drying = 3
+ Other soil limitations = 4
+ Inclination condition = 5
+ Organic soil with poor load carrying capacity = 6
+ Exposed bedrock or bedrock with shallow cover = 7
+ Unclassified area = 9
<<CodeList>>
ErosionRisk
+ Low risk of erosion = 1
+ Moderate risk of erosion = 2
+ High risk of erosion = 3
+ Very high risk of erosion = 4
+ Not classified = 9
<<CodeList>>
WRBGroups
+ Albeluvisol = AB
+ Arenosol = AR
+ Antrosol = AT
+ Cambisol = CM
+ Cryosol = CR
+ Fluvisol = FL
+ Gleysol = GL
+ Histosol = HS
+ Leptosol = LP
+ Luvisol = LV
+ Phaeosem = PH
+ Podzol = PZ
+ Regosol = RG
+ Cultivated filling/filled soil = RGah
+ Umbrisol = UM
<<CodeList>>
CultivationClass
+ Highly suitable = 1
+ Very suitable = 2
+ Suitable = 3
+ Poorly suited = 4
+ Unsuitable = 5
+ Not classified = 9
<<CodeList>>
RecommendedSoilPreparation
+ DS/SpH/AH/SpP = 1
+ DS/SpH/AH = 2
+ DS/AH = 3
+ DS + SL/AH/SpP = 4
+ DS + SL/AH = 5
+ SpH/SpP/AH = 6
+ SpH/AH = 7
+ SpP = 8
+ AH = 9
+ AP = 10
+ Not classified = 99
<<CodeList>>
LocalSoilResource
+ No limitations = 1
+ Small limitations = 2
+ Moderate limitations
+ Major limitations = 4
+ Very major limitations = 5
+ Not classified = 9
<<CodeList>>
EnvironmentalMeasure
+ No measures necessary = 1
+ Reduced soil preparation = 2
+ Reduced soil preparation with harvest reduction = 3
+ Permanent grass cover advised = 4
+ Not classified = 9
<<CodeList>>
OrganicShare
+ Little = 1
+ Moderate = 2
+ High = 3
+ Very high = 4
+ Organic soil = 5
+ Not classified = 9
<<CodeList>>
TextureCode
+ Gravelly sand = 0
+ Medium sand and coarse sand = 1
+ Fine sand = 2
+ Silty sand = 3
+ Silty fine sand = 4
+ Sandy silt and silt = 5
+ Silty, slightly clayey soil (<25% clay fraction) = 6
+ Slightly clayey soil (<25% clay fraction) = 7
+ Silty, medium clayey soil (25-40% clay fraction) and sandy, medium clayey soil (25-40% clay fraction) = 8
+ Stiff clay and very stiff clay = 9
+ Organic soil = T
<<CodeList>>
WaterStorageCapacity
+ Limited water storage capability = 1
+ Medium water storage capability = 2
+ Great water storage capability = 3
+ Very great water storage capability = 4
+ Not classified = 9
<<CodeList>>
DepositType
+ Glacial river deposit = 1
+ Flood deposit (fine sand) = 2
+ Flood slide deposit = 3
+ River deposit = 4
+ Eluvium soil = 5
+ Marine deposit = 6
+ Lake deposit = 7
+ Moraine soil = 8
+ Organic material = 9
+ Levelled soil = 10
+ Slide soil = 11
+ ??Shore/beach deposit = 12
+ ??Aeolian / Wind deposit = 13
+ Fill / filled soil = 14
+ Glacial lake deposit = 15
+ Not classified = 99
<<CodeList>>
TextureGroup
+ Sand = 1
+ Silty sand = 2
+ Silt = 3
+ Slightly clayey soil (<25% clay fraction) = 4
+ Medium clayey soil (25-40% clay fraction) = 5
+ Organic = 6
+ Not classified = 9
<<CodeList>>
DowngradeAlmond
+ Climate = 1
+ Høyt content of gravel, rocks or boulders
+ Vulnerable to drying = 3
+ Soil texture = 4
+ Inclination condition = 5
+ Content of organic material = 6
+ Exposed bedrock or shallow soil = 7
+ Too wet when much precipitation (depending on condition of ditches) = 8
+ Unclassified area = 9
+ Cultivated garbage dump = 10
<<CodeList>>
OtherArea
+ Soil-surveyed = 0
+ Bare bedrock
+ Steep slope = 2
+ Golf course
+ Soil extraction site
+ Marsh
+ ??Rock pile / Boulder field
+ Thin soil cover
+ Farmyard
+ Built-up area
+ Scree
+ Green house area
+ Water = 12
+ Not surveyed
<<CodeList>>
CultivationPotentialAlmond
+ Very suitable = 1
+ Marginal = 2
+ Unsuitable = 3
+ Not classified = 9
<<CodeList>>
ObservationType
+ Shallow ground = 28
+ Exposed bedrock = 29
+ Soil extraction site in operation = 32
+ Mound - ridge-shaped surface = 41
+ High content of boulders
+ Marsh / peat formation = 43
+ Swamping on cultivated ground = 44
+ Source, well = 45
+ Large boulder = 46
<<CodeList>>
LevellingExtent
+ Ungraded/not filled = 0
+ Somewhat graded or filled = 1
+ Heavily graded or filled = 2
+ Graded or filled = 3
+ Not classified = 9

1.2 Description

1.2.1 Soil

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
1	Class Soil	geographic area with approximately uniform soil characteristics				
1.1	extent	area over which an object extends	0	1	SurfaceWithQuality	
1.2	position	location where the object exists	0	1	PointWithQuality	
1.3	mappingPhase	time of mapping. Indicated by season (??Sp=spring, ??Su=summer, A=autumn along with the year in two digits, S05)	0	1	CharacterString	
1.4	mapSheetIndex	official map sheet reference	0	1	CharacterString	
1.5	inclination	inclination class for the soil figure Note: The inclination is measured as a percentage using a rate of climb indicator	0	1	Inclination	
1.6	rockAndBoulder	rock and boulder content given as a map figure average, estimated as the amount in m3 down to a soil depth of ½ metre	0	1	RockAndBoulder	
1.7	bedrockExposure	code for frequency of exposed bedrock. Used when there is exposed bedrock within a delimited expanse of soil Note: Bedrock exposure with a very great distance to the closest one will only be marked as a point observation (cf. SoilObservation).	0	1	BedrockExposure	
1.8	surfaceSupplement	code for supplementary observations	0	1	SurfaceSupplement	
1.9	mapSignature	soil signature including type of soil, inclination, rock and boulder content, as well as supplementary information	0	1	CharacterString	
1.10	soilType	description of the soil conditions within delimited expanses of soil Note: From 1 up to a maximum of 3 types may be given	0	3	SoilType	

		for an expanse of land, depending on the complexity of the area				
1.11	cultivationPotentialGrain	the potential of the area for grain cultivation under the financial and technological framework conditions that apply to current agricultural practices	0	1	CultivationClassification	
1.12	cultivationPotentialPotato		0	1	CultivationClassification	
1.13	cultivationPotentialGrass	the potential of the area for grass cultivation under the financial and technological framework conditions that apply to current agricultural practices	0	1	CultivationClassification	
1.14	cultivationPotentialAlmond	the potential of the area for almond potato cultivation under the financial and technological framework conditions that apply to current agricultural practices	0	1	CultivationPotentialAlmond	
1.15	downgradeAlmond	downgradeAlmond	0	1	DowngradeAlmond	
1.16	erosionRiskAutumnPloughing	potential erosion risk in connection with autumn ploughing	0	1	ErosionRisk	
1.17	erosionRiskGrassCover	potential risk of erosion for permanent grass cover	0	1	ErosionRisk	
1.18	recommendedSoilPreparation	recommended reduced soil preparation as an alternative to autumn ploughing	0	1	RecommendedSoilPreparation	
1.19	environmentalMeasure	measure needed to bring the risk of erosion down to an acceptable level	0	1	EnvironmentalMeasure	
1.20	localSoilResource	category for local soil resources; category for precipitation-based grass cultivation regardless of climate	0	1	LocalSoilResource	
1.21	downgradingLocalSoilResource	the most important cause of any downgrading of category for local soil resources	0	1	DowngradeReason	
1.22	waterStorageCapacity	category for water accessible to plants which can be stored in the soil at depths down to 60 cm	0	1	WaterStorageCapacity	
1.23	organicShare	category for the content of organic material in the ploughed layer	0	1	OrganicShare	
1.2	depositType	category for the type of	0	1	DepositType	

4		deposit in the ploughed layer				
1.25	textureOfPloughedLayer	category for the dominant texture group in the ploughed layer	0	1	TextureGroup	
1.26	levellingExtent	indicates to what extent the ground has been levelled in an area or whether it consists of filled-in material	0	1	LevellingExtent	
1.27	WRBGroup	classification code according to the WRB system (World Referance Base for Soil Resources, 1998)	0	1	WRBGroups	
1.28	Role boundarySoil		0	N	SoilBoundary	
1.29	Role observation		0	N	SoilObservation	

1.2.2 SoilOtherArea

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
2	Class SoilOtherArea	other area than soil. Describes areas where soil surveying has not been carried out				
2.1	extent	area over which an object extends	0	1	SurfaceWithQuality	
2.2	position	location where the object exists	0	1	PointWithQuality	
2.3	otherArea	describes those areas where the soil has not been surveyed	0	1	OtherArea	
2.4	mappingPhase	time of mapping. Indicated by season (??Sp=spring, Su=summer A=autumn, as well as year)	0	1	CharacterString	
2.5	Role boundarySoil		0	N	SoilBoundary	
2.6	Role boundarySoilOtherArea		0	N	SoilOtherAreaBoundary	Aggregration

1.2.3 SoilBoundary

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
3	Class SoilBoundary	the boundary of an expanse of soil				
3.1	border	course following the transition between different real world	1	1	CurveWithQuality	

		phenomena				
3.2	Role (unnamed) SoilOtherArea		0	0	SoilOtherArea	
3.3	Role (unnamed) Soil		1	2	Soil	

1.2.4 SoilObservation

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
4	Class SoilObservation	localisation of a single point observation				
4.1	position	location where the object exists	1	1	PointWithQuality	
4.2	observation	important details limiting the use of the soil Note: The details cannot be delimited as polygons and are therefore shown by special symbols. The symbols show the properties of a small area where they are located (less than 0.05 hectare). It may also ??<truncated>	1	1	ObservationType	
4.3	Role soil		1	1	Soil	

1.2.5 <<DataType>> SoilType

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
5	Datatype SoilType	description of the soil conditions within delimited expanses of soil Note: From 1 up to a maximum of 3 soil types may be given for an expanse of land, depending on the complexity of the area				
5.1	series1	indicates the most important series	1	1	CharacterString	
5.2	texture1	indicates the most important texture code	1	1	TextureCode	
5.3	series2		0	1	CharacterString	
5.4	textur2		0	1	TextureCode	
5.5	series3		0	1	CharacterString	
5.6	textur3		0	1	TextureCode	

1.2.6 SoilOtherAreaBoundary

No	Name/	Description	Obligation/	Maximum	Type	Constraint

	Role name		Condition	Occurrence		
6	Class SoilOtherAreaBoundary	demarcation of other soil area				
6.1	border	course following the transition between different real world phenomena	1	1	CurveWithQuality	
6.2	Role (unnamed) SoilOtherArea		1	2	SoilOtherArea	

1.2.7 <<DataType>> CultivationClassification

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
7	Datatype CultivationClassification	the potential of the area for cultivation of certain crops under the financial and technological framework conditions that apply to current agricultural practices				
7.1	irrigationBased	potential for cultivation by means of artificial irrigation	0	1	IrrigationBased	
7.2	downgradePrecipitation		0	1	DowngradePrecipitation	
7.3	downgradeIrrigation	the most important cause of any downgrading of suitability for irrigation-based cultivation	0	1	DowngradeIrrigation	

1.2.8 Association <<Topo>> SoilOtherArea-SoilBoundary

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
8	Association SoilOtherArea-SoilBoundary					
8.1	Role boundarySoil		0	N	SoilBoundary	
8.2	Role (unnamed) SoilOtherArea		0	0	SoilOtherArea	

1.2.9 Association <<Topo>> Soil-SoilBoundary

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
9	Association Soil-SoilBoundary					
9.1	Role		0	N	SoilBoundary	

	boundarySoil					
9.2	Role (unnamed) Soil		1	2	Soil	

1.2.10 Association <<Topo>> SoilOtherArea-SoilOtherAreaBoundary

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
10	Association SoilOtherArea-SoilOtherAreaBoundary					
10.1	Role boundarySoilOtherArea		0	N	SoilOtherAreaBoundary	Aggregation
10.2	Role (unnamed) SoilOtherArea		1	2	SoilOtherArea	

1.2.11 Association Soil-SoilObservation

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
11	Association Soil-SoilObservation					
11.1	Role observation		0	N	SoilObservation	
11.2	Role soil		1	1	Soil	

1.2.11.1

1.2.11.2 <<CodeList>> RecommendedSoilPreparation

Nr	Code name	Definition/Description	Code
1	CodeList RecommendedSoilPreparation	recommended reduced soil preparation as an alternative to autumn ploughing	
1.1	DS/SpH/AH/SpP	FF-Direct sowing/spring harrowing/autumn harrowing/spring ploughing	1
1.2	DS/SpH/AH	FF-Direct sowing/spring harrowing/autumn harrowing	2
1.3	DS/AH	FF-Direct sowing/autumn harrowing	3
1.4	DS + SL/AH/SpP	FF-Direct sowing + subsoil loosening/autumn harrowing/spring ploughing	4
1.5	DS + SL/AH	FF-Direct sowing + subsoil loosening/autumn harrowing	5
1.6	SpH/SpP/AH	FF-Spring harrowing/spring ploughing/autumn harrowing	6
1.7	SpH/AH	FF-Spring harrowing/autumn harrowing	7
1.8	SpP	FF-Spring ploughing	8
1.9	AH	FF-Autumn harrowing	9
1.10	AP	FF-Autumn ploughing	10
1.11	Not classified		99

1.2.11.3 <<CodeList>> OtherArea

Nr	Code name	Definition/Description	Code
2	CodeList OtherArea	describes those areas where the soil has not been surveyed	
2.1	Soil-surveyed		0
2.2	Bare bedrock	at least 50% of the area is exposed bedrock and less than 10% of the area has soil deeper than 25cm	
2.3	Steep slope	minimum 33% inclination of different soils	2
2.4	Golf course	golf courses in reallocated agricultural areas and other areas that can fairly easily be put to use as agricultural areas	
2.5	Soil extraction site	areas where extraction of rock or soil (sand, gravel, peat, clay, blast material, etc.) is taking place	
2.6	Marsh	areas that are not farmland and that have the appearance of marsh in the aerial photograph	
2.7	??Rock pile / Boulder field	areas with all types of stone fences/piles?? erected in connection with cultivation	
2.8	Thin soil cover	at least 50% of the area has soil less than 25 cm deep and less than 10% of the area has soil deeper than 50 cm	
2.9	Farmyard	areas which function and have the characteristics of farmyards, including farmhouses and smaller cottages, all types of outbuildings and all types of driving, use, ornamental and lawn	

		areas (not including greenhouse areas)	
2.10	Built-up area	areas used for transport/traffic, residences, industry, sports facilities, etc. Brukes kun på bebygde arealer som utgjør holmer i jordbruksarealene og jordbruksarealer som er utbygd etter at flybildene ble tatt.	
2.11	Scree	large boulders and stony soil deposited at the foot of slopes as a result of gravity. In use only in areas constituting islets or parts of islets in agricultural areas	
2.12	Green house area	areas used for hothouses/greenhouses, benches, etc. preventing or making soil surveying very difficult	
2.13	Water	FF-sea, lakes, pools, ponds, rivers, streams, channels, etc. The code is added to (artificial) hydrology carried out after the photographing	12
2.14	Not surveyed	areas where the soil is not surveyed, nor are other codes for other areas indicated. The code is used for most areas surrounding the agricultural areas	

1.2.11.4 <<CodeList>> DepositType

Nr	Code name	Definition/Description	Code
3	CodeList DepositType	category for the type of deposit in the ploughed layer	
3.1	Glacial river deposit		1
3.2	Flood deposit (fine sand)		2
3.3	Flood slide deposit		3
3.4	River deposit		4
3.5	Eluvium soil		5
3.6	Marine deposit		6
3.7	Lake deposit		7
3.8	Moraine soil		8
3.9	Organic material		9
3.10	Levelled soil		10
3.11	Slide soil		11
3.12	??Shore/beach deposit		12
3.13	??Aeolian / Wind deposit		13
3.14	Fill / filled soil		14
3.15	Glacial lake deposit		15
3.16	Not classified		99

1.2.11.5 <<CodeList>> CultivationClass

Nr	Code name	Definition/Description	Code
4	CodeList CultivationClass	cultivation potential	
4.1	Highly suitable	No cultivation ??limitations/restrictions registered	1
4.2	Very suitable	Minor cultivation limitations registered	2
4.3	Suitable	Moderate cultivation limitations registered	3
4.4	Poorly suited	Major cultivation limitations registered	4
4.5	Unsuitable	Very severe cultivation limitations registered	5
4.6	Not classified		9

1.2.11.6 <<CodeList>> ErosionRisk

Nr	Code name	Definition/Description	Code
5	CodeList ErosionRisk	indication of potential erosion risk	
5.1	Low risk of erosion		1
5.2	Moderate risk of erosion		2
5.3	High risk of erosion		3
5.4	Very high risk of erosion		4
5.5	Not classified		9

1.2.11.7 <<CodeList>> BedrockExposure

Nr	Code name	Definition/Description	Code
6	CodeList BedrockExposure	code for frequency of exposed bedrock. Used when there is exposed bedrock within a delimited expanse of soil Note: Bedrock exposure with a very great distance to the closest one will only be marked as a point observation (cf. SoilObservation)	
6.1	0 %	FF-No share of exposed rocks	0
6.2	>0-0.1 %	FF->0-0.1% share of exposed rocks	1
6.3	0.1-2 %	FF-0.1-2% share of exposed rocks	2
6.4	2-5 %	FF-2-5% share of exposed rocks	3
6.5	5-10 %	FF-5-10% share of exposed rocks	4
6.6	10-25 %	FF-10-25% share of exposed rocks	5
6.7	25-50 %	FF-25-50% share of exposed rocks	6
6.8	Not registered	FF-Not registered	9

1.2.11.8 <<CodeList>> SurfaceSupplement

Nr	Code name	Definition/Description	Code
7	CodeList SurfaceSupplement	code for supplementary observations	
7.1	No other important attributes		0
7.2	Grading	FF-Soil which has been levelled somewhat, such as levelling of hillocks. The original soil should cover at least 50-70% of the area. Also used for areas that have been levelled so long ago that the soil is starting to show signs of ordinary ??<truncated>	1
7.3	Salt precipitation on surface	FF-Salts have precipitated on the surface due to a high degree of evaporation of nutrient-laden water. Used in areas with little summer precipitation (such as Ottadalen).	2
7.4	Humpy and uneven surface	FF-Used for areas with small hills and uneven surface which do not appear from the inclination code in the figure.	3
7.5	Shallow variant	FF-Used when there are only smaller areas with shallower soil than normal for the type(s) of soil in the figure where the type(s) of soil occur(s).	4
7.6	Anthropogenic variant	FF-Area that shows signs of human activity in the form of bricks, nails, etc.	5
7.7	Not registered		9

1.2.11.9 <<CodeList>> Inclination

Nr	Code name	Definition/Description	Code
8	CodeList Inclination	inclination class of the soil figure Note: The inclination is measured as a percentage using a rate of climb indicator.	
8.1	0-2 %	FF-0-2% inclination	1
8.2	1-4 %	FF-1-4% inclination	2
8.3	2-6 %	FF-2-6% inclination	3
8.4	4-8 %	FF-4-8% inclination	4
8.5	6-12 %	FF-6-12% inclination	5
8.6	9-15 %	FF-9-15% inclination	6
8.7	12-20 %	FF-12-20% inclination	7
8.8	18-22 %	FF-18-22% inclination	8
8.9	20-25 %	FF-20-25% inclination	9
8.10	20-30 %	FF-20-30% inclination	10
8.11	25-33 %	FF-25-33% inclination	11
8.12	31-35 %	FF-31-35% inclination	12
8.13	33-40 %	FF-33-40% inclination	13

8.14	33-50 %	FF-33-50% inclination	14
8.15	40-50 %	FF-40-50 % inclination	15
8.16	>50 %	FF->50% inclination	16
8.17	Not registered		99

1.2.11.10 <<CodeList>> LocalSoilResource

Nr	Code name	Definition/Description	Code
9	CodeList LocalSoilResource	category for local soil resources, category for precipitation-based grass cultivation regardless of climate	
9.1	No limitations	No limitations for precipitation-based grass cultivation	1
9.2	Small limitations	Minor limitations for precipitation-based grass cultivation	2
9.3	Moderate limitations	Moderate begrensninger for nedbørsbasert grasdyrking	
9.4	Major limitations	Store begrensninger for nedbørsbasert grasdyrking	4
9.5	Very major limitations	Very severe limitations for precipitation-based grass cultivation	5
9.6	Not classified		9

1.2.11.11 <<CodeList>> EnvironmentalMeasure

Nr	Code name	Definition/Description	Code
10	CodeList EnvironmentalMeasure	measure needed to bring the risk of erosion down to an acceptable level	
10.1	No measures necessary		1
10.2	Reduced soil preparation		2
10.3	Reduced soil preparation with harvest reduction		3
10.4	Permanent grass cover advised		4
10.5	Not classified		9

1.2.11.12 <<CodeList>> DowngradeReason

Nr	Code name	Definition/Description	Code
11	CodeList DowngradeReason	the cause of any downgrading of suitability for cultivation Note: Used for areas in cultivation class 3-5	
11.1	Climate		1
11.2	High content of gravel, rocks or boulders		2
11.3	Vulnerable to drying		3

11.4	Other soil limitations		4
11.5	Inclination condition		5
11.6	Organic soil with poor load carrying capacity		6
11.7	Exposed bedrock or bedrock with shallow cover		7
11.8	Unclassified area		9

1.2.11.13 <<CodeList>> ObservationType

Nr	Code name	Definition/Description	Code
12	CodeList ObservationType	important details limiting the use of the soil Note: The details cannot be delimited as polygons and are therefore shown by special symbols. The symbols show the properties of a small area where they are located (less than 0.05 hectare). It may also be ??<truncated>	
12.1	Shallow ground		28
12.2	Exposed bedrock		29
12.3	Soil extraction site in operation		32
12.4	Mound - ridge-shaped surface		41
12.5	High content of boulders		
12.6	Marsh / peat formation		43
12.7	Swamping on cultivated ground		44
12.8	Source, well		45
12.9	Large boulder		46

1.2.11.14 <<CodeList>> OrganicShare

Nr	Code name	Definition/Description	Code
13	CodeList OrganicShare	category for the content of organic material in the ploughed layer	
13.1	Little	< 3% organisk materiale	1
13.2	Moderate	3 - 6 % organisk materiale	2
13.3	High	6 - 12 % organisk materiale	3
13.4	Very high	12 -20 % organisk materiale	4
13.5	Organic soil	> 20 % organisk materiale	5
13.6	Not classified		9

1.2.11.15 <<CodeList>> LevellingExtent

Nr	Code name	Definition/Description	Code
14	CodeList LevellingExtent	indicates to what extent the ground has been levelled in an area or whether it consists of filled-in material	
14.1	Ungraded/not filled		0
14.2	Somewhat graded or filled		1
14.3	Heavily graded or filled		2
14.4	Graded or filled		3
14.5	Not classified		9

1.2.11.16 <<CodeList>> RockAndBoulder

Nr	Code name	Definition/Description	Code
15	CodeList RockAndBoulder	rock and boulder content given as a map figure average, estimated as the amount in m3 down to a soil depth of ½ metre	
15.1	Completely free of rocks	0 stein/blokker pr kub. m.	0
15.2	Free of rocks and boulders	0-0,5 stein/blokker pr kub. m.	1
15.3	Contains a few rocks and boulders	0,5-10 stein/blokker pr kub. m.	
15.4	Moderately abundant in rocks and boulders		4
15.5	Contains rocks and boulders	10-25 stein/blokker pr kub. m.	
15.6	Abundant in rocks and boulders	50-100 stein/blokker pr kub. m.	5
15.7	Very abundant in rocks and boulders	100-200 stein/blokker pr kub. m.	6
15.8	Rock and boulder land	>200 stein/blokker pr kub. m.	7
15.9	Not registered		9

1.2.11.17 <<CodeList>> TextureGroup

Nr	Code name	Definition/Description	Code
16	CodeList TextureGroup	category for the dominant texture group in the ploughed layer	
16.1	Sand		1
16.2	Silty sand		2
16.3	Silt		3
16.4	Slightly clayey soil (<25% clay fraction)		4

16.5	Medium clayey soil (25-40% clay fraction)		5
16.6	Organic		6
16.7	Not classified		9

1.2.11.18 <<CodeList>> WaterStorageCapacity

Nr	Code name	Definition/Description	Code
17	CodeList WaterStorageCapacity	category for water accessible to plants which can be stored in the soil at depths down to 60 cm	
17.1	Limited water storage capability	very prone to drying, <50 mm of plant-accessible water down to 60 cm depth	1
17.2	Medium water storage capability	prone to drying, between 50 and 90 mm of plant-accessible water down to 60 cm depth	2
17.3	Great water storage capability	not prone to drying, between 90 and 130 mm of plant-accessible water down to 60 cm depth	3
17.4	Very great water storage capability	very resistent to drying, >=130 mm of plant-accessible water down to 60 cm depth	4
17.5	Not classified		9

1.2.11.19 <<CodeList>> WRBGroups

Nr	Code name	Definition/Description	Code
18	CodeList WRBGroups	classification code according to the WRB system (World Referance Base for Soil Resources, 1998)	
18.1	Albeluvisol	soil with a light layer which filters down to a clay-enriched layer	AB
18.2	Arenosol	deep soil consisting of self-drained, sorted sand	AR
18.3	Antrosol	soil with a light layer which filters down to a clay-enriched layer	AT
18.4	Cambisol	young soil with weakly developed soil structure	CM
18.5	Cryosol	soil with permafrost within 1m	CR
18.6	Fluvisol	young soil formed in material that has been deposited in running water (rivers and streams)	FL
18.7	Gleysol	groundwater-affected soil with poor soil formation	GL
18.8	Histosol	organic soil more than 40 cm thick	HS
18.9	Leptosol	very shallow soil with high content of gravel and pebbles or highly calcareous (shell sand)	LP
18.10	Luvisol	soil with clay-enriched layer	LV
18.11	Phaeosem	nutrient-rich soil with a dark layer of topsoil	PH
18.12	Podzol	acidic soil with rust red to black precipitation layer	PZ
18.13	Regosol	soil with very limited stratification	RG
18.14	Cultivated filling/filled soil	soil which has been exposed to ground levelling or digging/man-made soil mainly consisting of landfill material	RGah
18.15	Umbrisol	oligotrophic soil with a dark layer of topsoil	UM

1.2.11.20 <<CodeList>> CultivationPotentialAlmond

Nr	Code name	Definition/Description	Code
19	CodeList CultivationPotentialAlmond	the potential of the area for almond potato cultivation under the financial and technological framework conditions that apply to current agricultural practices	
19.1	Very suitable	area which meets the requirements for cultivation of almond potatoes	1
19.2	Marginal	areas which do not satisfy all the requirements related to the cultivation of almond potatoes, but where cultivation may still take place (local assessment)	2
19.3	Unsuitable	area which does not meet the requirements for cultivation of almond potatoes	3
19.4	Not classified		9

1.2.11.21 <<CodeList>> DowngradeAlmond

Nr	Code name	Definition/Description	Code
20	CodeList DowngradeAlmond	predominant cause of the downgrading of an areaXzXs suitability for cultivation of almond potatoes	
20.1	Climate		1
20.2	Høyt content of gravel, rocks or boulders		
20.3	Vulnerable to drying		3
20.4	Soil texture		4
20.5	Inclination condition		5
20.6	Content of organic material		6
20.7	Exposed bedrock or shallow soil		7
20.8	Too wet when much precipitation (depending on condition of ditches)		8
20.9	Unclassified area		9
20.10	Cultivated garbage dump		10

1.2.11.22 <<CodeList>> TextureCode

Nr	Code name	Definition/Description	Code
21	CodeList TextureCode	code for the grain size in the topsoil layer	
21.1	Gravelly sand		0
21.2	Medium sand and coarse sand		1
21.3	Fine sand		2

21.4	Silty sand		3
21.5	Silty fine sand		4
21.6	Sandy silt and silt		5
21.7	Silty, slightly clayey soil (<25% clay fraction)		6
21.8	Slightly clayey soil (<25% clay fraction)		7
21.9	Silty, medium clayey soil (25-40% clay fraction) and sandy, medium clayey soil (25-40% clay fraction)		8
21.10	Stiff clay and very stiff clay		9
21.11	Organic soil		T