

## Soil Protection Working Group

Mandate 2019-2020

### Cooperation with the JRC

regarding the Soil Conservation Protocol Articles 20 and 21: Harmonized  
Databases and Soil Monitoring

#### Introduction

The Working Group on Soil Protection is mandated to facilitate the implementation of the Articles 20 (establishment of harmonized databases) and 21 (establishment of permanent monitoring areas and coordination of environmental monitoring) of the Soil Conservation Protocol of the Alpine Convention, which is also part of the EU law. These Articles read as follows:

#### **Article 20: Establishment of Harmonised Databases**

- (1) The Contracting Parties agree to create comparable databases (soil parameters, sampling, analysis, evaluation) within the framework of the Alpine monitoring and information system, and to establish possibilities for data exchange.
- (2) The Contracting Parties shall reach agreement about soil-endangering substances which require priority treatment, and they shall strive for comparable evaluation parameters.
- (3) The Contracting Parties shall strive to establish representative records of the condition of Alpine soils taking into account the geological and hydrogeological situation, on the basis of identical evaluation systems and harmonised methods.

#### **Article 21: Establishment of Permanent Monitoring Areas and Coordination of Environmental Monitoring**

- (1) The Contracting Parties undertake to establish permanent monitoring areas in the Alpine region and to integrate them in an Alpine-wide soil monitoring network.
- (2) The Contracting Parties agree to coordinate their national soil monitoring programmes with the environmental monitoring programmes for air, water, flora and fauna.
- (3) Within the framework of their monitoring programmes, the Contracting Parties shall establish soil sample databases according to comparable parameters.

## Background

A broad discussion regarding the facilitation of the implementation of Article 20 of the Soil Conservation Protocol took place during the 2<sup>nd</sup> meeting of the Soil Protection Working Group on 16 – 17 October 2019 in Innsbruck. There was a consensus that this is a difficult issue, which has been discussed for many years. For example in 1994 the subgroup on “Permanent soil monitoring sites” of the joint working group on soil protection of the Regional Working Communities Arge Alp, Arge Alpen-Adria and Arge Donauländer had prepared a report in German language on permanent soil monitoring sites including a concrete recommendation to set up sites and monitor them in a coordinated way. These recommendations were applied in several cases, but they were not implemented in all regions participating in the process and the implementation was not comprehensively coordinated. Beyond that co-operations regarding joint monitoring leading to a harmonized dataset between some Countries during a certain timeframe on specific issues had already been successfully undertaken, such as the Interreg Alpine Space project “MonarPOP - MOnitoring Network in the Alpine Region for Persistent and other Organic Pollutants” (2005 – 2007 and continued until 2010) by Austria, Germany, Italy, Slovenia and Switzerland. During the meeting of the Working Group the question was raised as well for whom and for which purposes which kind of Alpine-wide harmonized data would be needed.

However, to establish one standardized national soil monitoring system is challenging and could not be achieved in every State. Thus, not every State has a national or regional monitoring system in place. This applies also to the Alpine area and to the whole European Union, which is why the European soil survey LUCAS Soil has been established in 2006. LUCAS Soil is a database comprising comparable data covering the major parts of the Alpine area. During the Soil Protection Working Group’s 3<sup>rd</sup> meeting it was decided that LUCAS Soil should be considered or even play a significant role. The LUCAS Soil surveys have already collected harmonized soil data on a European scale and will continue this process in the future. Consequently, a contact with the responsible institution, the Joint Research Centre (JRC) of the European Commission has been established and representatives of the JRC actively participated in the 4<sup>th</sup> meeting of the Soil Protection Working Group.

LUCAS Soil was developed for the purpose of generating harmonized and thus comparable soil data for the EU, because the availability of soil data in the Member States and in their regions was very heterogeneous and the available soil data were not comparable and thus could not be harmonized. Such harmonised soil data is necessary for meeting policy needs of the EU and the Member States concerning nature protection, climate change and agricultural

matters for example. Soil data are currently becoming even more important in light of the European Green Deal (EU Biodiversity Strategy, Zero Pollution Strategy, Farm2Fork Strategy, Circular Economy, EU Climate Law) and for reporting on the SDG indicators.

While Eurostat coordinates the LUCAS Soil surveys, the implementation and development is done by the JRC. The soil surveys were continuously further developed, enlarging the extent and number of sample sites as well as the parameters covered from the first survey in 2006, to the replications in 2009, 2012, 2015 and 2018. As the sampling interval has been extended to taking place every 4 years, the next survey will be done in 2022. For the Alpine area, the surveys from 2015 onwards are most relevant, since also sites on a higher elevation than 1.000 m above sea level were covered and additionally, Switzerland was included in the survey. Liechtenstein and Monaco are not participating in the LUCAS soil program.

## **Roadmap for cooperation**

### ***1. Establishing an exchange, 21 and 22 July 2020***

The aim of the exchange about LUCAS Soil during the 4<sup>th</sup> meeting of the Soil Protection Working Group was to investigate how the program could be integrated with initiatives of the Contracting Parties of the Alpine Convention. The JRC representatives expressed to be open for further increasing collaboration with the Alpine Convention and with the single Member States. Good bilateral cooperation already exists between the JRC and Alpine States, e.g. with Switzerland since the survey in 2015, where the LUCAS results were comparable with the Swiss national soil monitoring. In addition, the good cooperation with Austria was highlighted, where currently the project LUCASSA is running, in which duplicate samples are taken and analyzed in Austria to compare the results with the LUCAS Soil data. Also, Germany is planning a cooperation project.

### ***2. Data and information from JRC on soil monitoring in the AC perimeter and further topics, August 2020***

As next step, it is important to identify which soil sampling sites in the perimeter of the Alpine Convention were included in the LUCAS soil surveys 2015 and 2018 and which parameters were analyzed. Furthermore, the planned sampling sites and the planned parameters currently foreseen for the next survey in 2022 should be made known in order to be able to comment on them. Some information regarding this question has already been delivered by the JRC.

In addition, the JRC could give feedback to the report “Economical use of soil in the Alps” developed by the Soil Protection Working Group. Furthermore, finalized maps and finalized

LUCAS soil data from the European Soil Data Centre (ESDAC) can be used freely for Alpine Convention purposes, e.g. it can be fed into the System for the Observation and Information on the Alps (SOIA).

### ***3. Further exchange, September and October 2020***

An important question is whether LUCAS Soil covers the condition of Alpine soils taking into account the geological and hydrogeological situation in a representative way (Art. 20 para 3 Soil Conservation Protocol). The sampling locations delivered by the JRC should be evaluated regarding the representativeness for the Alpine area.

Currently the next LUCAS Soil survey is being prepared for the sampling phase from March to September 2022. While the first part of the surveys is always based on photointerpretation, the soil sampling will be increased from 25.000 to 41.000 points. The samples will also be taken from deeper horizons (down to 30 cm) and it is foreseen to expand the research on soil biodiversity, sulphur and more cations as well as to research heavy metals again more extensively. While carbon content and organic soils were already a topic in the 2018 survey, a soil carbon indicator is currently further developed for reporting e.g. for the new CAP and the SDG target 15.3.

Since the next survey is currently being prepared, a unique possibility (“window of opportunity”) exists to propose differing and additional sampling locations in the Alpine area to reach a representative coverage of the soils in the Alps. By January 2021, the locations of the sampling sites need to be decided. The focus of new sampling sites will be on cultivated areas. Pastureland is currently under-represented and could thus be put into focus for proposing additional sites, while for forest areas the attempt is to collaborate with the ICP forest program to reach an improved coverage of this land class. The definition of parameters planned to be measured can also be finalized a little later. A possible question could be, whether soil-endangering substances, which require priority treatment and shall be monitored by using comparable evaluation parameters are included (Art. 20 para 2 Soil Conservation Protocol). It could also be explored, if parameters, which are especially important for the Alpine area, are missing.

The Soil Protection Working Group will furthermore discuss the LUCASSA project.

### ***4. Possible cooperation from 2021 on***

The Alpine Convention, the Contracting Parties and the JRC could further develop which ways of complementing each other might be envisaged in order to reach the objective of

establishing a harmonized soil database based on regular monitoring, which is representative for the Alpine area. On the basis of a joint cooperation agreement the options might comprise:

- LUCAS Soil data could be used for the purposes of the Alpine Convention.
- Are data missing in LUCAS Soil and could these data be made available from the national or regional level to close gaps, which the Alpine Convention has identified for the Alpine area?
- The JRC could offer the service, that LUCAS Soil surveyors could also collect additional soil samples for Contracting Parties, to be analyzed in the laboratories of the respective State.
- Contracting Parties participating in the Soil Protection Working Group, might be able to help regarding accessibility of sampling sites, since they could have better ways for contacting e.g. landowners regarding the process of taking soil samples.
- For improving the validity of European soil data, regarding soil health, erosion, contamination etc., the JRC is working on approaches for collaborating with agencies of Member States and on approaches for being enabled to take other systems into consideration, which are relevant for land monitoring (e.g. agricultural practices). The Soil Protection Working Group might be able to facilitate establishing contacts for this purpose or to give input regarding existing land monitoring/management systems of relevance for the status of soils in the Alps.

## **Conclusions**

- The existing Soil Protection Working Group has established contacts with the JRC, has held a first exchange of views and reflected on a longer-term cooperation.
- The Soil Protection Working Group proposes that during its mandate 2021-2022 the framework conditions for closer and long-term cooperation between the relevant national experts of the Alpine countries and the JRC are defined.
- On the basis of these framework conditions a joint cooperation agreement could be concluded between the Contracting Parties of the Alpine Convention and the JRC to facilitate the further implementation of Articles 20 and 21 of the Soil Conservation Protocol.