

Memorandum of cooperation between the Ministry of Ecology and Natural Resources of Ukraine and the Space Research Institute of the National Academy of the Sciences of Ukraine and the State Space Agency of Ukraine

Kyiv

07. March 2018

Ministry of Ecology and Natural Resources of Ukraine (hereinafter - **MENR**), in the person of Deputy Minister **Mykola Kuzio**, that acts on the basis of a statute approved by a resolution of the Cabinet of Ministers of Ukraine from 01/21/2015 No. 32, on the one hand, and Space Research Institute of the National Academy of Sciences of Ukraine and the State Space Agency of Ukraine (hereinafter – **SRI NASU-SSAU**), in the person of Director **Oleg Fedorov**, acting on the basis of the statute of the Institute of Space Research of the National Academy of Sciences of Ukraine and the State Space Agency of Ukraine, approved by the decree of the Presidium of NAS of Ukraine from 28/02/2017 No. 155, on the other hand, hereinafter jointly referred to as the - **Parties**, and separately the **Party**, with a view to ensuring proper implementation by Ukraine of its obligations under international treaties, have concluded this Memorandum of Cooperation (hereinafter referred to as the **Memorandum**).

TAKING INTO ACCOUNT, that Ukraine is a party to:

(i) [United Nations Framework Convention on Climate Change ratified by the Verkhovna Rada of Ukraine 10/29/1996 No. 435/96-VR;](#)

(ii) [The Kyoto Protocol to the United Nations Framework Convention on Climate Change, ratified by the Verkhovna Rada of Ukraine by the Law of Ukraine of 04.02.2004 No. 1430-IV;](#)

(iii) [The Paris Agreement ratified by the Verkhovna Rada of Ukraine by the Law of Ukraine of 14.07.2016 No. 1469-VIII;](#)

(iv) [The UNITED NATIONS CONVENTION TO COMBAT DESERTIFICATION IN THOSE COUNTRIES EXPERIENCING SERIOUS DROUGHT AND/OR DESERTIFICATION, PARTICULARLY IN AFRICA \(according to the Law of Ukraine of 04.07.2002 No. 61-IV on Accession to the UNCCD\);](#)

and shall for their implementation:

(i) monitor of land and soil, land use and land use change;

(ii) annually prepare assessments of the development of land degradation processes and desertification, changes in land use on the territory of the country;

(iii) regularly provide the secretariats of the above-mentioned international treaties with relevant reporting information;

CONSIDERING, that the **MENR** is the state body responsible in Ukraine for the implementation of these international agreements, and **SRI NASU-SSAU** is the leading state scientific organization of Ukraine, which is responsible for carrying out applied and fundamental research in the field of satellite data use and has considerable experience in performing researches in accordance with the requirements of international standards;

NOTING, the common interest and willingness to cooperate with a view to the effective use of modern remote sensing technologies for the implementation by Ukraine of international information obligations and other public tasks;

The Parties have agreed as follows:

1. General provisions

1.1. This Memorandum is a document on the basis of which the Parties will coordinate their actions to achieve the objectives of this Memorandum.

1.2. The Parties intend to provide each other within their competence with comprehensive support to develop cooperation in accordance with the provisions of this Agreement and to inform each other about the measures aimed at its development.

1.3. In the process of achieving common goals, the Parties will build their relationships on the principles of partnership and create a regime of maximum facilitation and assurance of transparency and openness of their activities.

1.4. This Memorandum directed to implementation by Ukraine its obligations under international treaties and cannot, in any way, contradict the obligations of the Parties within the framework of existing international and other treaties of the Parties, as well as the legislation of Ukraine.

2. The main areas of cooperation

2.1. The parties to the Memorandum agree to promote cooperation, which will include the following directions:

2.1.1. receiving, processing and analysis of data of satellite data on observations of surface for territory of Ukraine;

2.1.2. development of the relevant information products (land cover maps, land use, land use changes, land productivity, prevalence of land degradation and desertification processes and etc.);

2.1.3. fulfillment of Ukraine's obligations as a party to international treaties, on provision of the reporting information to the secretariats of international treaties;

2.1.4. organization and conduct of joint public events on actual issues;

2.1.5. other agreed cooperation areas.

2.2. The Parties agree that directions and activities aimed at achieving the purpose of this Memorandum will be regularly agreed in accordance with the legislation of Ukraine, including the policy on the purpose of this Memorandum, following consultations and negotiations between the Parties.

3. Organization of cooperation

3.1. In order to implement this Memorandum, the Parties, within available resources, will:

3.1.1. identify authorized persons for consultations and development proposals on the joint implementation of tasks and activities, aimed at achieving the purpose of this Memorandum;

3.1.2. conduct joint events (working meetings, conference, etc.) to discuss issues related to the implementation of activities within the framework of cooperation;

3.1.3. develop and approve joint action plans;

3.1.4. carry out within their competence exchange of relevant information on the initiative or at the request of one of the Parties;

3.1.5. to implement the annual processing by SRI NASU-SSAU data on satellite observations over the territory of Ukraine and to provide relevant information products (land cover maps, land productivity, prevalence of land degradation and desertification, procedures etc.), the Parties will endeavor to find sources of funding for these activities on an ongoing basis through national programs and projects of research and development, international grants;

3.2. The Parties agree that all information exchanged by the Parties within the framework of cooperation and implementation of this Agreement is confidential and is not subject to disclosure, except cases provided by the legislation of Ukraine. Each Party shall ensure the confidentiality of information received from the other Party. Information received under this Memorandum will not be transferred to third parties without the written consent of the Party that provided this information.

3.3. In order to implement this Memorandum **MENR**:

3.3.1. plans to include SRI NASU-SSAU as part into national system for estimating of anthropogenic emissions and removals of greenhouse gases not controlled by the Montreal Protocol on Substances that Deplete the Ozone Layer;

3.3.2. necessarily indicates the copyright SRI NASU-SSAU and its staff in all domestic and international publications, national reports to the secretariats of international agreements, where provided maps and materials will be used;

3.3.3. involves SRI NASU-SSAU and its employees in domestic and international events and projects of the Ministry of Environment, connected with the monitoring of the surface of the territory of Ukraine;

3.3.4. informs SRI NASU-SSAU on international projects in the relevant area;

3.3.5. involves staff of SRI NASU-SSAU to training events in the interpretation of satellite images and production of maps.

3.4. In order to implement this Memorandum **SRI NASU-SSAU**:

3.4.1. Agrees to the inclusion of SRI NASU-SSAU into national system for estimating of anthropogenic emissions and removals of greenhouse gases not controlled by the Montreal Protocol on Substances that Deplete the Ozone Layer;

3.4.2. annually provides the MENR available data of satellite observations of the surface of Ukraine (land cover maps, land productivity, prevalence of land degradation processes and desertification etc.) for the reporting period in accordance with the technical conditions and requirements specified in Annexes 1 and 2 to this Memorandum and accompanying methodological materials;

3.4.3. shall provide the MENR assistance in interpreting and validation of satellite data on surface observations of the territory of Ukraine, including those received by the MENR from other sources;

3.4.4. provide the Ministry of Environment changes, corrections and specifications in the previously produced maps;

3.4.5. involves the MENR to the discussion of thematic plans and programs of scientific research;

3.4.6. involves staff of the MENR to training events in the interpretation of satellite images and formation of maps.

4. Term of the Memorandum

4.1. This Memorandum shall enter into force from the moment it is signed by the Parties.

4.2. This Memorandum is concluded on an indefinite term.

4.3. This Memorandum can be terminated before of expiry of schedule by mutual consent of the Parties.

4.4. Each of the Party has the right to terminate this Memorandum unilaterally by notifying the other Party in writing 30 calendar days in advance.

4.5. In the event of termination of this Memorandum, the actions that have been initiated on the basis of this Memorandum and not completed during the term of its action, shall be continued and finished according to the conditions that were previously agreed by the Parties, except in the case when it is impossible to complete these actions.

5. Other provisions

5.1. Any amendments or changes to this Memorandum must be agreed by the Parties in writing and will be deemed valid after signing by the authorized representatives of the Parties, after which they become an integral part of this Memorandum.

5.2. Any disputes concerning the interpretation or application of the provisions of this Memorandum shall be settled by the Parties through negotiations and mutual agreement.

5.3. This Memorandum is signed in two copies, one copy for each Party having equal legal force.

In witness thereof, the authorized permanent representatives of the Parties put personal signatures under this Memorandum. The date of the Memorandum is indicated under the corresponding signatures.

On behalf of
MENR:
Deputy Minister for
European Integration
Mykola KUZIO

On behalf of
SRI NASU-SSAU:
Director
Oleg FEDOROV

(signature)

date

07 March 2018

(signature)

date

07 March 2018

Annex 1 to the Memorandum

Technical conditions of interaction between MENR and SRI NASU-SSAU

<i>condition clause</i>	<i>description of conditions</i>
Requirements for input data	open free current and archival remote sensing data (multispectral and optical images) of the territory of Ukraine, aerial photography, open raster and vector data of state and international sources, open surface research
Method of transfer data or accessing data	FTP site access for designated persons (login and password)
Requirements for annual data and content	maps of the surface coverage of Ukraine as of 31.12.XXXX-2 years of the reporting year and the year before the reporting(current - 2 and current - 3) data in the current year are provided for the reporting year, year before the reporting, the transition matrix
Requirements to archive of output data	maps covering the surface of the territory of Ukraine 1990, 2000, 2010
Contents of archive data	maps covering the surface of the territory of Ukraine as of 1990, 2000, 2010
Projection	it is desirable to correspond to the units of surface areas of Ukraine as much as possible
data formats	raster (format Geo TIFF)(http://trac.osgeo.org/geotiff/) and vector (SHP format)(https://www.esri.com/library/whitepapers/pdfs/shapefile.pdf) formats geoinformation spatial data
Metadata	should be similar as much as possible to the international standards of metainformation to spatial data Specification implementation of meta data ISO 19139 (ISO 19139Metadata Implementation Specification) (https://www.iso.org/standard/32557.html) and <u>INSPIRE Metadata Implementing Rules Technical Guidelines: Highlight of key changes between version 1.2 and version 1.3</u> https://inspire.ec.europa.eu/documents/inspire-metadata-implementing-rules-technical-guidelines-highlight-key-changes-between
Period of submission of	every year on January 30

<i>condition clause</i>	<i>description of conditions</i>
regular data	
resolution	the best possible (for forest elements it is desirable to identify areas of size 10 m*10 m)
Classification of maps 1 (nomenclature)	The list of classification categories should gradually approach the classification Corine land Cover http://land.copernicus.eu/user-corner/technical-library/corine-land-cover-nomenclature-guidelines/html/
Classification of maps 2 (nomenclature)	must meet the requirements The UNITED NATIONS CONVENTION TO COMBAT DESERTIFICATION IN THOSE COUNTRIES EXPERIENCING SERIOUS DROUGHT AND/OR DESERTIFICATION, PARTICULARLY IN AFRICA (according to the Law of Ukraine of 04.07.2002 No. 61-IV on Accession to the UNCCD)

On behalf of MENR:

Deputy Minister for
European integration
Mykola KUZIO

**On behalf of
SRI NASU-SSAU:**

Director
Oleg FEDOROV

(signature)

date

07 March 2018

(signature)

date

07 March 2018

Demands to land categories From the guidelines of national inventories greenhouse gases (IPCC2006)¹

- (i) **Forest Land.** This category includes all land with woody vegetation consistent with thresholds used to define Forest Land in the national greenhouse gas inventory. It also includes systems with a vegetation structure that currently fall below, but in situ could potentially reach the threshold values used by a country to define the Forest Land category.
- (ii) **Cropland.** This category includes cropped land, including rice fields, and agro-forestry systems where the vegetation structure falls below the thresholds used for the Forest Land category.
- (iii) **Grassland.** This category includes rangelands and pasture land that are not considered Cropland. It also includes systems with woody vegetation and other non-grass vegetation such as herbs and brushes that fall below the threshold values used in the Forest Land category. The category also includes all grassland from wild lands to recreational areas as well as agricultural and silvi-pastoral systems, consistent with national definitions.
- (iv) **Wetlands.** This category includes areas of peat extraction and land that is covered or saturated by water for all or part of the year (e.g., peatlands) and that does not fall into the Forest Land, Cropland, Grassland or Settlements categories. It includes reservoirs as a managed sub-division and natural rivers and lakes as unmanaged sub-divisions.
- (v) **Settlements.** This category includes all developed land, including transportation infrastructure and human settlements of any size, unless they are already included under other categories. This should be consistent with national definitions.
- (vi) **Other Land.** This category includes bare soil, rock, ice, and all land areas that do not fall into any of the other five categories. It allows the total of identified land areas to match the national area, where data are available. If data are available, countries are encouraged to classify unmanaged lands by the above land-use categories (e.g., into Unmanaged Forest Land, Unmanaged Grassland, and Unmanaged Wetlands). This will improve transparency and enhance the ability to track land-use conversions from specific types of unmanaged lands into the categories above.

¹ 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Volume 4: Agriculture, Forestry and Other Land Use, Chapter 3: Consistent Representation of Lands, subchapter 3.2 LAND-USE CATEGORIES

National features of land use categories

National features categories of land use are determined in accordance with List of lands according to Classifications species land (KVZU) (attachment 4 to Order of State land cadaster, approved by decree of Cabinet of Ministeries of Ukraine from 10/17/2012 №1051).

Forestland: minimum area 0.1 ha; minimum width 20 m; theminimum crown coverage (the projection of crown closure on the surface) is 30%.

Pastures: the category composition includes hayfields (agricultural land that is systematically used for haymaking (GOST 26640-85), including areas evenly covered by wood and shrub vegetation by up to 20% of the plot) and pastures (agricultural land that is systematically used for grazing (GOST 26640-85) evenly covered with wood and shrubvegetation by up to 20% of the plot), defined by the forms Nos. 11-earth, 12-earth, 15-earth, 16-earth), and ot her lands, which is 25 % and more covered by tree, shrubor grassvegetation, and are not included in other land-use categories.

Wetland: include extracting areas and development of peat.

Built-up land: is included infrastructure objects and green objects of cities (parks, garden squares).

Other land: territories without/or within significant plant cover<20% (sand, rocks, ravines).

On behalf of

MENR:

Deputy Minister for
European integration

Mykola KUZIO

On behalf of

SRI NASU-SSAU:

Director

Oleg FEDOROV

(signature)

date

07 March 2018

(signature)

date

07 March 2018