

SCERIN-7 Capacity Building Workshop on Earth System Observations

24th - 27th June 2019, Novi Sad, Serbia

“Land Cover Dynamics in the Agricultural and Protected Natural Areas in the SCERIN Domain”



in coordination with Trans-Atlantic Training (TAT) 21-24 June 2019



SCERIN-7: Land Cover Dynamics in the Agricultural and Protected Natural Areas in the SCERIN Region, June 24-27 Novi Sad, Serbia

The SCERIN-7 capacity building workshop will focus on the current LC dynamics in the Agricultural and Protected Natural Areas in SCERIN, with the goal to identify the typical precursors of land cover change (LCC) and consider our ability via remote sensing to monitor their dynamics, and estimate their influence on the local biogeochemical cycling.

The objectives of SCERIN-7 CBW are: 1) to inform the participants about major ongoing scientific efforts and projects, as well as possible contribution and follow-up activities of the SCERIN participants, 2) outline progress on the SCERIN validation activities, and 3) foster new ideas for joint papers by participants.

The program at a glance is outlined in the table below. SCERIN-7 is being held in coordination with a Trans-Atlantic Training (TAT-7).

SCERIN-7 Capacity Building Workshop – “Agenda at a Glance”

Day	Sun	Mon	Tue	Wed	Thu	Fri
Date	23-Jun	24-Jun	25-Jun	26-Jun	27-Jun	28-Jun
Event	<i>SCERIN Arrival</i>	SCERIN-7 CBW				<i>SCERIN Departure</i>
		day 1	day 2	day 3*	day 4	
	<i>TAT 21-24</i>					

* field trip

SCERIN Focus Groups (FG):

- FG1: Forest monitoring - disturbances, health and biomass [Leads: M. Nita/ J. Albrechtova/P. Campbell]
- FG2: Land cover changes – agricultural abandonment, urban expansion [Leads: G. Taff/L. Kupková and P. Stych/ L. Genc]
- FG3: Validation/verification network [Leads: A. Halabuk/I. Manakos and L. Filchev/S. Lewinsky and E. Gromny]
- FG4: Water management and LC impacts (river watersheds, catchments, dams, Leads: V. Starodubtsev/ I. Pilas / V. Lagutov]

Instructions for oral presentations: Your oral presentation should be designed to use only 75% of your allocated time. 25% of your time should be left for discussion and questions. (i.e. if your presentation is scheduled to last 10 mins, plan for it to take 7 min to allow for 3 minutes of questions and discussion – THANKS!).

Instructions for SCERIN Country/Project Inventory Panel on Day 2 – please generate one slide listing relevant activities/projects for your institution and summarize by country (5 min/country summary) and e-mail it to Jana and Petya:

Project/Program Title	Sponsor	Duration (years)	Support (funding level)
-----------------------	---------	------------------	-------------------------

During the panel you will tell us the objectives, and how they relate to SCERIN.



Figure 1: SCERIN-7 will be held at 2 different locations, as follows: Day 1 Vladike Platona Str. (in green, star symbol) and Days 2 and 4: Faculty of Mathematics and Informatics, Trg Dositeja Obradovića 3. The SCERIN-7 recommended hotel is Hotel Putnik (in yellow, house symbol). We will have networking and dinner opportunities at restaurant Plava Frajla (in yellow, fork and knife symbol) and restaurant Aqua Doria (in yellow, fork and knife symbol).

Time	6/24/2019 Monday - Location: Assembly of the Autonomous Province of Vojvodina, Vladike Platona Str.	
	SCERIN-7 Day 1	Name (First Family)
8:30	<i>Registration & Logistics (M. Mesaroš and P. Campbell)</i>	
	Plenary Session (Session Chairs: M. Mesaroš and Jana Albrechtova, Records: Petya Campbell)	
9:00	Welcome Address and Host Remarks (Introductions M. Mesaroš) Representative of the Provincial Secretariat for Higher Education and Scientific Research Milica Pavkov-Hrvojević, Dean of the Faculty of Natural Sciences Lazar Lazić – Head of the Department of Geography, Tourism and Hotel Management Minučer Mesaroš, Head of the local organizing committee.	
9:30	The NASA LCLUC Program in Support of GOFC-GOLD Program: An Update	Garik Gutman, NASA/HQ, US
10:15	SCERIN Status, SCERIN-7 Goals and Agenda	SCERIN coordinators - Petya Campbell, Jana Albrechtova and Lucie Kupkova
10:40	<i>Coffee Break (30 min)</i>	
11:10	Plenary Session – continuing (Session Chair: Lucie Kupkova, Records: Petya Campbell)	
11:10	Crop type mapping in SCERIN countries with Landsat-8 and Sentinel-2	Mutlu Ozdogan, U. Wisconsin, US
11:30	The Open Data platforms of WRI	Gregory Taff, WRI, US
11:50	ECOPOTENTIAL online data services legacy and SCERIN applications	Ioannis Manakos, CERTH, GR
12:10	<i>SCERIN-7 Picture (10 min)</i>	
12:20	<i>Working Lunch (1hr, conference location, sponsor START)</i>	
	Research Highlights Serbia (Session Chair: Minučer Mesaroš, Records: Petya Campbell)	
13:20	Value of information for smarter land management: experience from APOLLO, BEACON and CORINE land cover projects	Dragutin Protic, Fac. Civil Engin., University of Belgrade
13:45	Earth observation research activities at the Faculty of Technical Science	Miro Govedarica, Fac. Technical Sciences, University of Novi Sad
14:00	Application of Earth Observation in Agriculture at the Biosense Institute	Miloš Pandžić, Biosense Institute
14:15	Multidisciplinary research of Forest Ecosystems in Serbia	Dejan Stojanović, Institute of Lowland Forestry and Environment
14:30	Monitoring drought and inland excess water in Serbia - project Water at Risk	Minučer Mesaroš, Faculty of Sciences, University of Novi Sad
14:45	<i>Informal Questions & Discussion - Coffee Break (15 min)</i>	
15:00	SCERIN Research highlights - POSTERS 'flash talks' by FGs – list on next page (2 slides/2 min, Talk Leads: FG1 Albrechtova, FG2 Kupkova, FG3 Filchev, FG4 Lagutov; timing: Manakos)	
	<i>Questions and Discussion</i>	
16:00	<i>Adjourn</i>	
17:00	<i>Visit to the Biosense institute and Novi Sad sightseeing (Petrovaradin fortress)</i>	
20:00	Networking Reception (Restaurant Plava Frajla, Sutjeska 2, sponsored by START)	

SCERIN Research Highlights - POSTERS ‘flash talks’ (2 min = 2 slides)

Flash-talks leads: FG1 Albrechtova/Campbell, FG2 Kupkova, FG3 Filchev, FG4 Lagutov

Timing: Manakos (2 minutes per flash talk)

Please e-mail your flash talk (2 slides/2 min) to the leads and print and bring your posters

<i>FG</i>	<i>Research Highlight Title</i>	<i>Presenter</i>
FG1	<p><u>Albrechtova/ Campbell</u>, <i>flash-talks lead</i></p> <ol style="list-style-type: none"> 1. Earth observation services for silviculture – My Sustainable Forest 2. The effect of Norway spruce needle age on biophysical traits prediction from laboratory leaf-level spectra and its impact on upscaling. 3. Rapid Change Detection of Forest Cover Disturbances in the Ukrainian Carpathian 	<p>Ivan Pilas, Zuzana Lhotakova Serhii Havryliuk</p>
FG2	<p><u>Kupková</u>, <i>flash-talks lead</i></p> <ol style="list-style-type: none"> 1. Generating Sentinel-2 Crop Maps on Test Areas in Bulgaria using Google Earth Engine 2. Use of remote sensing data in the assessment of potential soil loss due to water erosion in Shida Kartli region, Georgia 3. National parks in danger: Land use changes around National parks. Case study of Fruška gora National park 4. Measurement and correlation of light pollution and land cover changes 	<p>Filchev, L., P. Dimitrov, and G. Jeleu Giorgi Ghambashidze Tijana Đorđević Dajana Bjelajac</p>
FG3	<p><u>Filchev</u>, <i>flash-talks lead</i></p> <ol style="list-style-type: none"> 1. Multisource airborne hyperspectral assessment of thermal properties of urban ecosystem 2. Automated Sentinel data processing on different HPC environments. 3. Product Prototypes for Vegetation Function - canopy chlorophyll at medium and high resolution 	<p>Miroslav Píkl Levente Ronczyk Petya Campbell & Jana Albrechtova</p>
FG4	<p><u>Lagutov</u>, <i>flash-talks lead</i></p> <ol style="list-style-type: none"> 1. Land Cover changes in the Azov Sea Basin 2. Dams as a trigger of land cover change in river basins 3. DREAM SK-AT: Danube river research and management project 4. Multidimensional model of integration remote sensing data and geospatial services in water management 	<p>Viktor Lagutov Volodymyr Starodubtsev Pavol Kenderessy, Gordana Jakovljevic, UBL, BIH</p>

Time	6/25/2019 Tuesday – Location: Faculty of Sciences, Department of Mathematics and Informatics, Trg Dositeja Obradovića 3	
	SCERIN-7 Day 2	Presenter's Name
Working Sessions (WS) of the SCERIN by FGs or Projects: detailed overview by leaders, discussion topics, schedule for paper finishing (<i>Session chair: Petya Campbell, Records: Leaders of WS1-3</i>)		
9:00	WS1 1) Automated LC classification using S2GLC classification approach - the final results; 2) Database of land cover reference points	S. Lewinski and E. Gromny
9:40	WS2 Progress on three studies/papers, next steps and alternatives	I. Manakos
10:10	WS3 The impact of urban greenery on local climate	F. Zemek
10:30	<i>Coffee Break and Posters (30 min)</i>	
11:00	WS4 Agricultural Land Use/Land Cover changes in East and Central Europe - main trends and driving forces	Taff (lead)
SCERIN Future Activities		
11:40	SCERIN Funding opportunities: projects and goals /proposal opportunities (<i>L. Kupkova and I. Manakos</i>)	
12:00	<i>Questions & Discussion</i>	
12:15	<i>Lunch and Posters (1hr, conference location, sponsor START)</i>	
SCERIN Future Activities – Case Studies, focus on potential for SCERIN collaboration		
13:15	Planet Labs Products and Services in the SCERIN Region	Robert Nagy, Planet
13:35	DigitalGlobe Products and Services in the SCERIN Region	Steven Allen, Maxar Technologies
13:55	3D technologies in monitoring forest structures	Mihai Daniel Nita
14:15	Natural risks and anthropogenic impacts on the Bulgarian Black Sea region	Lyubka Pashova and Rumiana Vatsseva
14:35	HLS product prototypes for SCERIN domain time series – a discussion	Petya Campbell
14:45	Countries and Programs Priorities - SCERIN Panel (<i>12 countries, 5 min./ country summary, Chair: Jana/Petya - please supply 1 slide</i>)	
15:45	Countries and Programs Inventory - Observers Panel (<i>2, Georgia/Ghambashidze and Russia/Gromyko</i>) (5 minutes for country summary)	
16:00	<i>Coffee Break and Posters (15 min)</i>	
16:15	SCERIN Future Activities - Discussion & inputs from ALL (<i>TBD – if by FGs</i>)	
	FG (1-4) Future Activities - Discussions in parallel working sessions	2/4 rooms, records by the FG lead
17:00	<i>Questions & Discussion</i>	
17:30	<i>Adjourn</i>	
20:00	SCERIN-7 Networking - Dinner (<i>Location: Plava Frajla, Sutjeska 2, Sponsored by the Department of Geography, Tourism and Hotel Management</i>)	

6/26/2018 *Wednesday* - *Starting Location at Hotel Putnik*

SCERIN-7 Day 3

Regional LCLUC - Field Trip (*Sponsored by the Department of Geography, Tourism and Hotel Management, Faculty of Sciences*)

Scientific Field Trip: 'Visit to the Fruška Gora National Park'

Goals: learn about the typical regional drivers/examples of Land Cover Change and dynamics, and provide time for informal discussions, and foster further the SCERIN network collaborations.

The protected natural areas in Serbia are under increasing pressure from urbanization, agriculture, resource exploitation, transport, tourism. The Fruška gora National park, located between the two largest urban zones in Serbia and one of the first protected areas in former Yugoslavia, provides an excellent example of these processes.

8:00 Gathering in front of Hotel Putnik (be punctual)

How to dress: sport gear, walking shoes, hats, water, sunscreen and insect repellent

9:00	Visit to the stone quarry Kišnjeva glava (map 1.), guide Dr. Mladen Jovanović, UNS
10:00	Fruška Gora Forest Management, Dejan Stojanović
11:00	Visit to the Info center of the Fruška Gora National Park (2.), Representative
12:30	Vrdnik (3.) – <i>Lunch [Restaurant (options/Minucer), Hotel Vrdnicke kule]</i>
14:30	Visit to the Krušedol Orthodox Monastery (4.)
15:30	Visit to the Historic Town of Sremski Karlovci (5.) - <i>local LCLU</i>
18:30	<i>Return to Novi Sad</i>
20:00	SCERIN-7 Network Discussions – <i>Host Diner sponsored by the Institute of Lowland Forestry and Environment, Restaurant: TBD</i>





Figure 2: Locations to be visited during the LCLUC field trip. The discussion topics are outlined above in the agenda (prior page).

Time	6/25/2019 Tuesday – Location: Faculty of Sciences, Department of Mathematics and Informatics, Trg Dositeja Obradovića 3
	SCERIN-7 Day 4
9:00	FG (1-4) Future Milestones – outcome from discussions on day 2 (10 min summary by FG leads)
10:00	<i>Questions & Discussion</i>
10:30	<i>Coffee Break and Posters (30 min)</i>
11:00	WS Outcomes – by WSs: summary and short discussion
11:30	SCERIN network proposed collaborative activities (summary) (<i>Inputs from all/ Petya to generate summary</i>)
12:00	<i>Working Lunch</i>
13:30	SCERIN Future Activities
14:30	SCERIN Future Venue(s) proposal (s) in 2020 for a joint SCERIN and MEDRIN venues, and beyond
15:00	<i>Coffee Break, Posters are removed (30 min)</i>
15:30	SCERIN-7 Workshop outcomes, actions and deadlines, summary and conclusions
	<i>Chairs: Jana and Petya, Records: TBD</i>
16:00	Meeting Closing, Host Concluding Remarks (<i>Coordinators: Jana, Hosts: Minuđer</i>)
16:30	<i>SCERIN-7 Adjourn</i>

SCERIN-7 ORGANIZERS AND SCIENTIFIC COMMITTEE

Serbian Scientific Committee

Dr. **Lazar Lazić**, Faculty of Sciences, University of Novi Sad

Dr. **Miro Govedarica**, Faculty of Technical Science, University of Novi Sad

Dr. **Vladimir Crnojević**, Biosense Institute, University of Novi Sad

Dr. **Dušan Jovanović**, Faculty of Technical Science, University of Novi Sad

Dr. **Dejan Stojanović**, Institute of Lowland Forestry and Environment, University of Novi Sad

SCERIN-7 Main Contact and Host

Dr. **Minuđer Mesaroš**, Assistant Professor, Department of Geography, Tourism and Hotel Management, Faculty of Sciences, University of Novi Sad. Contact information: e-mails minucer.mesaros@dgt.uns.ac.rs, minu@uns.ac.rs; telephones office +381 21 450 602, mobile +381 63 891 44 60.

SCERIN Coordinators

Petya Campbell (petya.k.campbell@nasa.gov), Joint Center for Earth Systems Technology (JCET), University of Maryland Baltimore County; and NASA GSFC, Greenbelt, Maryland, USA.

Jana Albrechtova (albrecht@natur.cuni.cz), Department of Experimental Plant Biology, Faculty of Science, Charles University in Prague, Prague, Czech Republic.

Lucie Kupkova (lucie.kupkova@gmail.com), Department of Applied Geoinformatics and Cartography, Faculty of Science, Charles University in Prague, Prague, Czech Republic.

Garik Gutman, National Aeronautics and Space Administration (NASA), Washington, District of Columbia, USA.

SCERIN-7 Hosts and Sponsors:

- **Serbian Host Partners**
 - Faculty of Science
 - Biosense Institute
 - Faculty of Technical Science
 - Institute of Lowland Forestry and Environment

- **Serbian Sponsors**
 - Provincial Secretariat for Higher Education and Scientific Research, Autonomous Province of Vojvodina
 - VEKOM
 - Gdi
 - Livona doo

- **International Sponsors**
 - GOFC-GOLD Program, FAO
 - LCLUC Program, NASA
 - START Organization

SCERIN-7 PARTICIPANTS

First Name	Last Name	Affiliation	Email address	ISO
Jana	Albrechtova	Charles University, Faculty of Science, Prague	albrecht@natur.cuni.cz	CZ
Stephen	Allen	Maxar Technologies, London	TBD	UK
Dajana	Bjelajac	University of Novi Sad, Faculty of Sciences	dajana.bjelajac@dgt.uns.ac.rs	SRB
Petya	Campbell	JCET/UMBC and GSFC/NASA, Greenbelt, MD	petya.campbell@nasa.gov	US
Tijana	Dorđević	University of Novi Sad, Faculty of Sciences	tijana.djordjevic@dgt.uns.ac.rs	SRB
Vladimir	Djurdjevic	Faculty of Physics, University of Belgrade, Serbia	vdj@ff.bg.ac.rs	SRB
Lachezar	Filchev	Space Research and Technology Institute, Bulgarian Academy of Sciences (SRTI-BAS)	lachezarhf@space.bas.bg	BG
Giorgi	Ghambashidze	Scientific-Research Centre of Agriculture	giorgi.ghambashidze@srca.gov.ge	GEO
Miro	Govedarica	University of Novi Sad, Faculty of Technical Science, Serbia	miro@uns.ac.rs	SRB
Ewa	Gromny	Space Research Center PAS, Warsaw	egromny@cbk.waw.pl	PL
Antonina	Gromyko	Skoltech, Moscow, Russia	toniagromyko@gmail.com	RU
Garik	Gutman	NASA HQ, Washington, DC	ggutman@nasa.gov	US
Serhii	Havryliuk	Ukrainian National Forestry University	serhiy_havrylyuk@nltu.edu.ua	UA
Gordana	Jakovljevic	University of Banja Luka, Faculty of Architecture, civil engineering and geodesy	gordana.jakovljevic@aggf.unibl.org	BIH
Pavol	Kenderessy	Institute of Landscape Ecology, Slovak Academy of Sciences	pavol.kenderessy@savba.sk	SK
Lucie	Kupková	Charles University Prague, Czechia	lucie.kupkova@natur.cuni.cz	CZ
Viktor	Lagutov	Central European University	lagutov@ceu.edu	HU
Stanislaw	Lewinski	Space Research Center PAS, Warsaw	stlewinski@cbk.waw.pl	PL
Zuzana	Lhotakova	Charles University, Faculty of Science, Department of Experimental Plant Biology	zuzana.lhotakova@natur.cuni.cz	CZ

First Name	Last Name	Affiliation	Email address	ISO
Ioannis	Manakos	Center for Research and Technology Hellas	imanakos@iti.gr	GR
Minučer	Mesaroš	University of Novi Sad, Faculty of Sciences	minucer.mesaros@dgt.uns.ac.rs	SRB
Robert	Nagy	Planet Labs, Berlin	robert.nagy@planet.com	GDR
Mihai Daniel	Nita	Transilvania University of Brasov	nita.mihai.daniel@gmail.com	RO
Mutlu	Ozdogan	University of Wisconsin Madison	ozdogan@wisc.edu	US
Lyubka	Pashova	National Institute of Geophysics, Geodesy and Geography - Bulgarian Academy of Sciences	lpashova.niggg@gmail.com	BG
Miroslav	Pikl	Global Change Research Institute CAS	pikl.m@czechglobe.cz	CZ
Ivan	Pilas	Croatian Forest Research Institute	ivanp@sumins.hr	HR
Dragutin	Protic	Faculty of civil engineering, University of Belgrade	protic@grf.bg.ac.rs	SRB
Levente	Ronczyk	University of Pécs, Hungary	h2o@gamma.ttk.pte.hu	HU
Volodymyr	Starodubtsev	National University of Life and Environmental Sciences of Ukraine	vmstarodubtsev@ukr.net	UA
Premysl	Stych	Charles University, Prague	stych@natur.cuni.cz	CZ
Gregory	Taff	World Resources Institute, Washington, DC	gregory.taff@wri.org	US
Rumiana	Vatseva	Bulgarian Academy of Sciences, National Institute of Geophysics, Geodesy and Geography, Sofia	rvatseva@gmail.com	BG
Frantisek	Zemek	Global Change Research Institute, CAS	zemek.f@czechglobe.cz	CZ