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# WP3

# **Development of curricula**

Lead Organisations of WP3: **UBL** - Republic of Srpska, BIH **Participating Organisation:** UB;UNI; UBL; UNSA; INSZASUM; BOKU; UNSCM; UNIRC;FRI-BAS

Deliverable 3.1 Title : New bachelor subjects implemented **Participating Organisation:** UB; UNS; UNI; UBL; UNSA





# **PROJECT INFO**

Project title	Soil Erosion and Torrential Flood Prevention: Curriculum
	Development at the Universities of Western Balkan Countries
Project acronym	SETOF
Project reference number	598403-EPP-1-2018-1-RS-EPPKA2-CBHE-JP(2018-2579/001-
	001)
Coordinator	University of Belgrade
Project start date	November 15, 2018
Project duration	36 months

## **DOCUMENT CONTROLSHEET**

Ref. No and Title of Activity	3.1 New bachelor subjects implemented
Title of Deliverable:	Report on the acquired equipment
Institutions:	University of Belgrade, University of Niš, University of Novi Sad, University of Banja Luka, University of Sarajevo
Author/s of the deliverable	
Status of the document:	final





## Introduction

This report is the final outcome of Deliverable 3.1 New bachelor subjects impelemented Report on the acquired equipment. Within the Co-funded by the Erasmus+ Programme of the European Union SETOF Project (Soil Erosion and Torrential Flood), Ref. 598403-EPP-1-2018-1-RS-EPPKA2-CBHE-JP(2018-2579/001-001), 5 Laboratories have been established in 5 Western Balkan HEIs, partners in the project. Established laboratories and acquired equipment will help in teaching and scientific research work of students and teaching staff.

In this report, there is a detailed information for each WB project partner regarding the established laboratories in their HEIs, together with the list of equipment purchased. The outline of each report follows these issues:

- 1. Laboratory description
- 2. List of equipment within the project
- 3. Inclusion in teaching process
- 4. Sustainability
- 5. Photos of Equipment
- 6. Additional Comment

Procurement activities have been finalized in all HEIs, and the outcome of this process will be presented in the next sessions.





## **REPORT ON ESTABLISHED LABORATORY**

#### **Project procurements overview – realised procurements**

Partner	Institution	The type of procurement foreseen by the project			
		Laboratory	IT equipment	Books	
P1	University of Belgrade	Х	x	-	
P2	University of Novi Sad	Х	x	-	
P3	University of Nis	х	x	х	
P4	University of Banja Luka	х	x	-	
P5	University of Sarajevo	Х	x	-	

#### **Project procurements overview - realisation dates**

Partner Institution		Realization date of procurement			
		Laboratory	IT equipment	Books	
P1	UB	07.09.2020	07.09.2020	-	
P2	UNS	19.06.2020	12.06.2020	-	
P3	UNI	02.10.2022	02.10.2022	26.08.2020	
P4	UBL	25.02.2020.	24.02.2020.	-	
			8.9.2020. (computer)		
P5	UNSA	13 10 2020	30.7.2020. (camera)	_	
10	011011	10110120201	7.7.2020. (gps)		
			14.9.2020. (14.500)		





#### **Project procurements overview – costs**

<u>ب</u>	Price of the realized procurement (EUR)			EUR)
Partne		Laboratory IT equipment		Books
P1	UB	1.518,31	44.455,15	-
P2	UNS	12.040,16	10.320,06	-
P3	UNI	14.682,11	4.055,47	458,99
P4	UBL	21.441,55	5.971,89	-
P5	UNSA	6.410,00	25.172,00	-

#### **Project procurements overview – costs**

Partner	Institution	Total amount spent (EUR)	Planned amount to be spent (EUR)	Difference between planned and spent amount (EUR)
P1	UB	45.973,46	47.430,00	1.456,54
P2	UNS	22.360,22	26.125,00	3.764,78
P3	UNI	19.186,58	17,185.00	-2.001,58
P4	UBL	27.413,44	27.413,44	0
P5	UNSA	28.449,00	29.070,00	621,00





## UNIVERSITY OF BELGRADE (P1) REPORT ON ACQUIRED EQUIPMENT AND ESTABLISHED LABORATORY

#### Laboratory an IT EQUIPMENT description

Acquired laboratory and IT equipment is attended to support the organization and implementation of master academic studies in torrential floods and disaster risk management, modernized/developed within the SETOF project, financed by of the EU Commission through the ERASMUS+ programme. Laboratory and IT equipment is in charge of teachers and associates at the University of Belgrade, located at the premises of the Faculty of Forestry and the Rectorate of the University in Belgrade. The laboratory an IT equipment is accessible to both students and teaching staff for teaching/learning purposes as well as for research activities.

### **Inclusion in teaching process**

Equipment that is purchased have been important to improve the teaching/learning activities in innovated bachelor and master academic studies in Department of Ecological engineering for soil and water resources protection. Among the courses of the bachelor study programs, there are innovated and equipment will help with better teaching process including common courses, with the intention to prolong it beyond the project life cycle. Apart from the fact that lectures and/or exercises of the common courses can be recorded and exchanged, more student-centred approach is also desirable. On the other hand, fieldwork equipment is used frequently for measurement of soil erosion during the regular field work with students, particularly we pay attention on the influence of factor on the intensity erosion process. Assistant and professor of Faculty of Forestry University of Belgrade use equipment for collecting modern scientific data needed for papers and scientific research. Computers are necessary to provide the infrastructure that is able to support the processes of teaching and research for staff and students. More complex educational systems, devices and practical educational laboratory where students are trained to work on the instruments used in professional practice will support the production of the bachelor and master theses and the achievement of the set educational goals.

#### **Sustainability**

The institution has sufficient financial means to support the maintenance of all its equipment including the items purchased through the SETOF project. The staff is constantly informed about new equipment and trained and retrained according to the needs of the teaching/working process. The equipment is accessible to all staff involved in particular activities or tasks, not just to individuals. Especially younger staff members are encouraged to use the equipment. Laboratory and field equipment can be used for various research activities of bachelor, master and PhD students, as well as teaching staff in the future. The acquired equipment will enable, in addition to teaching, the implementation of project activities and the testing of soil erosion for interested person, which will provide sufficient funds for maintenance of the equipment.





List of	List of equipment				
No.	Name of item	Quantity	The purpose		
1.	Projector Sony XGA 3200 ANSI 20000:1 HDML R 145 USB	1	Research, teaching and other purposes in the computer lab		
2.	Laptop HP IDS UMA	9	Used by teaching staff in their office premises and in the laboratory for research, teaching and other purposes		
3.	Desktop: Intel CPU Core i5, i5- 9400F (2.9GHz, 9MB, LGA1151) Coffee Lake, 14nm, BOX, Asus Intel MB PRIME H310M-R R2.0 1151, Kingston DIMM DDR4 16GB 2666MH, + keyboards; wire mouse; Stars Solutions USB YU+ Monitors: Acer LCD 23.8" B247YBMIPRX IPS, Full HD, VGA, HDMI, DP, Swivel, Pivot, HA, Tilt, USB, Vesa,	20	Research, teaching and other purposes in the computer lab.		
4.	Anemometer YK-2005AM	3	Used to collect field data for scientific works, master thesis of students, bachelor work for the students interested in soil compaction.		
5.	Digital moisture meter TK100 (0-80%)	1	Used to collect field data for scientific works, master thesis of students, bachelor work for the students interested in soil compaction.		
6.	Multiparameter climate meter LM- 8102	1	Used to collect field data for scientific works, master thesis of students, bachelor work for the students interested in soil compaction.		
7.	Unmanned Areal Vehicle DJI Phantom 4 RTK (with software and education)	1	High precision multispectral image collection and land cover survey for environmental monitoring applications		
8.	Decktop: Intel CPU Core i5, i5- 9400F (2.9GHz, 9MB, Gigabyte 1 MB Z390 D Kingston DIMM DDR4 8GB 2666MHz WD HDD 1TB 3.5" 7200 64MB SATA 3 interni WD10EZEX, SSD M.2 512GB AData ASX8200PNP-512G GT1030-SL- 2G-BRK, , Win10	1	equipment for employees of the Rectorate of the University of Belgrade		





	PRO,K120,M705,P2419H,AC511M		
9	Intel CPU Core i3, i3-8100 Intel MB		equipment for employees of the
	H310M S2V		Rectorate of the University of Belgrade
	2.0 1.0 1151, DDR4 8GB 2666MHz		
	KVR26N19S8/8BK, WD HDD 1TB		
	3.5" 7200 64MB	4	
	SATA 3 interni WD10EZEX, GV-		
	N710D5SL-		
	2GL,Win 10 PRO, DVD-		
	RW,K120,B100,		
10	HP Notebook 6XJ55AV HP IDS	2	equipment for employees of the
	UMA i5-10210U 440 G7 BNBPC	2	Rectorate of the University of Belgrade
11	Microsoft 021-10597 OfficeStd	1	equipment for employees of the
	2019 SNGL OLP NL Acdmc	1	Rectorate of the University of Belgrade
12	AVG AVG Anti-Virus Business	1	equipment for employees of the
		1	Rectorate of the University of Belgrade
13	HP A8P79A 3G HP Laserjet	1	equipment for employees of the
	M521dn MFP A8P79A	1	Rectorate of the University of Belgrade
14	Logitech M110 Silent Optical	6	equipment for employees of the
	Corded Mouse	0	Rectorate of the University of Belgrade
15	Logitech BCC950 HD,	1	equipment for employees of the
	Conferencecam, Black	1	Rectorate of the University of Belgrade
16	Toshiba HDD 4TB	2	equipment for employees of the
	HDTP240EK3CA	5	Rectorate of the University of Belgrade



Figure 1. Projector Sony XGA 3200



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Figure 2. HP Laptop



Figure 3. Desktop computers in laboratory



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Figure 3. Desktop computers in laboratory



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Figure 4. Anemometer YK-2005AM











Figure 6. Multiparameter climate meter LM-8102



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Figure 7. Unmanned Areal Vehicle DJI Phantom 4 RTK with software





## UNIVERSITY OF NOVI SAD (P2) REPORT ON ACQUIRED EQUIPMENT AND ESTABLISHED LABORATORY

#### Laboratory an IT EQUIPMENT description

Acquired laboratory and IT equipment is attended to support the organization and implementation of master academic studies in torrential floods and disaster risk management, modernized/developed within the SETOF project, financed by of the EU Commission through the ERASMUS+ programme. Laboratory and IT equipment is in charge of teachers and associates at the University of Novi Sad, located at the premises of the Faculty of Agriculture and the University of Novi Sad. The laboratory an IT equipment is accessible to both students and teaching staff for teaching/learning purposes as well as for research activities.

List of	ist of equipment				
No.	Name of item	Quantity	The purpose		
1.	Unmanned Areal Vehicle DJI Phantom Multispectral + D-RTK2	1	High precision multispectral image collection and land cover survey for environmental monitoring applications		
2.	IPAD Mini 64GB+Wi-fi	1	Remote controller for the UAV DJI Phantom Multispectral		
3.	PIX4DMapper software	1	Software for photogrammetry, mapping and processing of UAV multispectral images		
4.	Cannon IR2520 Multifunctional printer, scanner, copier	1	Established in the department premise and used for different purposes related to project administration, teaching, research and other paperwork preparation		
5.	Laptop HP 6Xj55AV IDS UMA	6	Used by teaching staff in their office premises and in the laboratory for research, teaching and other purposes		
6.	Laptop HP 6YY26AV IDS UMA	3	Used by teaching staff in their office premises and in the laboratory for research, teaching and other purposes		
7.	Camera Nikon Z6 and accessories (lens, adapter, memory card)	1	Used by teaching and research staff for photographing events and documenting erosion processes and erosion sites		
8.	Tablet Samsung Galaxy Tab S6 SM-T860NZNASEE	1	Used by teaching and research staff for field surveys, research, teaching and other purposes		



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Figure 8. DJI Phantom Multispectral + D-RTK2, Remote controller equipped with IPAD Mini 64GB+Wi-fi



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Figure 9. PIX4DMapper software



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Figure 10. Cannon IR2520 Multifunctional printer, scanner, copier



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Figure 11. Laptop computers HP 6Xj55AV IDS UMA and HP 6YY26AV IDS UMA



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Figure 12. Camera Nikon Z6



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Figure 13. Tablet Samsung Galaxy Tab S6 SM-T860NZNASEE





## UNIVERSITY OF NIŠ (P3) REPORT ON ACQUIRED EQUIPMENT AND ESTABLISHED LABORATORY

Laboratory description

Educational laboratory is established to support the organization and implementation of master academic studies in torrential floods and disaster risk management, modernized/developed within the SETOF project, financed by of the EU Commission through the ERASMUS+ programme. Laboratory and IT equipment is placed in SETOF educational laboratory, located at the premises of the Faculty of Occupational Safety. The laboratory is accessible to both students and teaching staff for teaching/learning purposes as well as for research activities. List of equipment

No.	Name of item	Quantity	The purpose
SETO	F computer lab		
1	HP Desktop 290 G2 Microtower	22	Research, teaching and other purposes in
	PC - 3VA91EA Intel® Core™ i3-		the computer lab.
	8100 3.60 GHz, 4GB, Intel® HD		
	Graphics 630, Windows 10 Pro		
	64bit; Monitor LENOVO LED		
	21.5" LI2215s Full HD -		
	65CCAAC6EU 21.5", TN, 1920 x		
	1080 Full HD, 5ms; keyboards;		
	wire mouse;		
2	HP multifunctional printer	1	Research, teaching and other purposes in
	LaserJet Pro MFP M28a -		the computer lab.
	W2G54A Laser, Mono, A4		
3	Speakers MICROLAB bluetooth	1	Research, teaching and other purposes in
	Z537 2.1, 60W, 55Hz-20KHz, 8		the computer lab.
	Ohm		
4	LCD Projector WXGA <u>1280x800</u>	1	Research, teaching and other purposes in
	<u>3200ANSI HDMI</u>		the computer lab.
5	Skener CANNON CanoScan	4	Research, teaching and other purposes in
	LiDE 400 - A4 skener, položeni,		the computer lab.
	CIS, 4800 x 4800 dpi		
6	Projection wall board AVTEK WS	1	Research, teaching and other purposes in
	S 240 - IM00003 236 x 236 cm,		the computer lab.
	1:1		



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**Figure 14. Desktop Computers** 

IT equ	ipment		
7	APPLE MacBook Air 13" Retina	2	Used by teaching staff in their office
			premises and in the laboratory for
			research, teaching and other purposes
8	HP Desktop - 460-p215ny -	1	Used by teaching staff in their office
	5XT11EA Intel <sup>®</sup> Core <sup>TM</sup> i5-		premises and in the laboratory for
	7400T 2.4 GHz (do 3.0 GHz),		research, teaching and other purposes
	8GB, Intel® HD Graphics 630,		
	Windows 10 Home 64bit; Monitor		
	LENOVO LED 21.5" LI2215s		
	Full HD - 65CCAAC6EU 21.5",		
	TN, 1920 x 1080 Full HD, 5ms;		
	keyboards; wire mouse;		
9	Printer HP Color LaserJet Pro	1	Established in the department premise
	MFP M477fdw - CF379A Laser,		and used for different purposes related to
	Kolor, A4		project administration, teaching,
			research and other paperwork
			preparation
10	Eksternal HDD TOSHIBA HDD	4	Used by teaching staff in their office
	Canvio Ready 1TB		premises and in the laboratory for
			research, teaching and other purposes



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Figure 15. HP multifunctional printer

Books			
1	Jonathan M. Harris (2009). Ekonomija životne sredine i	2	To be used for research, teaching, project
	prirodnih resursa ISBN		staff and students
	9788674780893		
2	Barry C Field, Martha K Field	1	To be used for research, teaching, project
	(2016) Environmental Economics.		activities and other purposes by teaching
	ISBN 9781259255403. McGraw		staff and students
	Hill;		
3	Gary Dessler (2016) Human	1	To be used for research, teaching, project
	Resource Management (15th		activities and other purposes by teaching
	Edition). ISBN 9781292152103.		staff and students
	Pearson Education;		
4	Klajv Ponting, EKOLOSKA	1	To be used for research, teaching, project
	ISTORIJA SVETA, ISBN		activities and other purposes by teaching
	9788677200534;		staff and students
5	Bil Mekiben (2007).	1	To be used for research, teaching, project
	KLIMATSKE PROMENE:		activities and other purposes by teaching
	ODGOVOR PRIRODE. ISBN		staff and students
	978-86-7348-321-4. Esotheria;		
6	Entoni Gidens (2010).	1	To be used for research, teaching, project
	KLIMATSKE PROMENE I		activities and other purposes by teaching
	POLITIKA. ISBN: 86-7102-357-		staff and students
	3. Clio;		





7	Hartmut Grasl. Klimatske	1	To be used for research, teaching, project
	promene. ISBN 978-86-521-0642-		activities and other purposes by teaching
	4. Laguna;		staff and students
8	Dunja Popović, Ana Vuković	1	To be used for research, teaching, project
	(2019). Klimatske promene. ISBN		activities and other purposes by teaching
	978-86-7466-770-5. Akademska		staff and students
	misao;		
9	Čedomir Zeljković (2018).	1	To be used for research, teaching, project
	Obnovljivi izvori energije –		activities and other purposes by teaching
	solarna energija. ISBN 978-		staff and students
	99955-46-30-4. Akademska		
	misao;		
10	Slaviša Žukanović (2014).	1	To be used for research, teaching, project
	Ekoloska energetika – širenje		activities and other purposes by teaching
	primene. ISBN: 978-8686363503.		staff and students
	AGM knjiga;		
11	Nikola Kleut (2016). Instalacije i	1	To be used for research, teaching, project
	oprema za bezbednost od požara.		activities and other purposes by teaching
	ISBN 978-86-86363-67-1. AGM		staff and students
	knjiga;		
12	Nikola Kleut (2013) Požari i	1	To be used for research, teaching, project
	njihova dejstva ISBN: 978-86-		activities and other purposes by teaching
	86363-39-8. AGM knjiga;		staff and students
13	Nikola Kleut (2014). Urbanističke	1	To be used for research, teaching, project
	i građevinsko arhitektonske mere		activities and other purposes by teaching
	bezbednosti od požara. ISBN: 978-		staff and students
	86-86363-46-6. AGM knjiga;		
14	Nikola Kleut (2016). Tehnološke i	1	To be used for research, teaching, project
	mere bezbednosti od požara na		activities and other purposes by teaching
	osnovnim instalacijama. ISBN:		staff and students
	978-86-86363-66-4. AGM knjiga;		
15	Richard A. Honeycutt (2018).	1	To be used for research, teaching, project
	Akustika prostora. ISBN 978-86-		activities and other purposes by teaching
	80134-16-1. Agencija Eho;		staff and students
16	Jure Margeta (2007). Oborinske i	1	To be used for research, teaching, project
	otpadne vode, teret onečišćenja,		activities and other purposes by teaching
	mere zaštite. AGM knjiga;		staff and students











Figure 16. Books





## UNIVERSITY OF BANJA LUKA (P4) REPORT ON ACQUIRED EQUIPMENT AND ESTABLISHED LABORATORY

## **REPORT ON ESTABLISHED LABORATORY PROJECT PARTNER: UNIVERSITY OF BANJA LUKA**

## **1. LABORATORY DESCRIPTION**

The laboratory for soil at the Faculty of Forestry has not yet been fully established, due to lack of space within this building. Faculty of Forestry University of Banja Luka is in the phase of being moved to a new building, where a soil laboratory will be established and partially equipped, which is why part of the equipment is still packed. On the other hand, soil penetrologger has been filed instrument that is already used for filed research with students, data collection of bachelor and master student final work.

#### 2. LIST OF EQUIPMENT

#### Laboratory equipment

No.	Name of item	Quantity	The purpose
1	Sieve for sieving soil	1	The aforementioned
	samples (mesh		laboratory equipment
	opening: 0.25 mm)		will be installed in
2	Sieve for sieving soil	1	new pedological
	samples (mesh		laboratory in Faculty
	opening: 2 mm)		of Forestry and will be
3	UV/VIS	1	used for scientific
	spectrophotometer		research, practical
4	Flame photometer	1	teaching,
	with compressor Na+,		implementation of
	K+, Ca2+, Li and Ba		project activites and
5	Pipette apparatus,	1	other needs of students
	table model set for 7		and teaching staff.
	samples		
6	Penetrologger with	1	Used to collect field
	GPS		data for scientific
			works, master thesis of
			students, bachelor
			work for the students
			interested in soil
			compaction.





rrc equip	oment		
1	Laptop Dell XPS 13-7390 i7 10510	1	To be used by teaching staff for teaching, meetings, research and other purposes.
2	AIO computer Dell Inspirion 22-3277+Win 10PRO	1	To be used
3	Dell AIO Inspirion 22-3277 FHD 21,5 DAIO22-P-4-1- TV-56	5	by teaching staff in their
4	WINDOWS 10 PRO 64 bit OEM	1	office premises for teaching, research, meeting, preparation presentations and other purposes.

## **3. INCLUSION IN TEACHING PROCESS**

Equipment that is purchased have been important to improve the teaching/learning activities in innovated bachelor and master academic studies in Forestry. Among the courses of the bachelor study programs, there are innovated and equipment will help with better teaching process including common courses, with the intention to prolong it beyond the project life cycle. Apart from the fact that lectures and/or exercises of the common courses can be recorded and exchanged, more student-centred approach is also desirable. On the other hand, fieldwork equipment is used frequently for measurement of soil compaction during the regular field work with students, particularly we pay attention on the influence of forest mechanization on soils in forestry. Besides regular field work, students used digital penetrologger for collection of data for master and bachelor field work where soils are the main subject or just part of the research. Assistant and professor of soil science use equipment for collecting modern scientific data needed for papers and scientific research. Laboratory is additionally equipped with modern devices that will be used by students and staff for chemical and physical properties of soils, but also for plant material. Since almost all soil lectures have practical and technological nature and require the verification of results in the laboratory and on the field, these laboratories provide the necessary basic infrastructure. In addition to the sieves for sample preparation, the laboratories are also equipped with the devices that is used strictly for training students for soil characteristics needed to understand erodibility and soil quality. Computers are necessary to provide the infrastructure that is able to support the processes of teaching and research for staff and students. More complex educational systems, devices and practical educational laboratory where students are trained to work on the instruments used in professional practice will support



![](_page_26_Picture_2.jpeg)

the production of the bachelor and master theses and the achievement of the set educational goals.

## 4. SUSTAINABILITY

The institution has sufficient financial means to support the maintenance of all its equipment including the items purchased through the SETOF project. The staff is constantly informed about new equipment and trained and retrained according to the needs of the teaching/working process. The equipment is accessible to all staff involved in particular activities or tasks, not just to individuals. Especially younger staff members are encouraged to use the equipment. The soil laboratory is regularly used by students of Forest ecology department and they can benefit from the ITC equipment, particularly within teaching/learning activities. Laboratory and field equipment can be used for various research activities of bachelor, master and PhD students, as well as teaching staff in the future. The acquired equipment will enable, in addition to teaching, the implementation of project activities and the testing of soil samples for interested person, which will provide sufficient funds for maintenance of the equipment.

![](_page_27_Picture_0.jpeg)

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![](_page_27_Picture_2.jpeg)

## **5. PHOTOS OF EQUIPMENT** Laboratory equipment

![](_page_27_Picture_4.jpeg)

Figure 17. Sieve for sieving soil samples (mesh opening: 0.25 mm)

![](_page_28_Picture_0.jpeg)

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![](_page_28_Picture_3.jpeg)

![](_page_28_Picture_4.jpeg)

Figure 18. Sieve for sieving soil samples (mesh opening: 2 mm)

![](_page_29_Picture_0.jpeg)

Co-funded by the Erasmus+ Programme of the European Union

![](_page_29_Picture_3.jpeg)

![](_page_29_Picture_4.jpeg)

Figure 19. UV/VIS spectrophotometer

![](_page_30_Picture_0.jpeg)

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![](_page_30_Picture_3.jpeg)

![](_page_30_Picture_4.jpeg)

Figure 20. Flame photometer with compressor

![](_page_31_Picture_0.jpeg)

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![](_page_31_Picture_3.jpeg)

![](_page_31_Picture_4.jpeg)

Figure 21. Pipette apparatus, table model set for 7 samples

![](_page_32_Picture_0.jpeg)

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![](_page_32_Picture_3.jpeg)

![](_page_32_Picture_4.jpeg)

Figure 22. Penetrologger with GPS

![](_page_33_Picture_0.jpeg)

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![](_page_33_Picture_2.jpeg)

## **ITC equipment**

![](_page_33_Picture_4.jpeg)

Figure 23. Laptop Dell XPS 13-7390 i7 10510

![](_page_33_Picture_6.jpeg)

Figure 24. AIO computer Dell Inspirion 22-3277+Win 10PRO

![](_page_34_Picture_0.jpeg)

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![](_page_34_Picture_3.jpeg)

![](_page_34_Picture_4.jpeg)

Figure 25. Dell AIO Inspirion 22-3277 FHD 21,5 DAIO22-P-4-1-TV-56

![](_page_35_Picture_0.jpeg)

![](_page_35_Picture_2.jpeg)

## UNIVERSITY OF SARAJEVO (P5) REPORT ON ACQUIRED EQUIPMENT AND ESTABLISHED LABORATORY LABORATORY DESCRIPTION

Educational laboratory was improved with the purchase of flame spectrometer (Laboratory equipment 20 AM 086) needed for soil quality assessments. This laboratory serves for master students' practical work related to improved ongoing subjects in field of soil erosion control and soil protection. The IT equipment is placed at Faculty of Forestry projector and laptop in the IT room (number 105), desktop computers, UPS, printers, cameras and GPS to teachers' offices. The IT equipment like GPS, camera, laptops, tablets are used by students and teaching staff of UNSA for teaching/learning purposes as well as for research activities in field.

### LIST OF EQUIPMENT

### EDUCATIONAL LABORATORY

No.	Name of item	Quantity	The purpose
SETO	F computer lab		
1	Flame photometer: LFP A20 (contract no. 0101-4548-12/20 od 21.7.2020.; inv. no. 3670) Figure1	1	Research, teaching and other purposes in the computer lab.

![](_page_35_Picture_8.jpeg)

Figure 26. Laboratory for soil and plant at Faculty of Forestry UNSA

![](_page_36_Picture_0.jpeg)

![](_page_36_Picture_2.jpeg)

#### IT Equipment

No.	Name of item	Quantity	The purpose	
SETOF computer lab				
1	Camera: CANON EOS800 EF-S 18-55 IS STM (contract no. 0101- 7317-5/20 od 27.7.2020.; inv. no. 3668, 3669)	2	Research, teaching and other purposes in the computer lab.	
2	GPS: MobilMapper 50 4G (contract no. 0101-3154-3120 od 9.6.2020.; inv. no. 3671))	1	Research, teaching and other purposes in the computer lab.	
3	Laptop: OMEN by HP Laptop 17- cb1019nm+Office (contract no. 0101-4547-9/20 od 15.7.2020.; inv. no. 3672, 3673, 3674)	3	Research, teaching and other purposes in the computer lab.	
4	Computer: AiO Dell Optiplex 7770 AIO+Office (contract no. 0101-4547-9/20 od 15.7.2020. inv. no. 3675)	1	Research, teaching and other purposes in the computer lab.	
5	Computer: 400G6PD MT	-	Research teaching and other purposes	
5	(7EL74EA)+Office (contract no. 0101-4547-9/20 od 15.7.2020.;		in the computer lab.	
	inv. no. 3676, 3677, 3678)	3		
6	Monitor: P2t19H (contract no. 0101-4547-9/20 od 15.7.2020. inv. no. 3679, 3680, 3681)	3	Research, teaching and other purposes in the computer lab.	
7	Printer: Laser Jet Pro M436n (contract no. 0101-4547-9/20 od 15.7.2020., inv. no. 3682)	1	Research, teaching and other purposes in the computer lab.	
8	Printer: LBP223dw (contract no. 0101-4547-9/20 od 15.7.2020.; inv. no. 3683, 3684, 3685)	3	Research, teaching and other purposes in the computer lab.	
9	Projector: EB-980W (V11H866040) (contract no. 0101-4547-9/20 od 15.7.2020. inv. no. 3686, 3687)	2	Research, teaching and other purposes in the computer lab.	

![](_page_37_Picture_0.jpeg)

![](_page_37_Picture_2.jpeg)

10	UPS: APC900VA/540W BR900GI (contract no. 0101- 4547-9/20 od 15.7.2020.; 3688,		Research, teaching and other purposes in the computer lab.
	3689, 3890)	3	
11	iPAD: pro 12,9" wifi 256GB (contract no. 0101-4547-9/20 od 15.7.2020. inv. no. 3691, 3692)	2	Research, teaching and other purposes in the computer lab.

![](_page_37_Picture_4.jpeg)

![](_page_37_Picture_5.jpeg)

#### Figure 27. IT Equipment

Software

No.	Name of item	Quantity	The purpose
SETO	F computer lab		
1	Software: ArcGIS (contract no. 0101-7273-8/20 od 30.7.2020.; -)	1	Research, teaching and other purposes in the computer lab.

![](_page_38_Picture_0.jpeg)

Co-funded by the Erasmus+ Programme of the European Union

![](_page_38_Picture_3.jpeg)

![](_page_38_Picture_4.jpeg)

Figure 28. ArcGIS Software