

Balkan & Black Sea Regional Meeting

May 8-11th, 2023

Petrovac, Montenegro



Funded by the European Union



ONE HEALTH APPROACH

Veterinary sector experience

dr Radoš Miković, dr Bojan Adžić, mr Dejan Laušević, Marko Nikolić DVM

Vetreinary Diagnostic Laboratory

Podgorica, Montenegro



Laboratory examination

- Legal Framework
- Administration for Food safety, Veterinary and Phytosanitari Affairs
- Veterinary administration carry out tasks within the competence of the Administration determined by laws in the field of veterinary medicine, identification and registration of animals, protection of animal welfare, veterinary drugs, agriculture, market standards and organize and carry out official controls/inspection supervision in accordance with the powers established by this and other laws.

- Veterinary Diagnostic Laboratory

- **Vetrinary Law\ rulebooks**

Disease detection

- Surveillance in accordance with the Program of mandatory measures for the health protection of animals in the current year.

Food safety

- Surveillance in accordance with the Program of Measures of food and feed safety in the current year.
- which is adopted and implemented for the current year (**annually**)



Intersectoral cooperation in Montenegro

- Within the framework of the one health approach, significant forms of intersectoral cooperation have been established in the last decades.
- Cooperation in accordance with legal regulations
- Prescribed exchange of information: **food-borne diseases, zoonoses, vector-borne diseases, diseases of major public importance**
- Joint cooperation in epidemiological research
- Expert groups
- Exchange of monthly reports
- Cooperation with entomologists and ornithologists within the Program of measures against dangerous infectious diseases of animals
- Joint lecture at CANU on vector-borne infectious diseases (Dr. Adžić and Dr. Medenica, 2016)



AMR and Residue

- Institute for Public Health (IJZ) held a round table on the topic "United against bacterial resistance to antibiotics", organized by the IJZ, the Ministry of Health and the National Interdisciplinary Commission for the Control of Antibiotic Resistance (NIKRA).



Joint project activities

- **Medilabsecure Project I and II** (a European vector-borne disease control project for EU neighborhood countries involving the sectors of human and animal virology, entomology, public health and meteorology, **dr Danijela Vujosevic, dr Bojan Adzic, dr Igor Pajovic, dr Sanja Medenica, dr Nebojsa Sekulic**)
- **WHO project** (operational readiness to combat vector-borne diseases, cooperation between the public health and veterinary sectors), **dr Bojan Adzic**
- **Influenza project** (CDC project, cooperation between the public health sector, the veterinary sector - animal virology and the human virology sector), leaders - **dr Bozdarka Rakocevic, dr Zekovic**
- **Hum-Anima Project** (national project of Ministry of Science of Montenegro), **leader dr Bojan Adzic**
- **Zoonotics diseases action – ZODIAC** / IAEA (regional veterinary lab. Adapting SOP for lab examination and support for writing the project proposal, counterpart **dr Bojan Adzic**)
- Improvement of the vector-borne diseases, surveillance system through monitoring of Culicoides activity during the winter months on the territory of Montenegro) **CulMont** project FAO EuFMD project, leader **dr Ivana Zuber Bogdanovic**
- Within the Ministry of Health the Group of Experts (for vector\vector borne diseases) was established. The group made a Program for surveillance of vectors / VBD in the period 2023-2025.



Difficulties

- Better cooperation with ecologists would be necessary
- No data exchanging with meteorologists
- Small number of experts in entomology (especially for ticks and sand flies)
- Although collaboration with IPH is excellent, collaboration with Center for infectious diseases should be enhanced
- Training courses in the field of One Health should be organized continuously



THANK YOU FOR YOUR
ATTENTION



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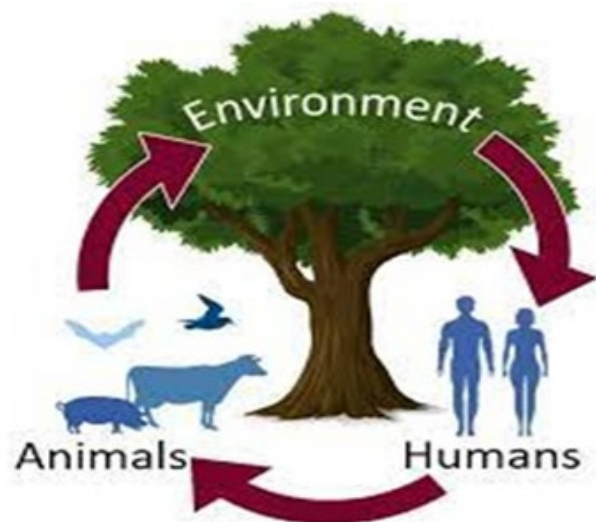
EXPERIENCES OF THE ONE HEALTH APPROACH IN MONTENEGRO



Sanja Medenica, Bojan Adžić, Enisa Kujundžić, Nebojša Sekulić, Danijela Vujošević, Marijana Mimović
Institute for Public Health of Montenegro, Montenegro
Specialist Veterinary Laboratory of Montenegro, Montenegro

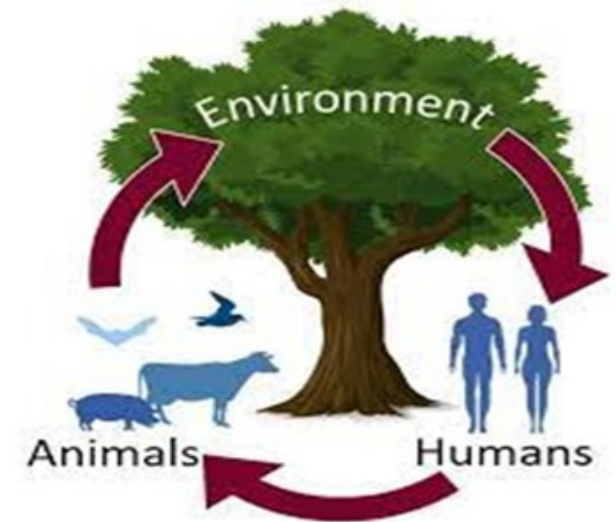
Regulatory Framework

- **Law on the Protection of Population against Communicable Diseases** (Official Gazette of Montenegro ('OG') No. 064/20; 059/21));
 - mandatory reporting of communicable diseases
 - mandatory reporting of epidemics
 - information exchange between public healthcare institutions and the food and veterinary sector (in the case of zoonosis and foodborne diseases)
- **Rulebook on the list of communicable diseases** that are subject to epidemiological surveillance and prevention and control measures, and case definitions (OG, No. 20/2019, 23/2020 i 41/2020)
 - a list of notifiable disease and conditions subject (84 communicable diseases)
 - case definitions (in line with the European Union Directive 2018/945 of 22 June 2018)
- **Rulebook on reporting** communicable diseases, hospital inspections, conditions and mortality caused by these diseases (OG MN, No. 023/20 041/20)
 - Who is notifying - doctors of medicine, microbiologists
 - Timeframes - urgent notification; individual notification of communicable disease within 24 hours from the establishment of diagnosis (clinical or laboratory)
 - What is reported - application form (list of variables)
 - How to report - electronic registration (individual notification of communicable, collective notification)
 - To whom is reported - National Register of Notifiable Communicable Diseases kept by the Center for Control and Prevention of Communicable Diseases of the Public Health Institute
- **Law on Data Collections in the Health area**
 - Register of infectious diseases
 - HIV / AIDS Register
 - Register of tuberculosis



Joint activities of the humane and veterinary sectors

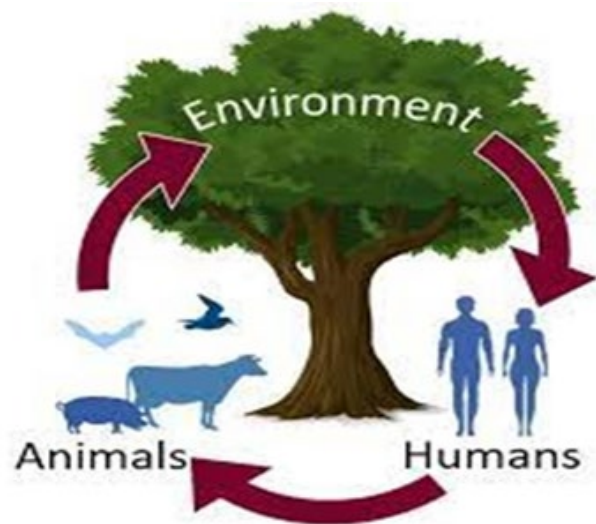
- According to the legal regulations, cooperation between the humane and veterinary sectors is established, the Law on the Protection of the Population against Infectious Diseases, the Regulations.
- Set exchange of information - defined diseases, food-borne diseases, zoonoses, certain suspected infectious diseases of higher public health importance.
- Joint research defined by law (in case of zoonoses and food-borne diseases).



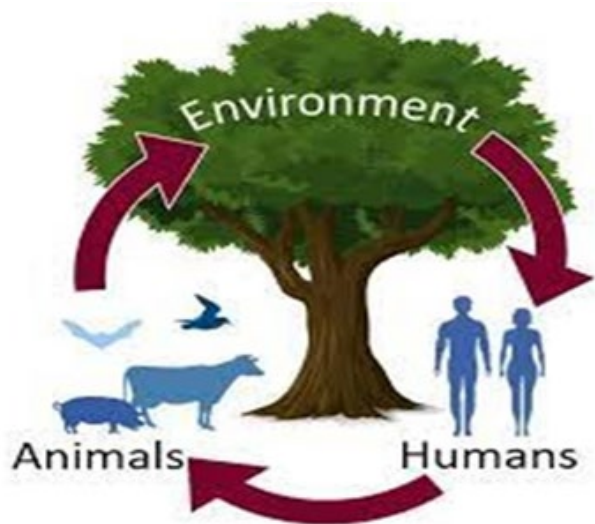


Joint activities of the humane and veterinary sectors

- Exchange of reports defined by law.
- Food safety monitoring (Directorate for Food Safety, Veterinary and Phytosanitary Affairs, Institute for Public Health, Specialist Veterinary Laboratory, Center for Ecotoxicological Research)
- Joint cooperation within the international project Medilabsecure (Pasteur Institute - Paris, CISA-INIA Madrid, Instituto Superiore di Sanita Rome (public health, human and animal virology, entomology). From Montenegro the Institute for Public Health, the Diagnostic Veterinary Laboratory and the Biotechnical Faculty are included.
- Invited lecturing in 2016 at the Montenegrin Academy of Sciences and Arts (vector diseases and zoonoses) - representatives of the IPH, Clinical Center, SVL, Biotechnical Faculty.



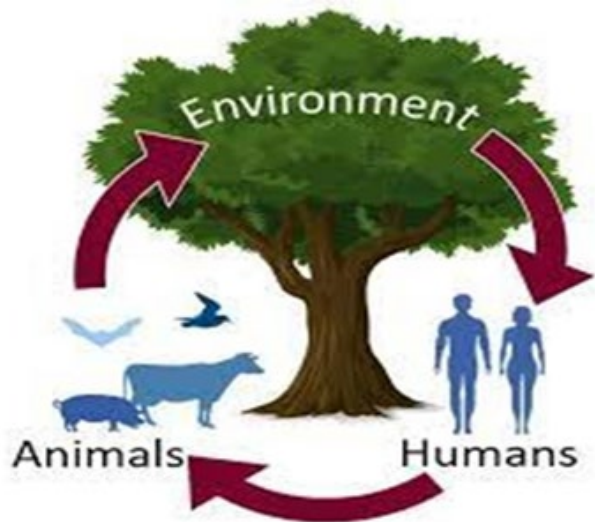
Joint activities of the humane and veterinary sectors



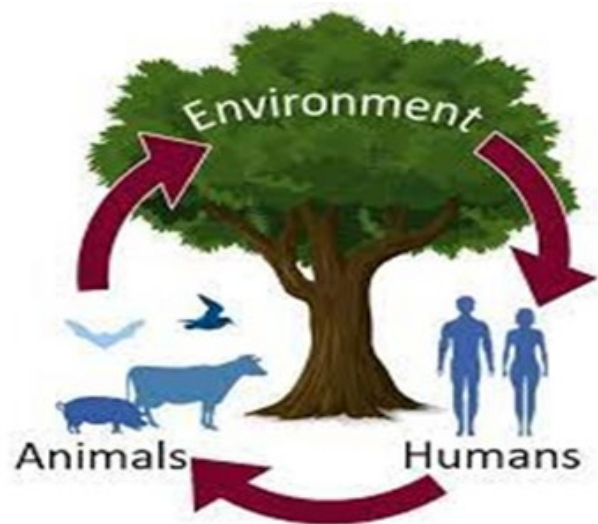
- International scientific project Lovćen included Institute of Public Health, Biotechnical Faculty. Collaborative multidisciplinary research on native and invasive species of mosquitoes and pathogens they can transmit in Montenegro and the development of non-pesticide measures to combat mosquitoes - <http://project-lovcen.me/index.php>
- National project of the Ministry of Science – Hum-Anima, project manager is from Specialistic Veterinary Laboratory of Montenegro, IPHMNE was involved, public health and virology, molecular diagnostics
- Eri Health regional cross-border project - where experts from different professions, epidemiologists and entomologists, veterinarians, have been working on the surveillance of mosquitoes, i.e. their capture, determination, and proof of potential pathogens or viruses in them, important for public health.
- Program for Surveillance and Control of Vectors , multi-sectoral and multi-professional approach to production - ACCEPTED.

Joint activities of the humane and veterinary sectors

- Collaboration with the Robert Koch Institute, Berlin on multisectoral response to public health threats.
- IHR Summer School in Berlin - Topic: IHR International Health Regulations (representatives of public health, veterinary sector, border police, airports).
- Collaboration with the Robert Koch Institute - One health - Epidemic research and response guidelines is being prepared, involving representatives of the public health and veterinary sectors, sanitary inspection.



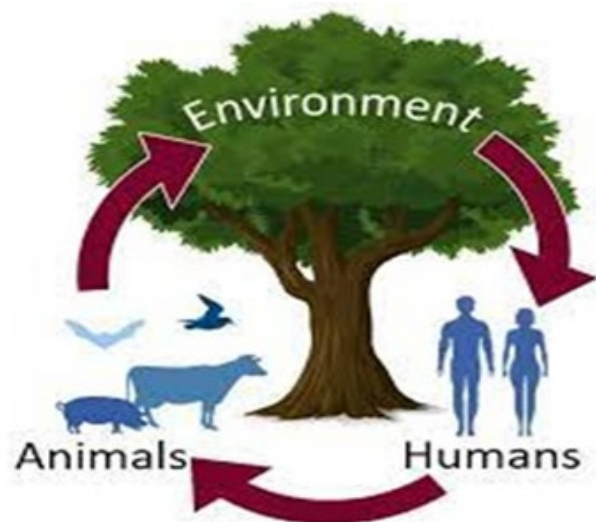
Joint activities of the humane and veterinary sectors



- Promotion of the “One Health” concept with a focus on strengthening capacity for the implementation of integrated surveillance of zoonoses and food-borne diseases and risks to public health of animal origin - WHO 06.13.-17 June 2022. Podgorica, Montenegro
- Representatives of Montenegro participated in the 1st ONE Health regional conference, Zenica, Bosnia and Herzegovina, June 2022.

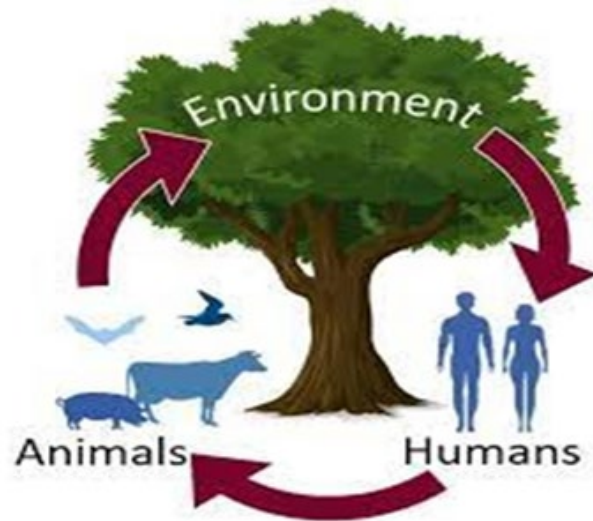
Joint activities of the humane and veterinary sectors

- The National action plan for Health security is being prepared as a continuation of activities after the JEE Joint external evaluation from 2019. WHO. Multi-sectoral and multi-professional approach to document development.



- Participation in "ONE - HEALTH, Environment, Society - Conference" in Brussels in 2022.
- Participation on EFSA on-line meeting ONE HEALTH Module for IPA beneficiaries, 30-31 January 2023.
- Participation in the Sub-regional workshop on One Health: An interdisciplinary approach to address foodborne and zoonotic diseases in the Western Balkans - Skopje, North Macedonia, 22-23 February 2023

3 papers presented as oral presentations:



- **“SURVEILLANCE OF INFECTIOUS DISEASES IN MONTENEGRO – EXPERIENCES OF THE ONE HEALTH APPROACH”**

Sanja Medenica, Božidarka Rakočević, Bojan Adžić, Darinka Marković, Zorica Đorđević
Institute for Public Health of Montenegro Podgorica, Montenegro

- **“EPIDEMIOLOGICAL CHARACTERISTICS OF HEMORRHAGIC FEVER WITH RENAL SYNDROME IN MONTENEGRO FROM 2011 TO 2020”**

Božidarka Rakočević, Sanja Medenica, Željka Zeković, Danijela Rajković, Zorica Đorđević
Institute for Public Health of Montenegro Podgorica, Montenegro

- **“EPIZOOTIOLOGICAL SITUATION IN MONTENEGRO IN 2022”**

Dejan Laušević
Specialist Veterinary Laboratory of Montenegro, Montenegro




We have published more than twenty papers in this field in national and international journals. The last ones were published:



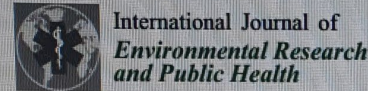
Article

Climate Variables Related to the Incidence of Human Leishmaniosis in Montenegro in Southeastern Europe during Seven Decades (1945–2014)

Sanja Medenica ¹, Nataša Miladinović-Tasić ^{2,3}, Nikola M. Stojanović ^{4,*} , Novak Lakićević ⁵ and Božidarka Rakočević ¹

- ¹ Public Health Institute Podgorica, 81110 Podgorica, Montenegro
- ² Department of Microbiology and Immunology, Faculty of Medicine, University of Niš, 18000 Niš, Serbia
- ³ Center of Microbiology, Public Health Institute Niš, 18000 Niš, Serbia
- ⁴ Department of Physiology, Faculty of Medicine, University of Niš, 18000 Niš, Serbia
- ⁵ Clinical Center of Montenegro, 81110 Podgorica, Montenegro
- * Correspondence: nikola.st90@yahoo.com; Tel.: +381-18-42-26-644

Abstract: Leishmaniosis (or leishmaniasis) is a neglected parasitosis most commonly transmitted by the sandfly bite. Changes in temperature, precipitation, and humidity can greatly affect the vectors and reservoir hosts. This study aimed to determine the association between temperature, air humidity, and weather conditions with the incidence of leishmaniasis in Montenegro during



Article

Food Safety Behaviours among Food Handlers in Different Food Service Establishments in Montenegro

Snežana Barjaktarović Labović ^{1,*}, Ivana Joksimović ¹, Igor Galić ¹, Miro Knežević ² and Marijana Mimović ¹

- ¹ Institute of Public Health, John Jackson bb, 81 000 Podgorica, Montenegro
- ² Clinical Centar Podgorica, Ljubljanska bb, 81 000 Podgorica, Montenegro
- * Correspondence: snezanab.labovic@ijzcg.me; Tel.: +382-67393506

Abstract: Foodborne diseases in food facilities are a major public health problem, due mostly to the limited surveillance and educational level of food-handling workers. This study was conducted in 220 food service locations in Montenegro. Participants' behaviour was assessed by a survey using the specifically designed structured questionnaire, administered before and after the training. To determine the effect of the training on the performance of food handlers, a microbiological analysis of food contact surfaces and food handlers' hands was also performed. The behaviour of





We have published more than twenty papers in this field in national and international journals. The last ones were published:

Eurosurveillance ☰ 🔍

Surveillance 🔒 Open Access

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Epidemiology of human West Nile virus infections in the European Union and enlargement countries, 2010 to 2018

[Check for updates](#)

Johanna J Young^{1,2}, Joana M Haussig^{1,2}, Stephan W Aberle³, Danai Pervanidou⁴, Flavia Riccardo⁵, Nebojša Sekulić⁶, Tamás Bakonyi¹, Céline M Gossner¹

Journal of Environmental Protection and Ecology 23, No 8, 3601–3607 (2022)
Public health

RETROSPECTIVE EPIDEMIOLOGICAL STUDY OF LEISHMANIOSIS/LEISHMANIASIS IN MONTENEGRO DURING SEVEN DECADES OF MONITORING (1945–2014)

S. MEDENICA^a, N. MILADINOVIC-TASIC^{b,c*}, B. RAKOCEVIC^a, N. LAKICEVIC^d, M. KOCHUBOVSKI^e

^aPublic Health Institute Podgorica, Podgorica, Montenegro

^bDepartment of Microbiology and Immunology, Faculty of Medicine, University of Nis, Nis, Serbia

^cCentre of Microbiology, Public Health Institute Nis, Serbia

^dClinical Centre of Montenegro, Podgorica, Montenegro

^eInstitute of Public Health of the Republic of North Macedonia, Skopje,





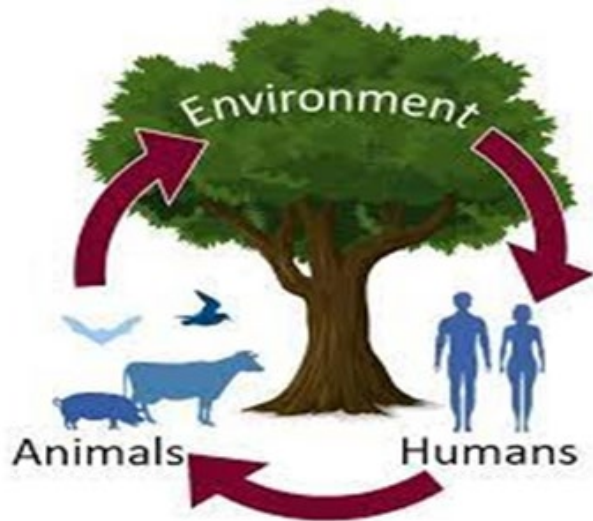
Planned activity

- **2nd regional ONE HEALTH conference** within the Balkan ONE HEALTH network will be held in Montenegro 23 June 2023 in Budva Montenegro.
 - **BOHN - Balkan ONE HEALTH network** - consists of a network of public health institutes and veterinary institutes - Institute for Health and Food Safety Zenica - Bosnia and Herzegovina; Institute of Public Health of Vojvodina, Scientific Institute of Veterinary Science "Novi Sad" Vojvodina - Serbia; Institute for Public Health of the Republic of North Macedonia, Faculty of Veterinary Medicine Skopje - Macedonia, Institute for Public Health of Montenegro, Specialist Veterinary Laboratory, Podgorica - Montenegro. Signed Protocol on Cooperation.
- Some BOHN specifications:
- BOHN RECOGNIZES, on a regional and global scale, an appropriate area for determining a joint strategy for future development, with the ultimate goal of scientific and technological connection and integration of the Balkan countries into the global flows of the concept of One Health.
 - BOHN BELIEVES that the values contained in the One Health approach are the basis for improving the health and well-being of people, animals, plants and their shared natural environment;
 - BOHN - ATTENDS to connect and cooperate with organizations/institutions in other European countries, etc. as soon as possible.



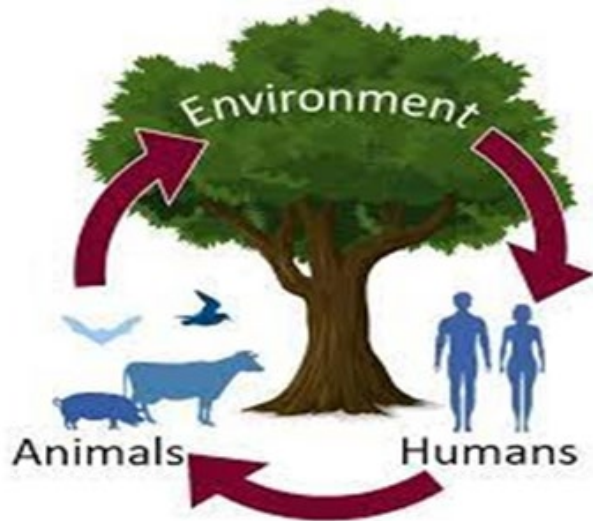
Challenges for operationalizing the ONE HEALTH concept

- Financial support (government, donors, funds, etc.)
- People with the knowledge to understand the concept of “One Health” - policy makers
- Establishing a coordination and communication mechanism at all levels between sectors (reporting or data exchange systems, etc.)
- Not enough joint simulation exercises
- Insufficient joint research on different zoonoses

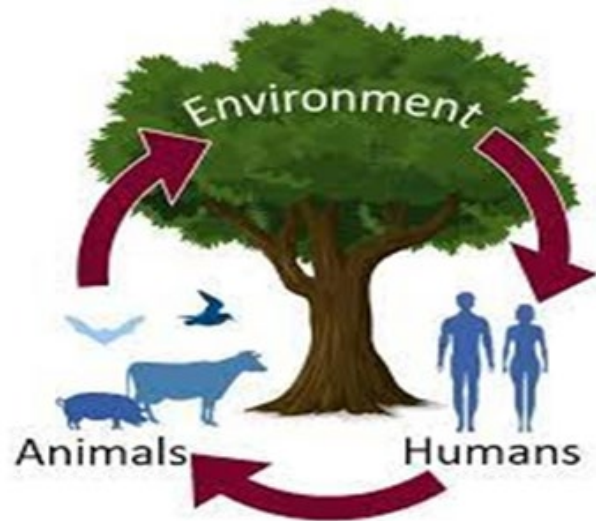


Challenges for operationalizing the ONE HEALTH concept

- Stronger operational capacities (SOPs, instructions, joint simulation exercises, etc.), laboratory training
- Lack of human resources (important experience of senior colleagues in certain fields)
- Lack of an electronic platform for sharing information at local, regional, national and international levels.
- Mechanism for cross-border disease surveillance and monitoring

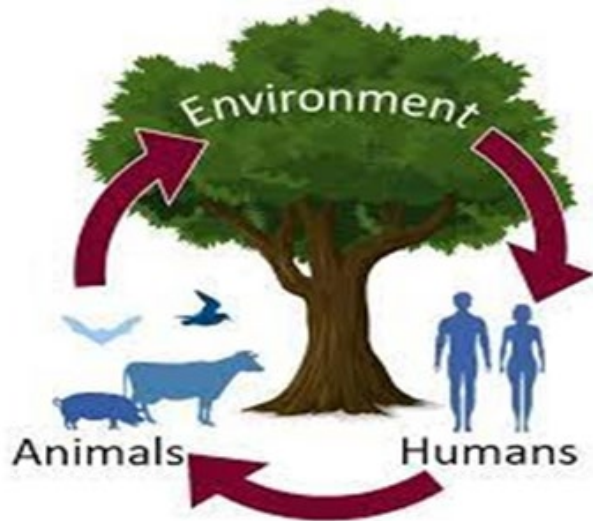


Possible future steps



- Raising the awareness of high-level decision makers in the country about the concept of "ONE HEALTH"
- Advocating for the "ONE HEALTH" concept at the highest levels that have the power to mobilize multiple sectors (Government bodies, Parliamentary Health Committees, Ministers, Assistant Ministers, Secretaries of State, etc.) and obtaining their commitment to operationalize the "ONE HEALTH" concept
- Formation of permanent multi-sector "ONE HEALTH" committees

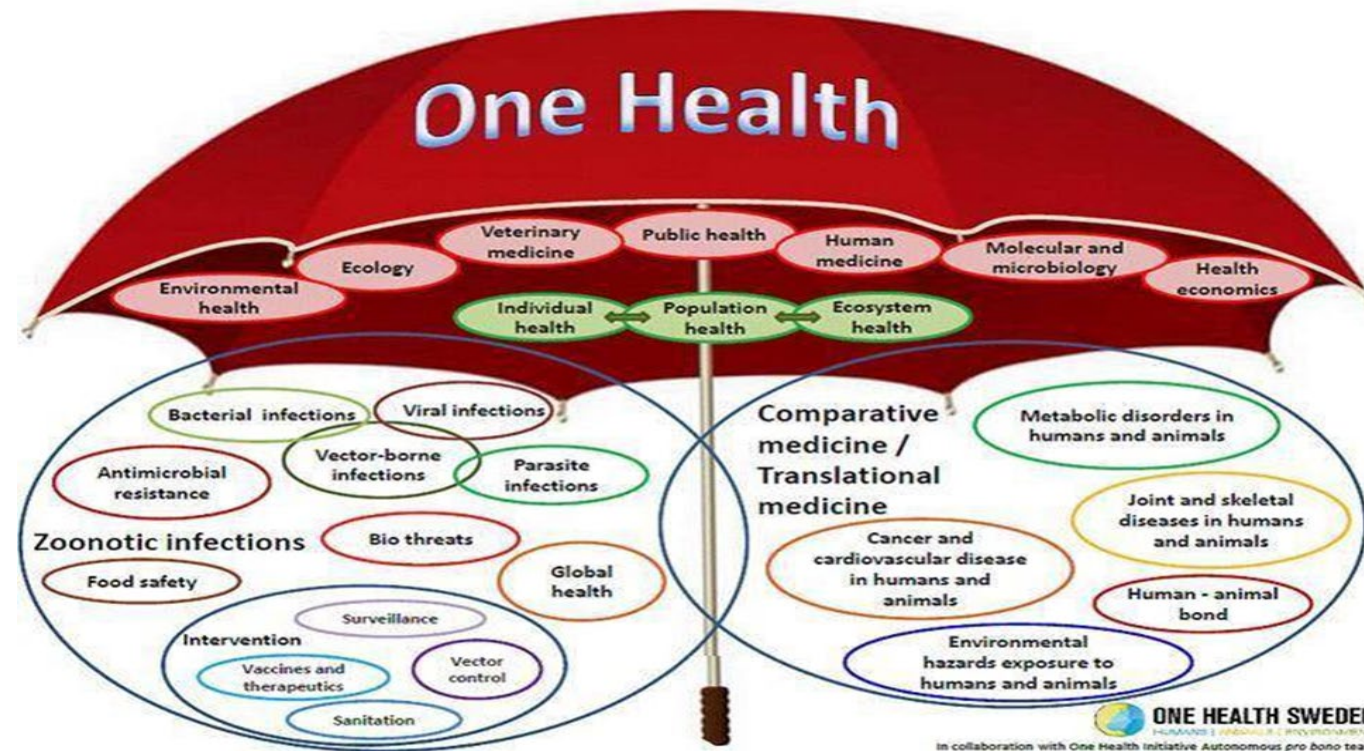
Possible future steps



- Integrated national electronic database and platform with shared access and use;
- Establish sustainable financing/budget for One Health bodies;
- Establish ongoing programs on OneHealth for public health professionals, veterinarians, environmentalists, entomologists and include them in educational programs (in some countries at the undergraduate and/or post-graduate level);



Conclusion



Multisectoral cooperation and promotion of joint initiatives of the One Health approach is the best response on routine challenges and public health threats.

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Recent vectors surveillance history & One Health initiative in Montenegro



University of Montenegro
Biotechnical faculty

assistant professor Igor Pajović



Pre History!

1973. – WHO declare SFRY as well as Montenegro as Malaria free region



25. April 2023. at IPH we celebrate 50 years anniversary as Malaria free country

Next 3 decades nothing happened !!!

OK, neither historical, sociological and all other conditions were not best for Vectors Surveillance beginning 2001. – *Aedes albopictus* was intercepted in Montenegro and the Story just starts....



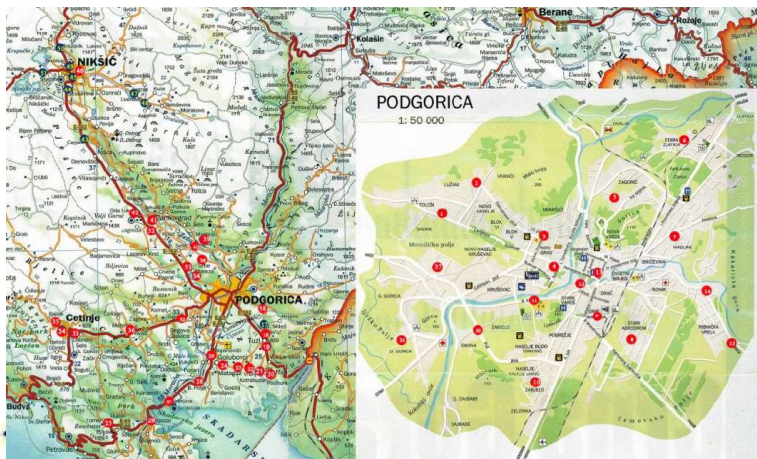
MediLabSecure

Queen

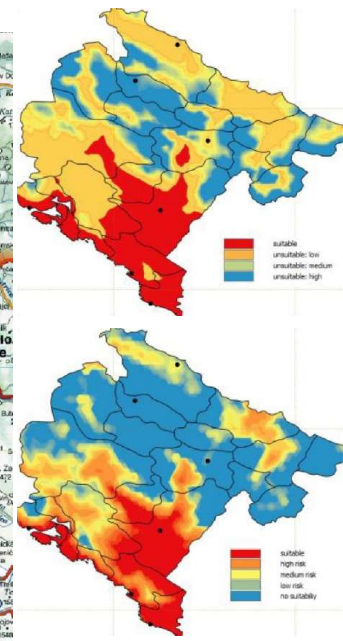
Start

Empty spaces, what are we living for?

For the next decade and from 2012-2015 through the national project “Determining the distribution and abundance of the invasive species *St. albopicta* in Montenegro”; the invasion of new territory & the population level of the species in different parts of Montenegro were monitored.



Effort
Value



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WP1f LOVCEN - Climate change impact on MV and MBD, adaptation and mitigation

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Partners in all following actions



Collaboration



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IAEA
International Atomic Energy Agency
Atoms for Peace and Development

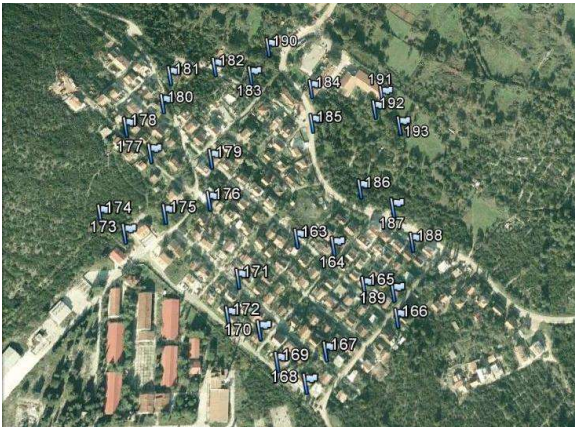
TCRER 5022
TCRER 5026

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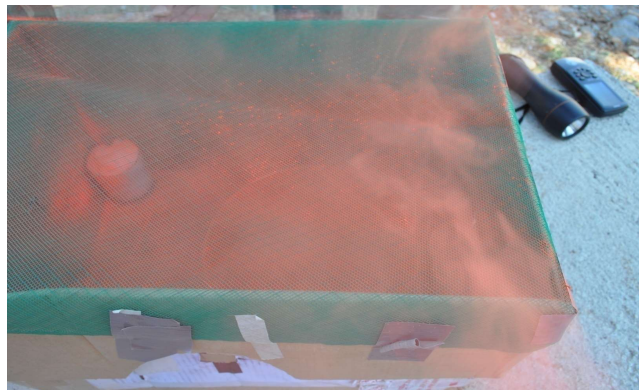


2013 - FP7-INFRASTRUCTURES INFRAVEC

"Research capacity for the implementation of genetic control of mosquitoes" - Integrating Activity number 228421 - "Testing the shipment methods and the international regulation for sterile mosquitoes delivery"



May 8th – 11th, 2023



AGENCIJA ZA ZAŠTITU ŽIVOTNE SREDINE
Environmental Protection Agency of the Republic of Serbia

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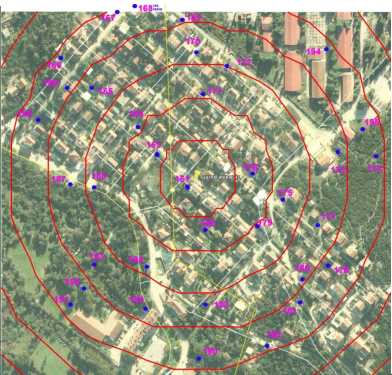
Effort

Value

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2014 – MRR trials



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Collaboration

Effort

Value

Balkan & Black Sea Regional Meeting



2013-2017 starts World Bank international project – LOVCEN

<http://project-lovcen.me>

The idea was to fill as many gaps as possible / on first place gaps in knowledge concerning mosquitoes in MNE.

Great support and help was received from partners from abroad - Cosmin Salasan from Romania; Romeo Bellini and Michele Dottori from Italy and Dusan Petrić, Aleksandra Ignjatović Ćupina and Mihaela Kavran from Serbia.

Very important breakthrough happened through LOVCEN Project – **the beginning of cooperation and connection between partners from the State:**
applicant institution - **Biotechnical faculty, University of Montenegro**
+ registered, national, scientific & research institutions: **Institute for Hydrometeorology and Seismology, Institute for Public Health and Natural History Museum. (SVL was not scientific institution by WB rules)!**

LOVCEN combined capacity building and research in different scientific disciplines

(WP1) Collaborative research on native/invasive mosquitoes and pathogens they transmit in Montenegro and development of non-pesticide control measures research

(WP2) Twinning through exchange of know-how and experience and dissemination activities trainings and dissemination

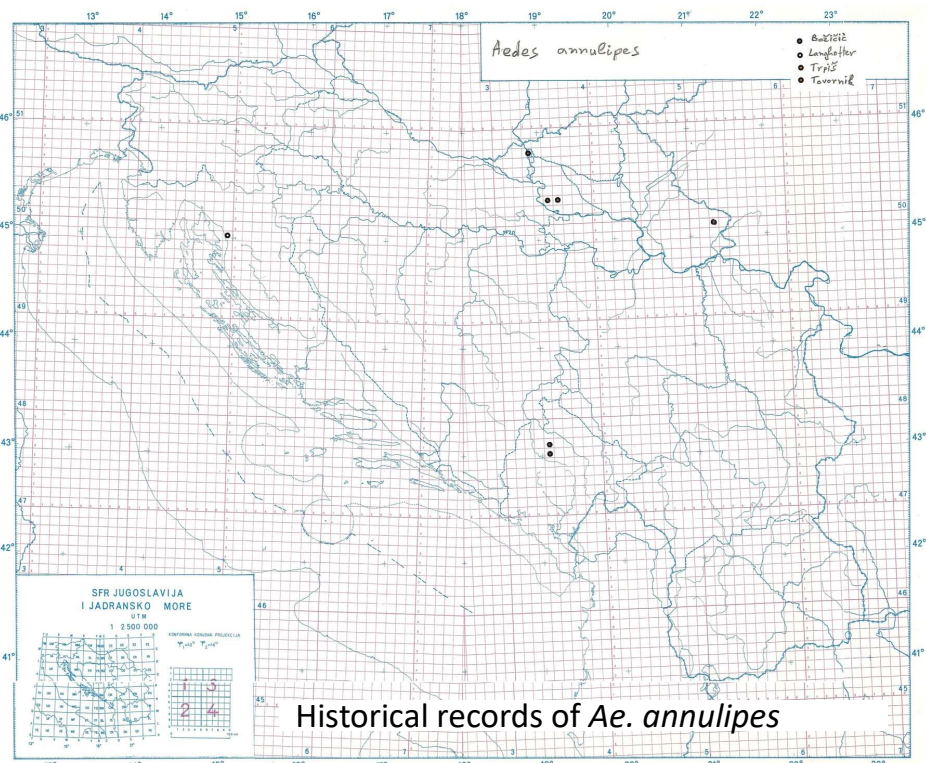
(WP3) Acquisition of research equipment and innovation capacity building

(WP4) Management

Collaboration



WP1a Surveillance of invasive and native mosquito



Historical data	- 15 species
2014	- 9 species
2015	- 8 species
2016	- 6 species
TOTAL	- 38 species

8 Vectors and 4 invasive species

1. *Anopheles maculipennis* (vector of malaria)
2. *An. plumbeus* (vector of malaria)
3. *An. saccharovi* (vector of malaria)
4. *Aedes vexans* (vector of Rift Valley Virus and Celovo Virus)
5. *Aedes caspius* (Rift Valley Virus, *Dirofilaria immitis* and *D. repens*)
6. *Aedes albopictus* (Chicungunia Virus, Dengue Virus, nematodes)
7. *Culex modestus* (West Nile Virus, nematodes)
8. *Culex pipiens* (West Nile Virus, Sindbis virus, Rift Valley Virus)



Value

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Prof Dušan Petrić, Prof Marija Zgomba, Prof Aleksandra Ignjatović
Ćupina, ass.prof Mihaela Kavran and a team from Agricultural Faculty
Novi Sad (Centre of excellence – One Health – Vectors & Climate)



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WP1a Surveillance of invasive in kind contribution: **Vectors check lists updates**

European network for sharing data on the geographic distribution of arthropod vectors, transmitting human and animal disease agents – **VectorNet**

Collaboration

Sandfly

Historical data - No
2014 - 5
TOTAL - 5 species

- Phlebotomus neglectus*
- P. tobii*
- P. simici*
- P. balcanicus*
- Sergentomyia minuta*

Professor Bulent Alten and his team from Hacettepe University



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Blackfly

Historical data - 5 species
2015 - 15
TOTAL - 20 species

Professor Aleksandra Ignjatović Ćupina
University Novi Sad



Value

<i>P. latimucro</i> (Enderlein, 1925)
<i>P. rufipes</i> (Meigen, 1830) complex
<i>S. bertrandi</i> Grenier & Dorier, 1959
<i>S. brevidens</i> (Rubtsov, 1956)
<i>S. ornatum</i> Meigen, 1818 (complex)

<i>S. rubzovianum</i> (Sherban, 1961)
<i>S. angustitarse</i> (Lundström, 1911)
<i>S. costatum</i> Friederichs, 1920
<i>S. cryophilum</i> (Rubtsov, 1959) (complex)
<i>S. argenteostriatum</i> Strobl, 1898
<i>S. bezzii</i> (Corti, 1914) (complex)
<i>S. degrangei</i> Dorier & Grenier, 1960
<i>S. intermedium</i> Roubaud, 1906
<i>S. reptans</i> (Linnaeus, 1758)
<i>S. argyreatum</i> Meigen, 1838
<i>S. variegatum</i> Meigen, 1818
<i>S. balcanicum</i> (Enderlein, 1924)
<i>S. equinum</i> (Linnaeus, 1758)
<i>S. lineatum</i> (Meigen, 1804)
<i>S. pseudequinum</i> Séguy, 1921

Ticks

Historical data - ?
2017 - 4 species
TOTAL - 4 species

- Hyalomma marginatum*
- Rhipicephalus sanguineus*
- Rhipicephalus bursa*
- Ixodes ricinus*

Professor Zati Vatansever from Hacettepe University



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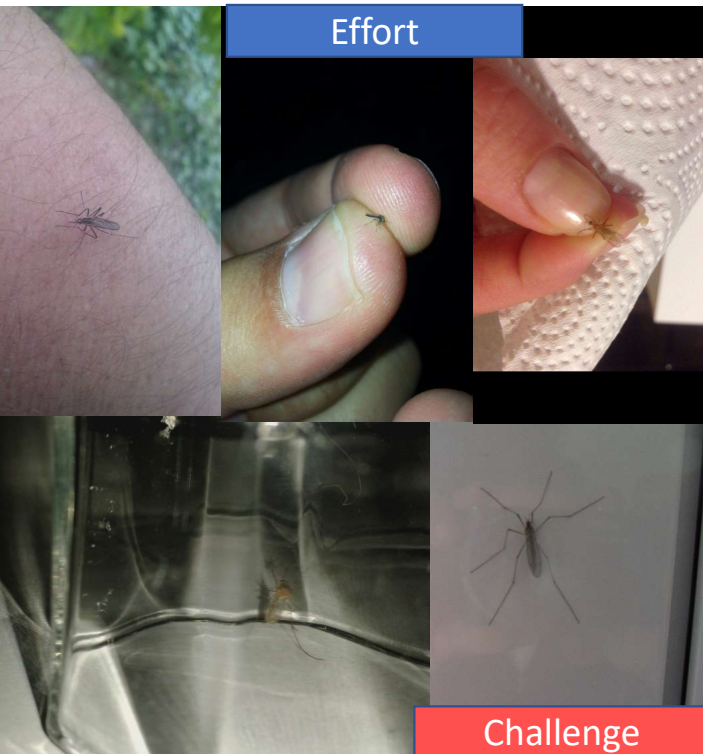


WP1b Mobile phone application WP1c Detection of pathogens in mosquitoes and humans

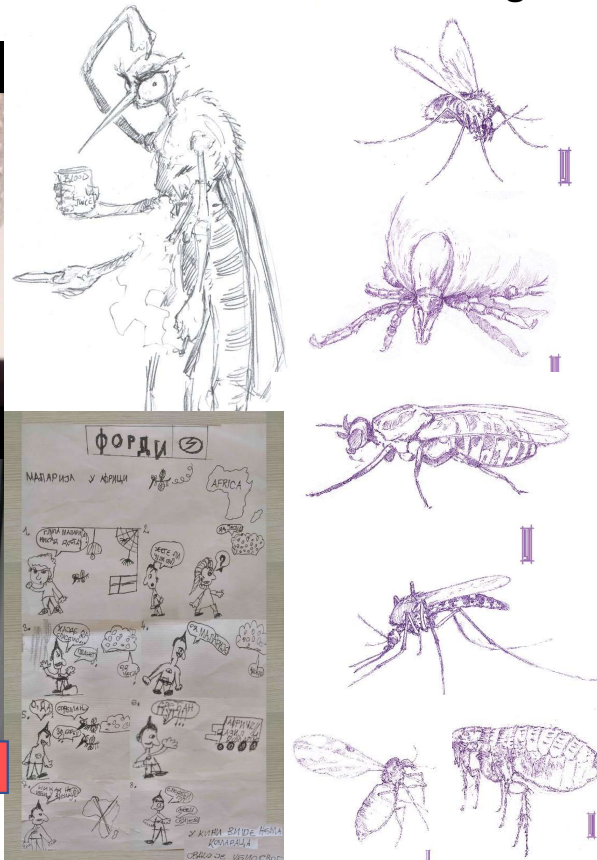
+ (WP2i) – Community participation in mosquito surveillance and control

Challenge

Komarac & Vector Inspect; 430 downloads and 38 received images



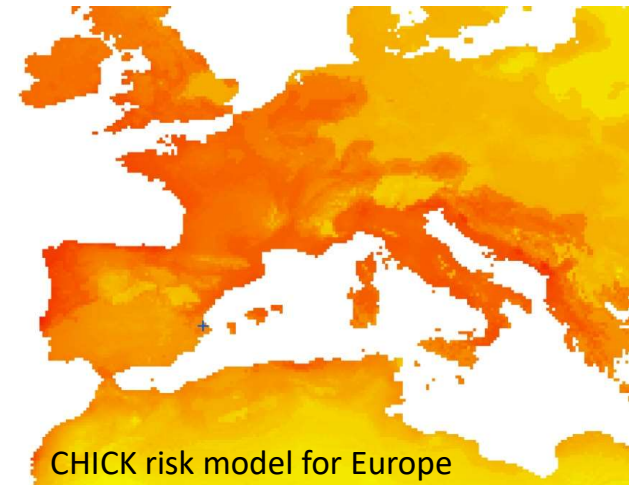
May 8th – 11th, 2023



2014 – 1990 + 17 samples

2015 - 483 + 28 samples: IPH

- Borrelia, Leishmania, Plasmodium
- Lyme boreliosis, West Nile Virus
- Malaria, Flavivirus, Bunyavirus
- Alphavirus, Phlebovirus, USUTU



CHICK risk model for Europe

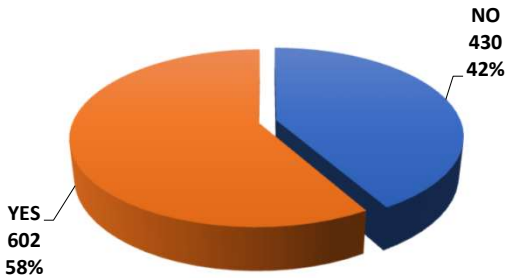
Balkan & Black Sea Regional Meeting



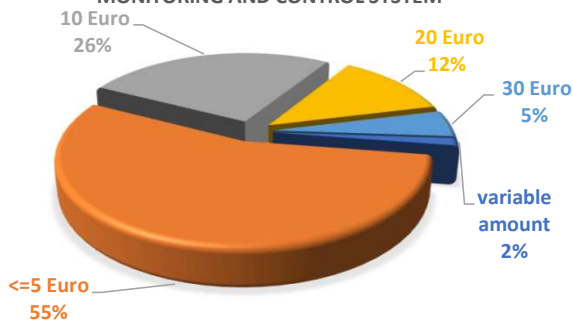
WP1d Social Impact and Policy Recommendation

1594 citizens; 16/25 municipalities; 12 touristic operators and 20/30 health care institutions answered.

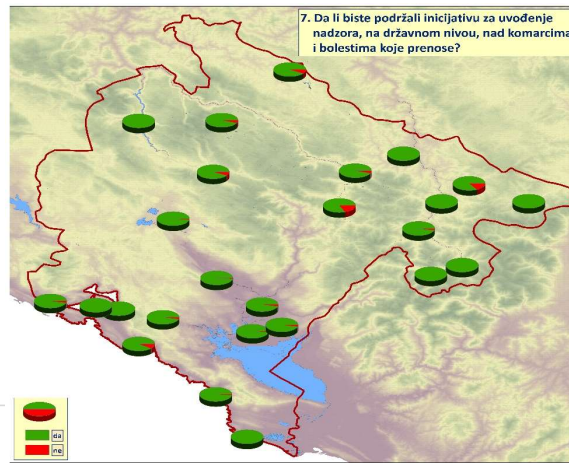
FINANCIALLY SUPPORTING A NATIONAL MONITORING AND CONTROL SYSTEM



SHARES OF FINANCIAL SUPPORT FOR THE NATIONAL MONITORING AND CONTROL SYSTEM

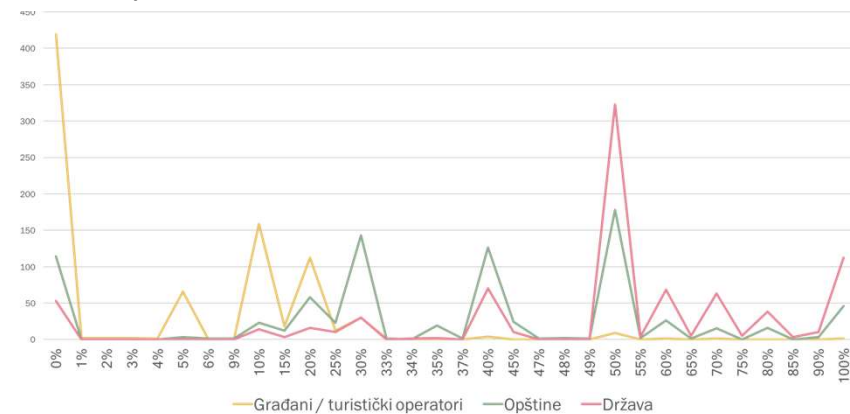


May 8th – 11th, 2023



Value

What do you think about cost bearing of MBD monitoring and mosquito control between citizens, Municipalities and Government (in %)?



Issue: Hazard high risk for public health from MBD with further negative economic outcomes for the country's economy (healthcare, tourism,...)

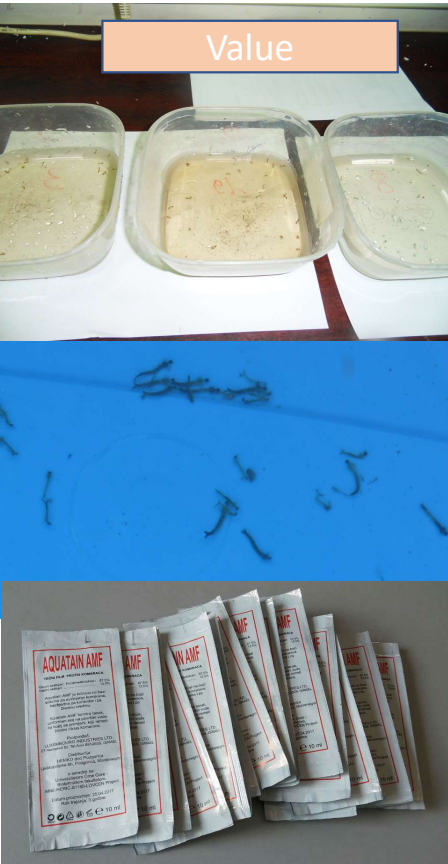
LOVCEN Policy Recommendation: Develop and Enforce the Specific Regulative Framework for the Integrated Mosquito and MBD Surveillance and Control System (IMSCS)

Challenge

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WP1e SIT and other non-chemical control methods



Value

May 8th – 11th, 2023

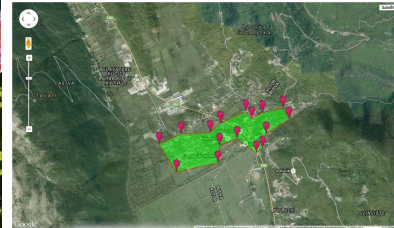


Sterile mosquitoes import & MRR

Assessment of risk for Chikungunya, Dengue and Zika Outbreak in Montenegro. Value



Tivat - 73.57 ha



Lastva Grbaljska - 30.21 ha

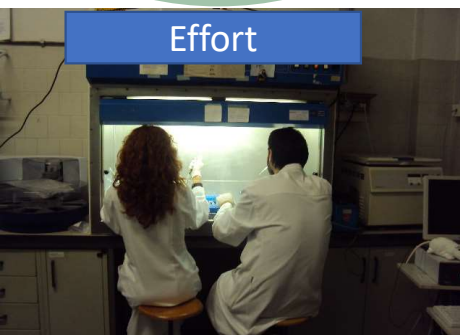


Radovici - 20.73 ha

Results: The *Ae. albopictus* population density may support outbreak of Chikungunya A226V, Chikungunya and Dengue viruses. Estimation indicates that also Zika virus may be able to produce outbreak in case of introduction.



WP2 Twinning through exchange of know-how and experience & dissemination activities



Effort

- **34 MOBILITIES**

3 / 4 / 5 / 6 / 7 / 10 / 14 dais

+ contributing to inter-project coaching and multi-sectoral collaboration like MLS Medical Entomology working group first workshop at Faculty of Agriculture Novi Sad, 8-12/6/2015.



+ Participation of the research staff at international conferences



like MLS first “Head of Laboratory” meeting, Institut Pasteur 14-15/1/2015 &

MLS Workshop at Institut Pasteur 14-17/12/2015



May 8th – 11th, 2023



Society for Vector Ecology

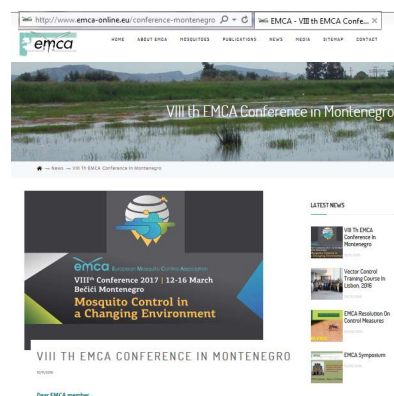
Strength

- **73 PERSONS** - researchers / students / trainers involved
 - in total **376 dais** (12.53/42 months of the Project duration)

Value

+ at end we organize:
 VIII Conference of European Mosquito Control Association, 12th-16th March, 2017 – Becici/Budva, Montenegro

Balkan & Black Sea Regional Meeting





WP2 Twinning through exchange of know-how and experience & dissemination activities

Designing web site

LOVCEN
Surveillance of mosquito-borne mosquito vectors and pathogens for health in Montenegro

Home About project Impact Results Materials LOVCEN WP2 Dissemination Photo gallery News Team page

About project

How much does mosquito bite cost?

About mosquitoes

3470 fliers on Montenegrin
+ 160 on English language distributed

LOVCEN
Surveillance of mosquito-borne mosquito vectors and pathogens for health in Montenegro

Koliko ubod komarca može da košta?

How much does mosquito bite cost?



Value



Value



MLS Exhibition 'Vectors and diseases'



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May 8th – 11th, 2023



WP2 Twinning through exchange of know-how and experience & dissemination activities

Public (radio, TV, newspapers) appearances, published papers...

Challenge

Laboratory open days



May 8th – 11th, 2023

Visibility at EU on going projects



Workshops and Round tables at UoM and MASA; at Ministry of Science Open Days. MediLabSecure all 3; VectorNet; MediPIET; EurNegVec COST Action TD1303; LIFE CONOPS project; TEMPUS LifeADA; ERASMUS+ HarISA

Innovation human capacity building

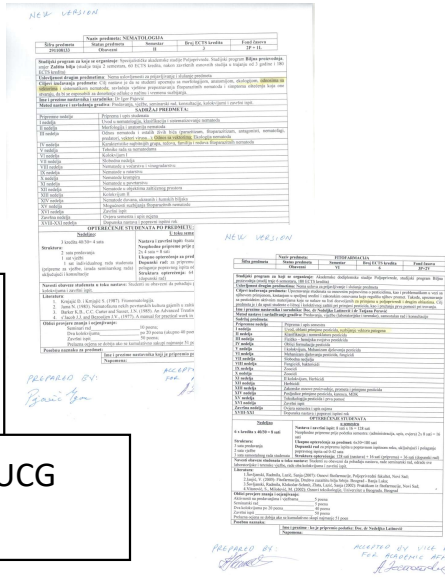
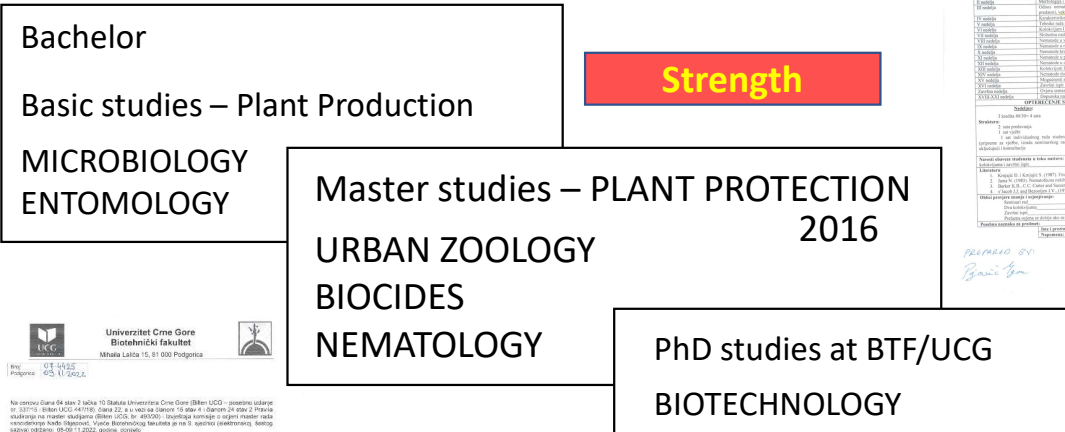


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WP2 Twinning through exchange of know-how and experience & dissemination activities

Introduction of teaching on MV and MBD



Internal dissemination meetings

60 internal meetings

in 42 months of the Project duration

with partners from Montenegro !!!

+ Science-technical agreement between BTF and IPH signed.



Balkan & Black Sea Regional Meeting

TEMPUS Project Lifelong Learning for sustainable agriculture in Alps-Danube-Adriatic region, LifeADA 544585-TEMPUS-1-2013-HR-TEMPUS-JPHESDA.

ERASMUS+ “Harmonization and Innovation in PhD Study Programs for Plant Health in Sustainable Agriculture” HarISA, No: 598444-EPP-1-2018-1-HR-EPPKA2-CBHE-JP.

Univerzitet Crne Gore

 Biotehnički fakultet

 Mrlaka Latica 15, 81 000 Podgorica

 22.11.2022.

 May 8th – 11th, 2023



WP3 Acquisition of equipment and materials



Value

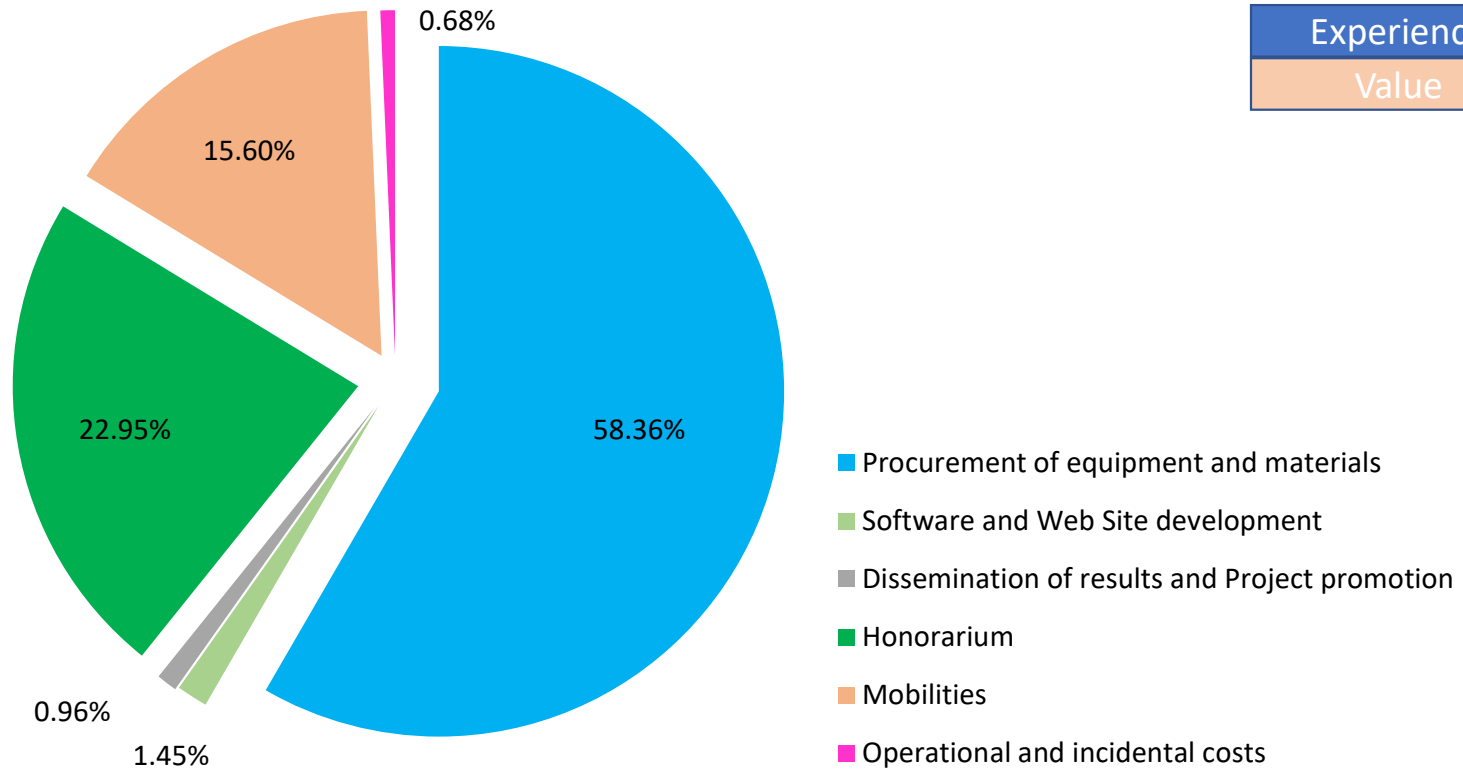


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WP4 Management

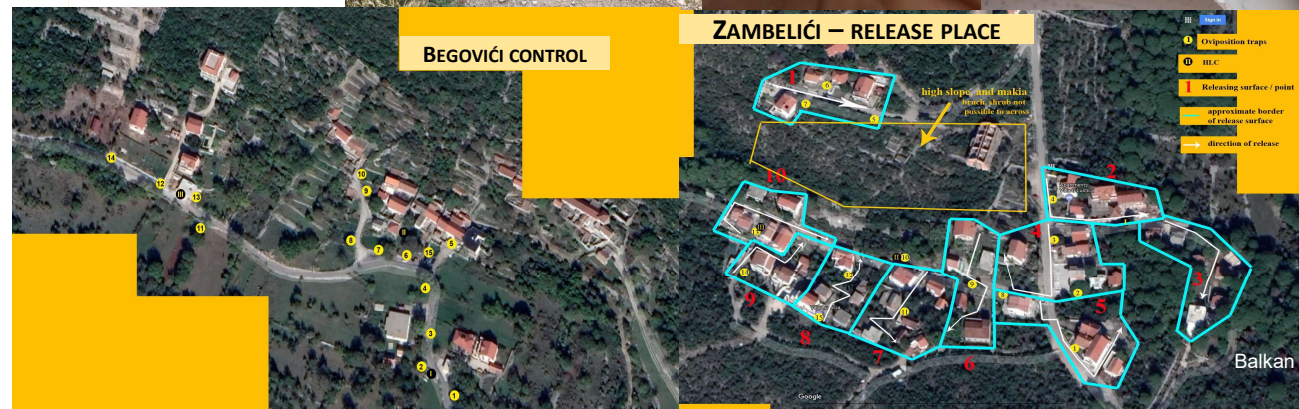
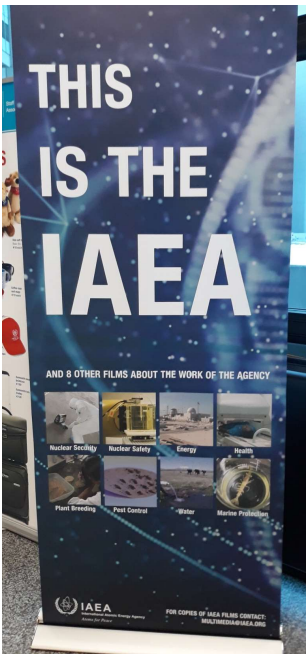




2018, after LOVCEN we continue MRR to start SIT

Challenge

Feasibility pilot study on importation, field release and efficacy evaluation of *Aedes albopictus* sterile males in Montenegro



2018	Oviposition trapping	HLC	release
10.05.	start		
17.05.	1		
24.05.	2	1	
31.05.	3	2	
07.06.	4	3	1
14.06.	5	4	2
20.06.	6	5	3
26.06.	7	6	4
04.07.	8	7	5
11.07.	9	8	6
18.07.	10	9	7
25.07.	11	10	
01.08.	12	11	
08.08.	13	12	
15.08.	14	13	
22.08.	15	14	1
29.08.	16	15	2
05.09.	17	16	3
13.09.	18	17	4
19.09.	19	18	5
26.09.	20	19	6
03.10.	21	20	7
10.10.	22	21	8
17.10.	23	22	
24.10.	24		
31.10.	25		

+ Ministry of Science of Montenegro

Effort

May 8th – 11th, 2023



2018, after LOVCEN we continue MRR to start SIT **1st But...**



2018		start Monday	Bologna Leipzig Budapest	Belgrade - Podgorica	Podgorica - Podgorica	end	h. TOTAL
1st	04-07.06.	15000	13.15	20.42	24.16	25.33 Thursday	10.18 70.31
2nd	11-14.06.	15000	14.28	18.32	23.19	28.48 Thursday	13.17 70.39
3rd	18-20.06.	17000	12.50	20.27	22.29	5.41 Wednesday	13.25 48.37
4th	25-26.06.	16000	12.40	21.10	22.01	5.56 Wednesday	13.44 49.07
5th	02-04.07.	16000	12.22	20.29	23.07	6.04 Wednesday	14.02 49.40
6th	09-11.07.	18000	13.20	19.37	23.56	6.21 Wednesday	14.22 49.54
7th	16-18.07.	17000	12.44	20.12	23.04	6.36 Wednesday	14.36 49.52
			20.10	23.10	12.08		

2018		start Monday	Bologna Leipzig Budapest	Belgrade - Podgorica	Podgorica - me	end	h. TOTAL
1st	20-22.08.	15000	13.36	19.55	22.24	6.40 Wednesday	14.35 48.59
2nd	27-29.08.	11000	14.05	19.50	23.52	4.59 Wednesday	14.02 48.42
3rd	03-05.09.	15000	12.31	20.35	22.32	5.37 Wednesday	14.01 48.44
4th	10-13.09.	15000	15.44	18.19	22.24	27.33 Thursday	12.00 68.16
5th	17-19.09.	15000	14.21	19.20	23.01	4.52 Wednesday	13.34 47.13
6th	24-26.09.	12832	12.15	20.58	23.15	5.43 Wednesday	14.11 49.56
7th	01-03.10.	20000	12.13	21.41	22.24	5.02 Wednesday	13.20 49.07
8th	08-10.10.	20000	12.18	20.47	23.07	5.48 Wednesday	14.00 49.42
			20.11	22.52	8.17		

I Phase	1st	2nd	3rd	4th	5th	6th	7th	average
sent mosquitoes	15000	15000	17000	16000	16000	18000	17000	
date	04-07.06.	11-14.06.	18-20.06.	25-26.06.	02-04.07.	09-11.07.	16-18.07.	
mortality %	31.15%	33.93%	21.74%	27.28%	31.24%	15.99%	13.71%	25.01%
released per line	1033	991	1331	1164	1100	1512	1467	1228

II Phase	1st	2nd	3rd	4th	5th	6th	7th	8th	aver.
sent mosquitoes	15000	11000	15000	15000	15000	12832	20000	20000	
date	20-22.08.	27-29.08.	03-05.09.	10-13.09.	17-19.09.	24-26.09.	01-03.10.	08-10.10.	
mortality %	21.15%	25.45%	28.07%	21.95%	24.51%	94.16%	48.41%	45.04%	38.59
released per line	1183	820	1079	1171	1132	75	1032	1099	949

May 8th – 11th, 2023

Effort **Challenge**

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2019, still we continue MRR to start SIT

2nd But...



2019		start	Bologna	Belgrade	Podgorica	end	h. TOTAL			
week		Monday	Leipzig Budapest	- Podgorica	- Podgorica					
21	0	21-23.05.	6000	12.27	20.20	23.10	5.45	Thursday	13.43	49.15
22	1 st	27-29.05.	15000	11.55	21.45	23.25	5.30	Wednesday	13.52	50.40
23	2 nd	03-05.06.	22000	12.27	20.45	24.00	5.00	Wednesday	14.20	49.45
24	3 rd	10-13.06.	20000	12.56	44.15	22.01	6.45	Thursday	15.10	73.00
25	4 th	17-19.06.	15000	12.49	20.20	23.00	7.00	Wednesday	15.23	50.20
26	5 th	25-27.06.	15000	12.21	21.50	23.00	6.00	Thursday	15.11	50.50
27	6 th	01-03.07.	21000	12.29	22.10	22.00	6.30	Wednesday	15.10	50.40
28	7 th	08-11.07.	15000	12.07	21.15	23.00	30.00	Thursday	14.11	74.15
29	8 th	15-17.07.	16000	12.01	21.40	23.40	5.20	Wednesday	14.41	50.40
30	9 th	23-25.07.	20000	12.39	20.20	23.00	6.15	Thursday	14.18	49.35
31	10 th	29-31.07.	15000	12.45	20.15	23.20	7.00	Wednesday	14.20	50.35
			average:	23.00	23.00	8.17				

MORTALITY DURING TRANSPORT

2019	0	1st	2nd	3rd (mix)	4th (mix)	5th	6th	7th	8th	9th	10th	average
sent mosquitoes	6000	15000	22000	20000	15000	15000	21000	15000	15000	20000	15000	
date	21-23.05.	27-29.05.	03-05.06.	10-13.06.	17-19.06.	25-27.06.	01-03.07.	08-11.07.	15-17.07.	23-25.07.	29-31.07.	
mort. %	64.95	80.44	54.25	89.38	72.65	15.83	13.72	32.92	10.04	14.5	8.39	41.55
released per point	701	1092	3424	708	1368	4208	6040	3354	4498	5697	4581	3243

2019	week of the year	Oviposition trapping	HLC	release
	03.04.	14	start	
	10.04.	15	1	
	17.04.	16	2	
	24.04.	17	3	
	01.05.	18	4	
	08.05.	19	5	
	15.05.	20	6	
	22.05.	21	7	0
	29.05.	22	8	1
	05.06.	23	9	2
	12.06.	24	10	3
	19.06.	25	11	4
	27.06.	26	12	5
	03.07.	27	13	6
	11.07.	28	14	7
	17.07.	29	15	8
	25.07.	30	16	9
	31.07.	31	17	10
	08.08.	32	18	9
	13.08.	33	19	10
	21.08.	34	20	11
	29.08.	35	21	12
	04.09.	36	22	13
	11.09.	37	23	14
	18.09.	38	24	15
	25.09.	39	25	16
	02.10.	40	26	17
	09.10.	41	27	18
	16.10.	42	28	19
	23.10.	43	29	20

Effort

Challenge

May 8th – 11th, 2023

Balkan & Black Sea Regional Meeting



CoE – One Health proposal applications

3rd & 4th But...

CALL FOR PROPOSALS FOR THE ESTABLISHMENT OF CENTRES OF EXCELLENCE

2019

APPLICATION FORM

I-a Basic facts about the Centre

Effort

Host Institution of the Centre – Applicant	University of Montenegro, Biotechnical Faculty
Title and acronym of the programme – the Centre	One Health Centre of Excellence in Arthropod Vectors and Vector Borne Diseases in Montenegro acronym: CoE MNE-VEC
Period of realization of the programme (MM/YY – MM/YY)	2019 – 2022
Programme Budget (total)	553.142,63
Co-financing requested from the Ministry of Science	414.525,23
Field(s) of science the programme belongs to – Frascati 2015. link (primary and secondary)	1-106; 3-303; 4-403
Socio-economic goal of the programme link	07; 08 (12.3; 12.4)
Key words (5-10) of the programme (to be used for selection of appropriate evaluation experts)	Arthropod Vectors; Vector Borne Diseases; One Health; Entomology; Veterinary Medicine; Public Health; Surveillance of Vectors; Control of Vectors

Jedinstveni centar izvrsnosti u Crnoj Gori za oblast artropodnih vektora i bolesti koje oni prenose, rukovodilac: dr Igor Pajović, nosilac: Univerzitet Crne Gore – Biotehnički fakultet

May 8th – 11th, 2023

2023

Effort

MediLabSecure leadership initiative; One Health initiative in Montenegro

Igor Pajovic <pajovicb.igor@gmail.com>
to mediabsecure ▾

Wed, 15 Mar, 12:48

Respected MediLabSecure Coordination team,

Here is a leadership initiative proposal: "**One Health initiative in Montenegro and *Aedes albopictus* insectarium startup**"!

We are very grateful for your interest in the Leadership Initiative call for proposals launched last month.

The call was a success, and we received many proposals of high quality, including yours. We submitted the proposals to the Consortium for evaluation and decided to select two, each from a different region of the MediLabSecure project.

We received many proposals from the members of the Balkan & Black Sea region but, unfortunately, your proposal was not selected.

Balkan & Black Sea Regional Meeting



2020-23

- 2020 Corona appear **Challenge**

- COST Action CA17108, " Aedes Invasive Mosquitoes" – AIM; 2018-2021. **Value**

- 2021 - project " Public Health Preparedness for Cross-border Epidemics and Emergencies"

- ERI-HEALTH; INTERREG- IPA Croatia - Bosnia and Herzegovina – Montenegro **Value**

Saopštenje sa 47. sjednice Vlade Crne Gore

- 2023 - vector surveillance and control program with an action plan for 2023-2025



Usvojen je *Program za nadzor i kontrolu vektora 2023-2025 sa Akcionim planom za period od 2023. do 2025. godine*. Donošenjem ovog Programa Crna Gora će prvi put uspostaviti cjelishodnu i kontinuiranu kontrolu nad najvažnijim i najopasnijim grupama vektora (insekti koji prenose zarazne bolesti). Ustanoviće se njihovo prisustvo, brojnost i distribucija. Takođe će se ispitivati i prisustvo virusnih i drugih patogena u njima. Time će se obezbijediti kontrola izbijanja mogućih zaraznih bolesti ljudi i životinja. Aktivnosti predviđene akcionim planom za 2023. godinu usmjerene su na povećanje informisanosti o kontroli vektora i vektorskih bolesti u Crnoj Gori, održavanje niskog stepena prevalencije obojelih od vektorima prenosivih bolesti kod ljudi i domaćih životinja i smanjenje rizika introdukcije i nastanjivanja invazivnih vektorskih vrsta na teritoriji Crne Gore.

Objavljeno: 06.04.2023. • 17:54

Chance

for new

Start

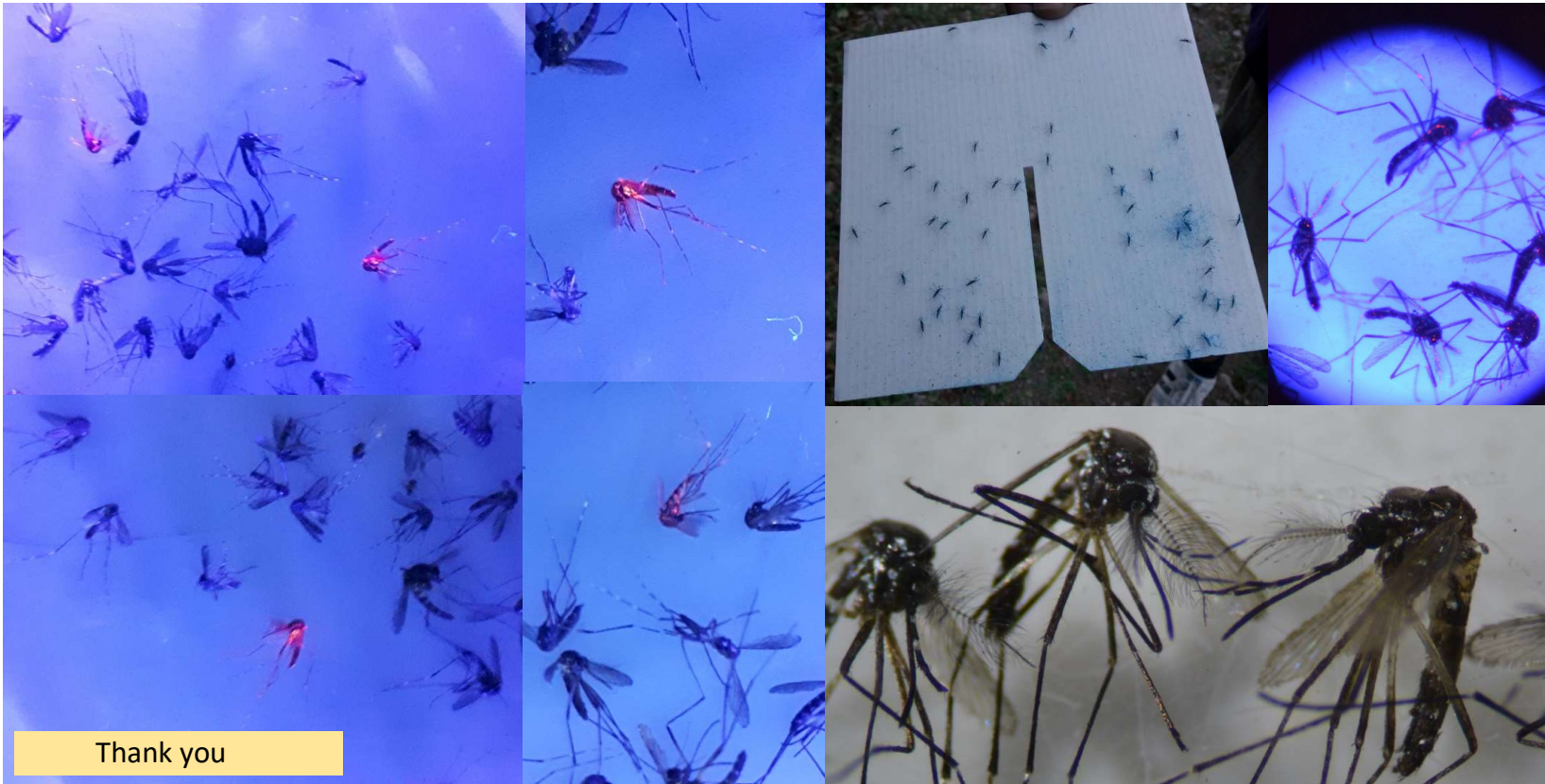
May 8th – 11th, 2023

In total after LOVCEN we have:

- 4 but's,
- 2 small projects with limited recourses and the same results,
- 1 Corona,
- 1 Government decision and **an idea !!!**

Effort

Balkan & Black Sea Regional Meeting



Thank you