



УНИВЕРЗИТЕТ У БАЊОЈ ЛУЦИ
UNIVERSITY OF BANJA LUKA

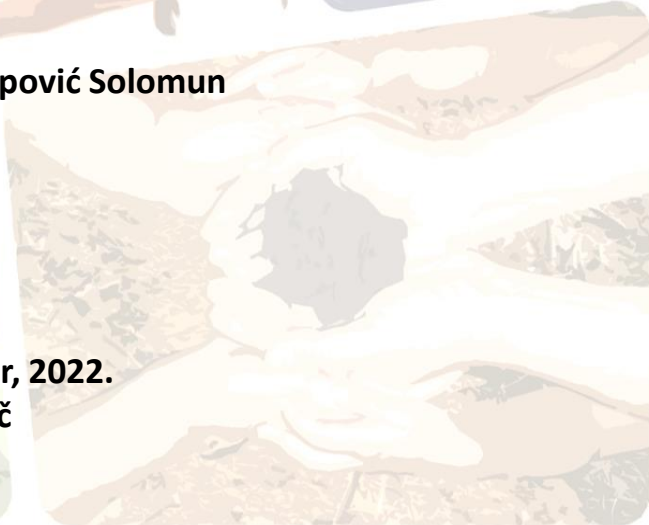
ШУМАРСКИ ФАКУЛТЕТ
FACULTY OF FORESTRY



LAND DEGRADATION NEUTRALITY IN BOSNIA AND HERZEGOVINA

Prof. dr Marijana Kapović Solomun

November, 2022.
Goč





INTRODUCTION

- **ABOUT BOSNIA AND HERZEGOVINA**
- **LDN PROCESS**
- **LDN TARGET AND ASSOCIATE MEASURES**
- **STEPS AND CHALLENGES FOR LDN IMPLEMENTATION**
- **OPPORTUNITIES**



Bare land and karst of Herzegovina

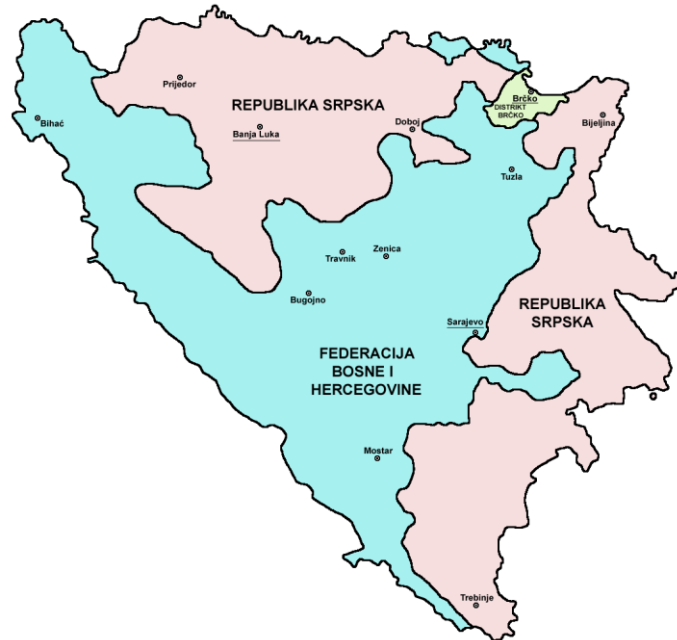


RS
FBiH

25,024 km²
26,110 km²

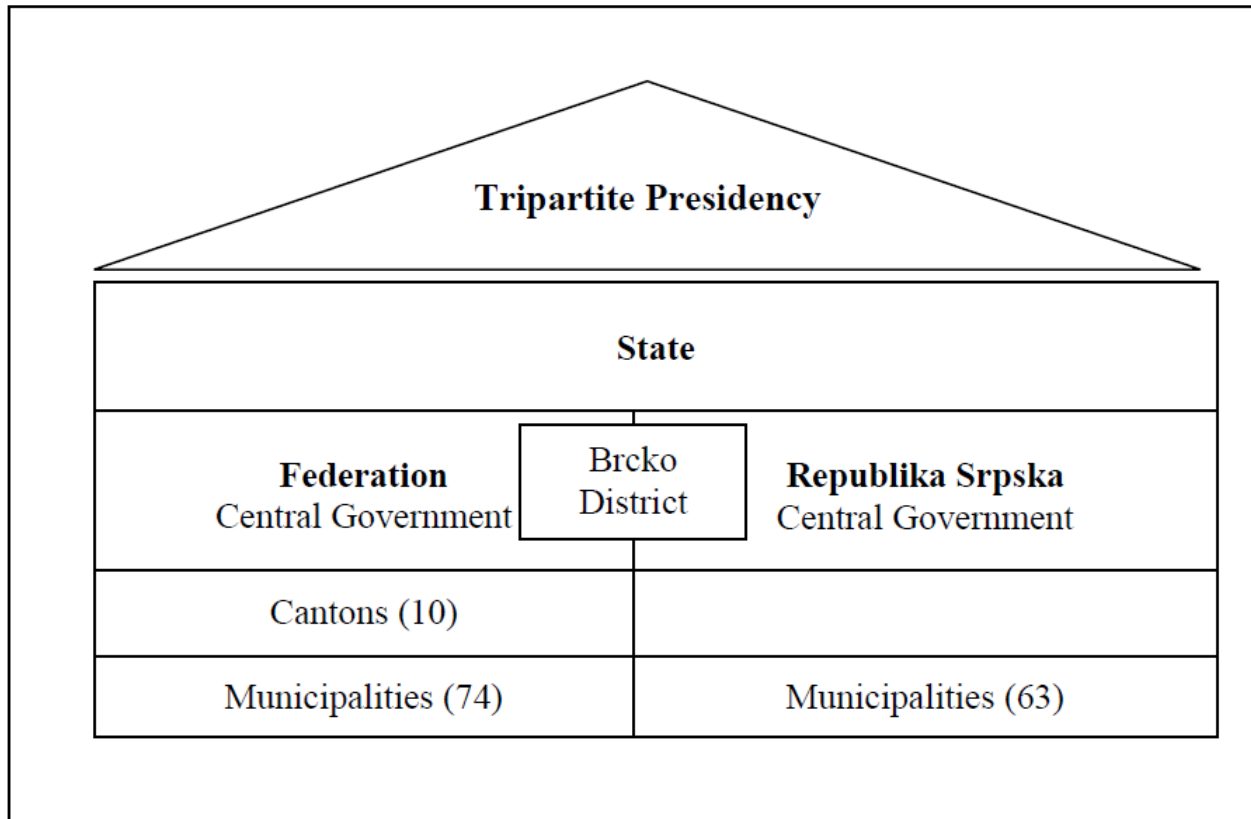


- BOSNIA AND HERZEGOVINA - SOVEREIGN STATE WITH PARLIAMENTARY STATE REGULATION
- **ENTITY THE REPUBLIC OF SRPSKA**
- **ENTITY FEDERATION OF BOSNIA AND HERZEGOVINA**
- **DISTRICT BRČKO**
- DECENTRALIZED POLITICAL AND ADMINISTRATIVE STRUCTURE
- **LAND AND LAND RESOURCES ARE UNDER JURISDICTION OF THE ENTITIES - REGULATED BY THE ENTITY LEGISLATION**



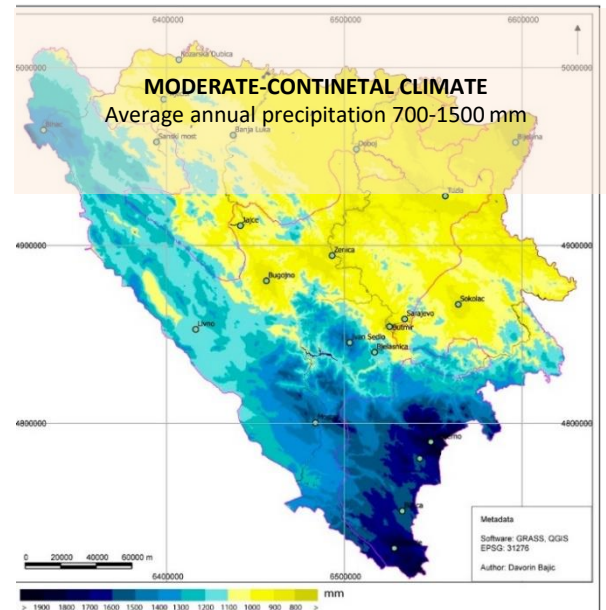
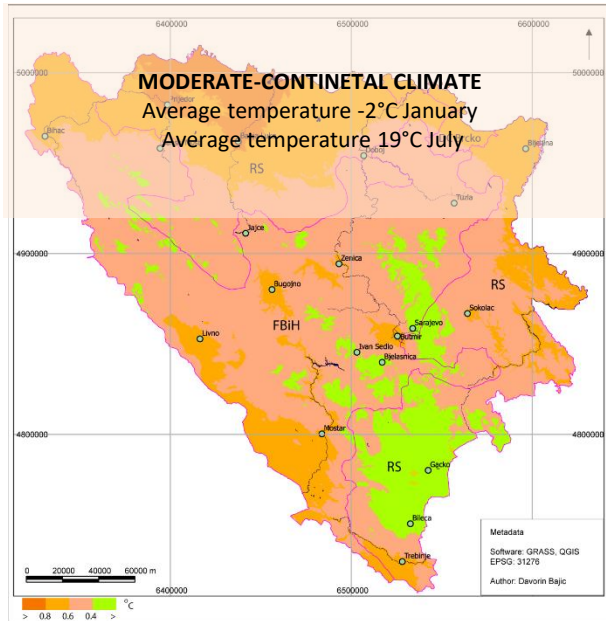


The Constitutional Structure of Bosnia and Herzegovina.



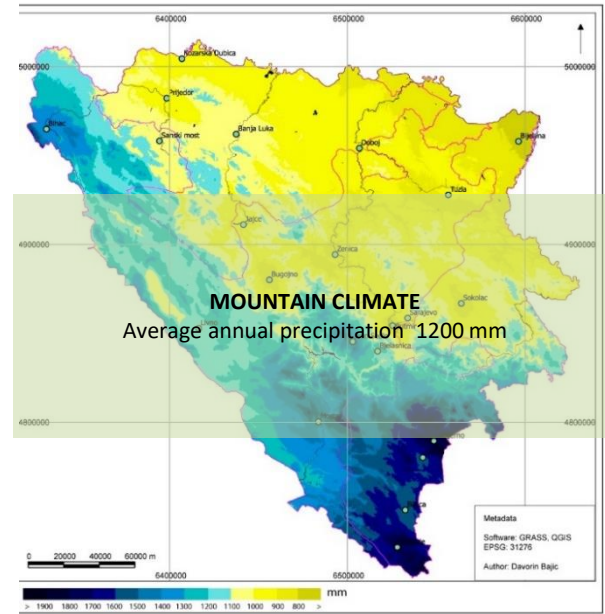
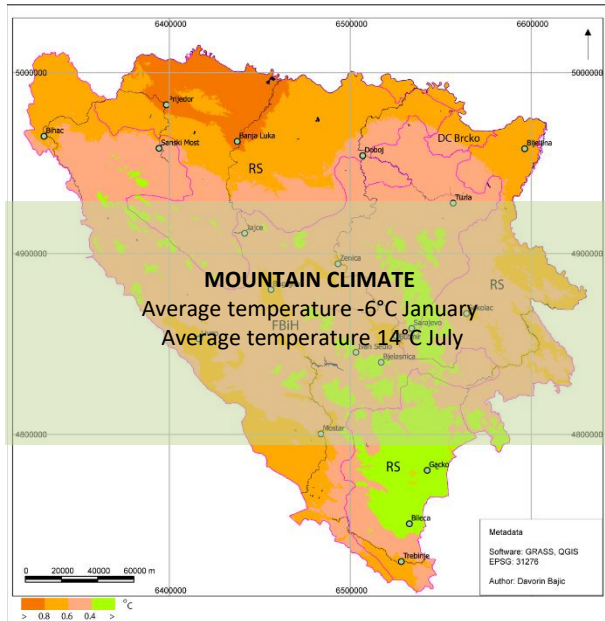


CLIMATE



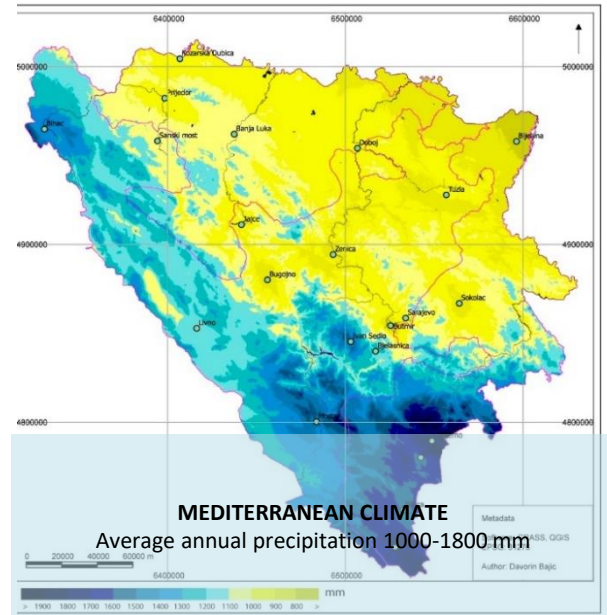
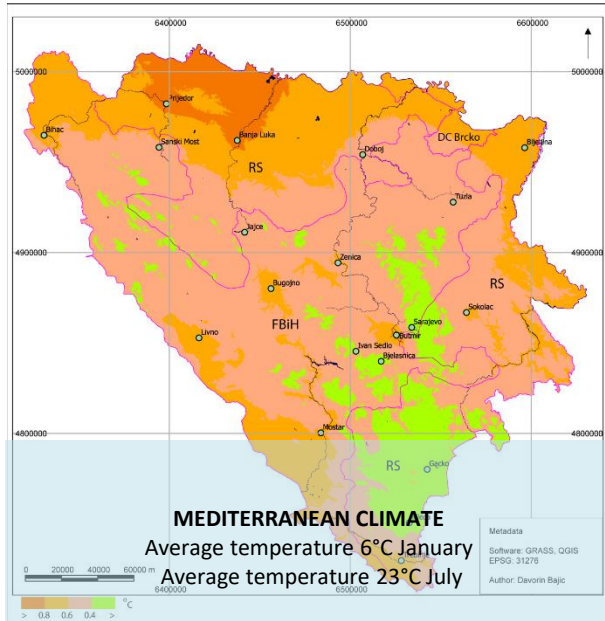


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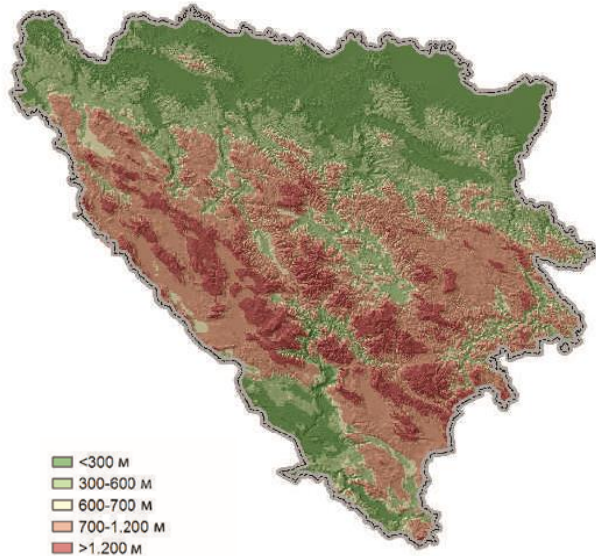


CLIMATE





GEOMORPHOLOGY



VEGETATION



CCA 52% OF FORESTS AND FOREST LAND



MAIN CHARACTERISTICS OF SOILS

- ✓ Acid soils covers cca 30%,
- ✓ Low humus content,
- ✓ Low content of the most important nutrients,
- ✓ Shallow or skeletal soils,
- ✓ Water surplus on the 14% of agricultural soils,
- ✓ Erosion, particularly on steep slopes.

Drought!

Soil quality classes	Area	
	ha	%
Soils of high quality I, II and III category	774.907	15,16
Soils of moderate quality IVa и IVb category	1.126.520	22,03
Soils of low quality V and VI category	1.654.616	32,36
Soils of very low quality VII and VIII category	1.556.857	30,45

Opportunity: Sustainable soil and water management



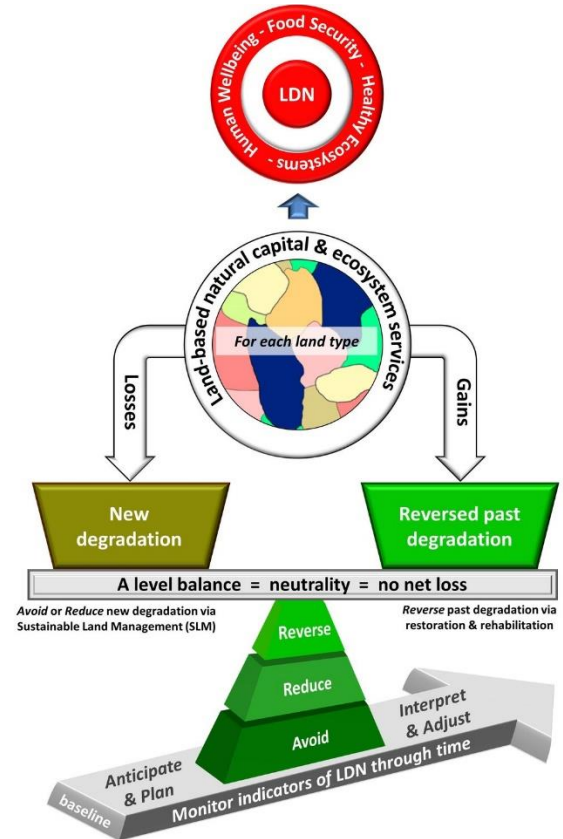
MAIN LDN ACTIVITIES

- ✓ **Mobilization of LDN working group,**
- ✓ **Inception, validation, final workshop for each Entity;**
- ✓ **Activities were divided between Entities;**
- ✓ **Comprehensive analysis of legislative and strategies related to land;**
- ✓ **Comparative analysis of available national data, global datasets and CORINE LC (2000-2006-2012);**
- ✓ **Baseline, land degradation trends and drivers;**
- ✓ **Local community perspective - Field research, meetings, round tables;**
- ✓ **LDN target and associate measures for achieving LDN;**
- ✓ **The final LDN reports officially accepted and approved by the Ministry of Agriculture, Forestry and Water Management of the Republic of Srpska and Ministry of Agriculture, Water management and Forestry of the Federation of BiH.**



What is LDN?

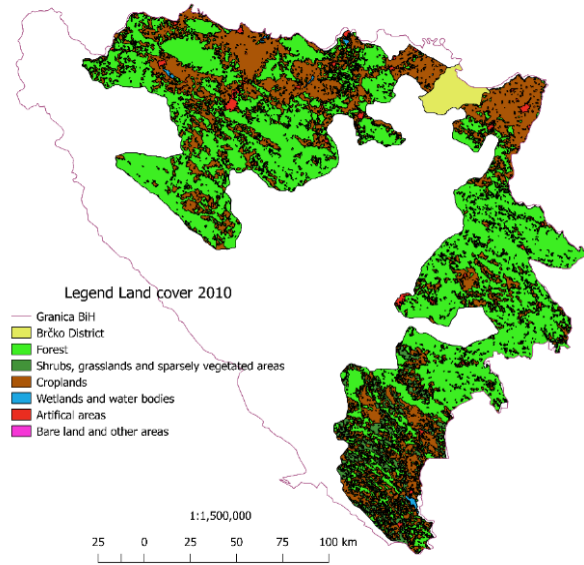
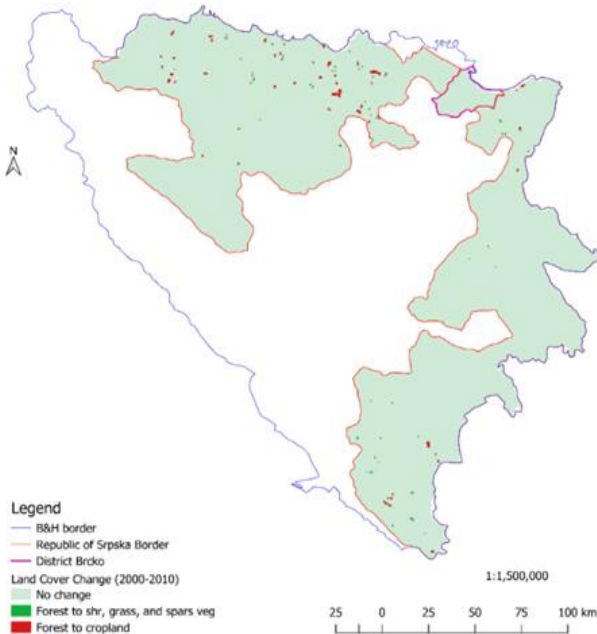
Land Degradation Neutrality (LDN) has been defined by the Parties to the Convention as: **A state whereby the amount and quality of land resources, necessary to support ecosystem functions and services and enhance food security, remains stable or increases within specified temporal and spatial scales and ecosystems.**





LAND COVER CHANGE REPUBLIC OF SRPSKA AND BRČKO DISTRICT (PERIOD 2000-2012)

- Decrease of forests
- Increase of shrubs
- Increase of cropland

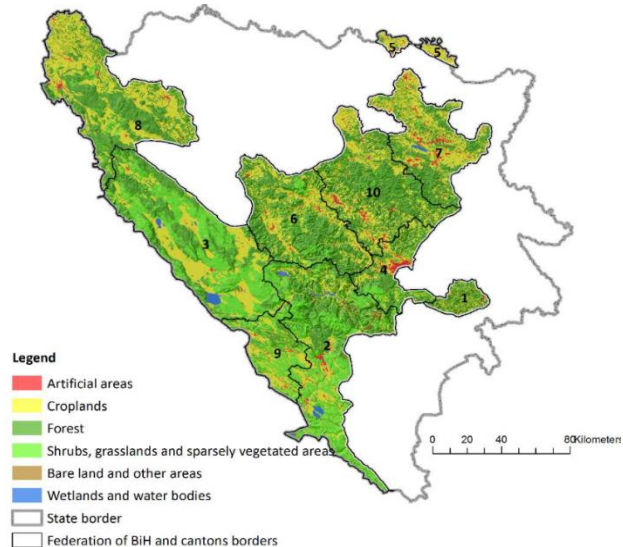
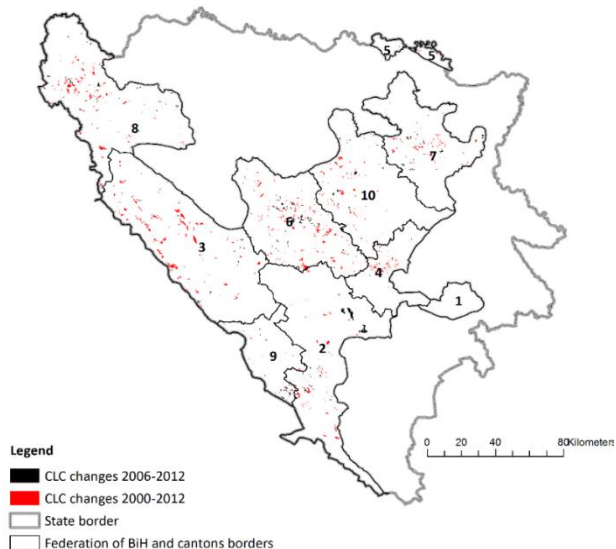


ESA, (European Space Agency data)



LAND COVER CHANGE FEDERATION OF BIH (PERIOD 2000-2012)

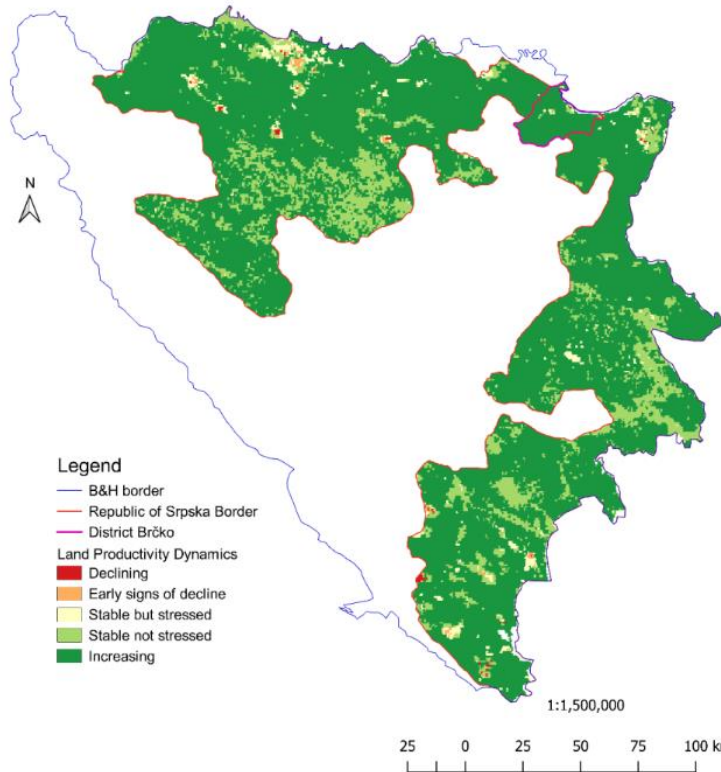
- Decrease of cropland
- Increase of forests
- Increase of shrubs



CORINE LAND COVER Data



LAND PRODUCTIVITY DYNAMICS REPUBLIC OF SRPSKA AND BRČKO DISTRICT



DECREASED LP ON 2,54% TERRITORY

STABLE LP ON 14,94%

INCREASED LP ON 82,11% TERRITORY



LAND PRODUCTIVITY DYNAMICS FEDERATION OF BIH

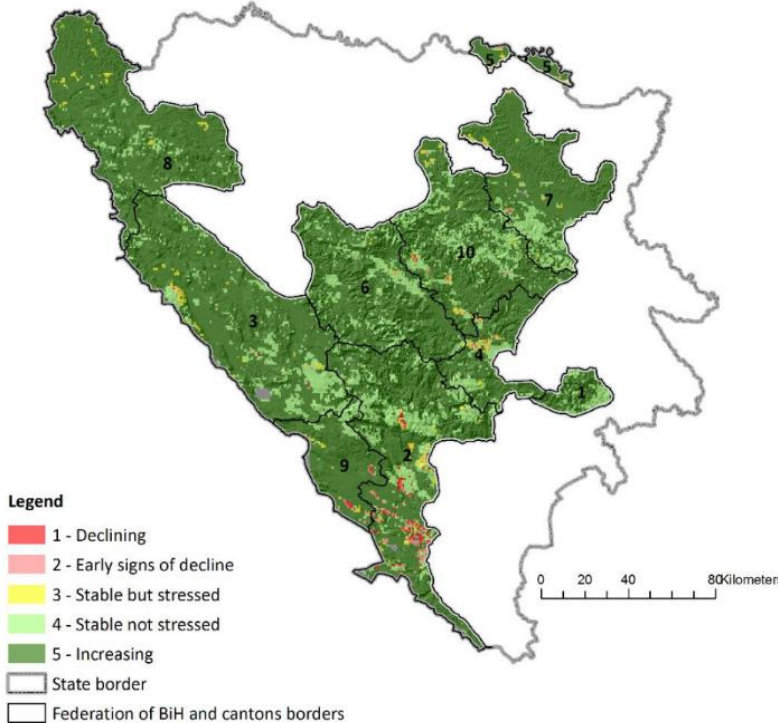
Federation of Bosnia and Herzegovina
Land productivity dynamics



DECREASED LP ON 2,55% TERRITORY

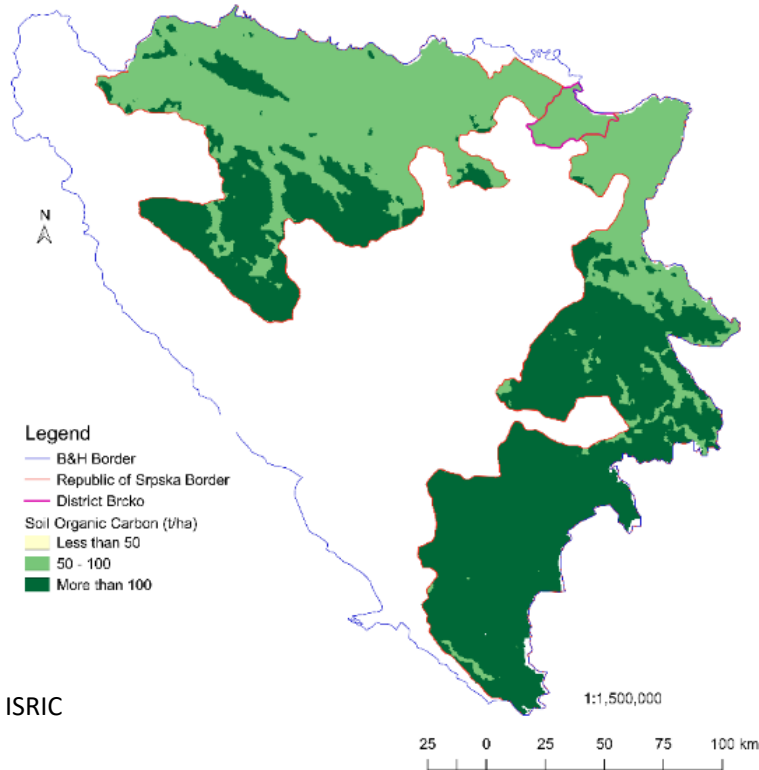
STABLE LP ON 15,72%

INCREASED LP ON 79,14% TERRITORY





SOIL ORGANIC CARBON STOCKS REPUBLIC OF SRPSKA AND BRČKO DISTRICT



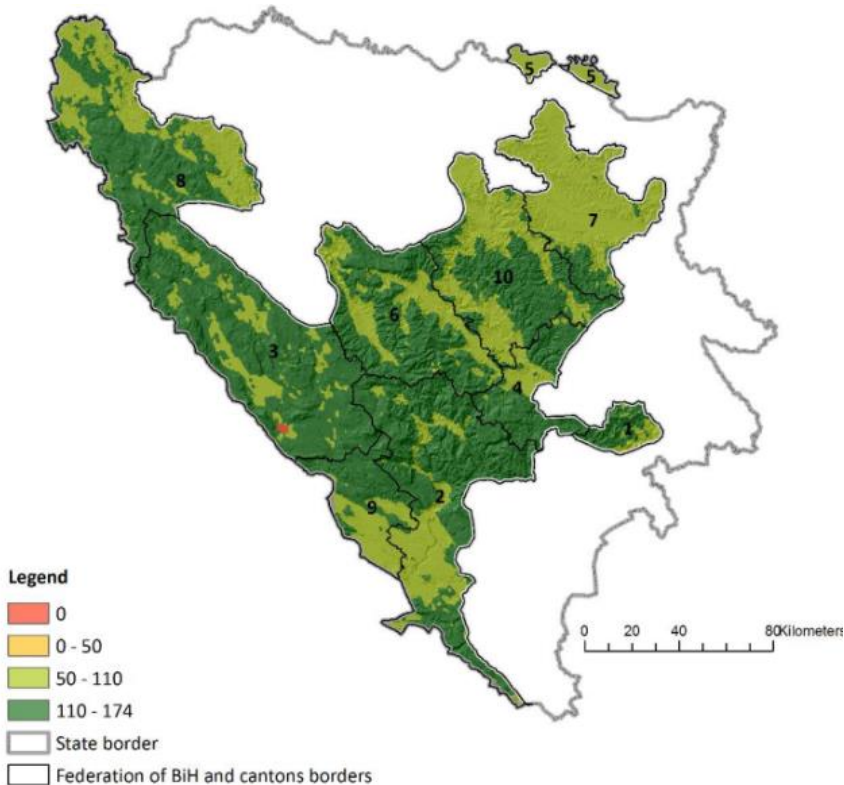
AVERAGE SOC - 104.4 t/ha
Cropland - 93.1 t/ha,
Forests - 110 t/ha.

Carbon stocks above and below ground (SOC) is the quantity of carbon in a pool.



SOIL ORGANIC CARBON STOCKS FEDERATION OF BIH

AVERAGE SOC -111.7 t/ha
Cropland - 107,9 t/ha,
Forests -119,3 t/ha.



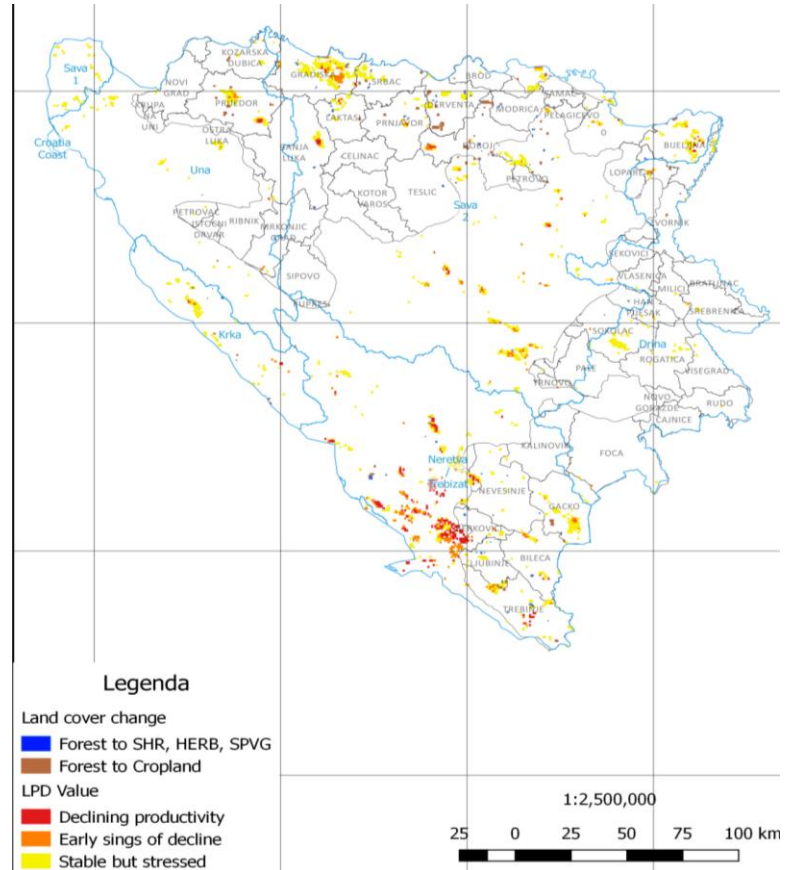
Source: ISRIC



HOT SPOTS IN RS

Priority areas of land degradation in the Republic of Srpska are:

1. Lijevče polje (Gradiška and Laktaši)
2. Semberija (Bijeljina)
3. Herzegovina (Trebinje and Bileća)

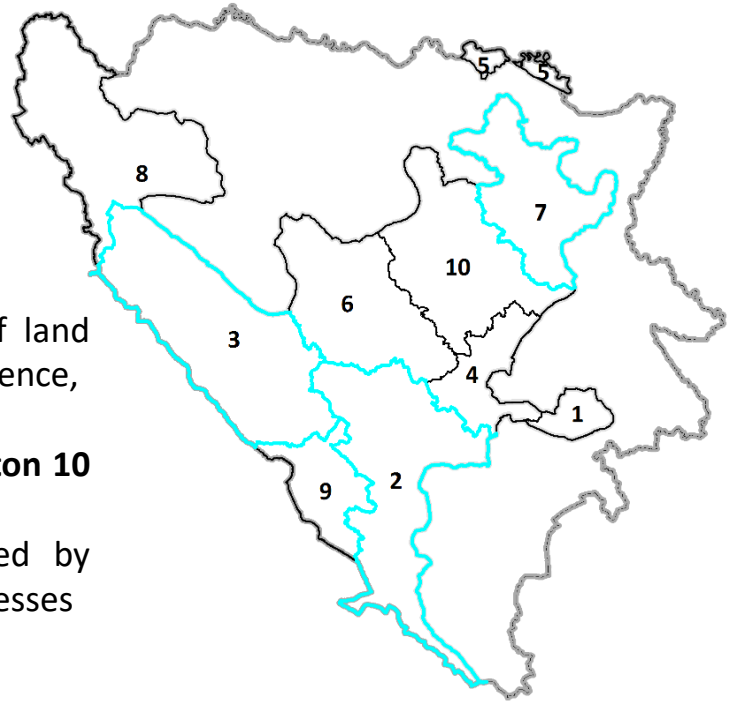




HOT SPOTS IN FBiH

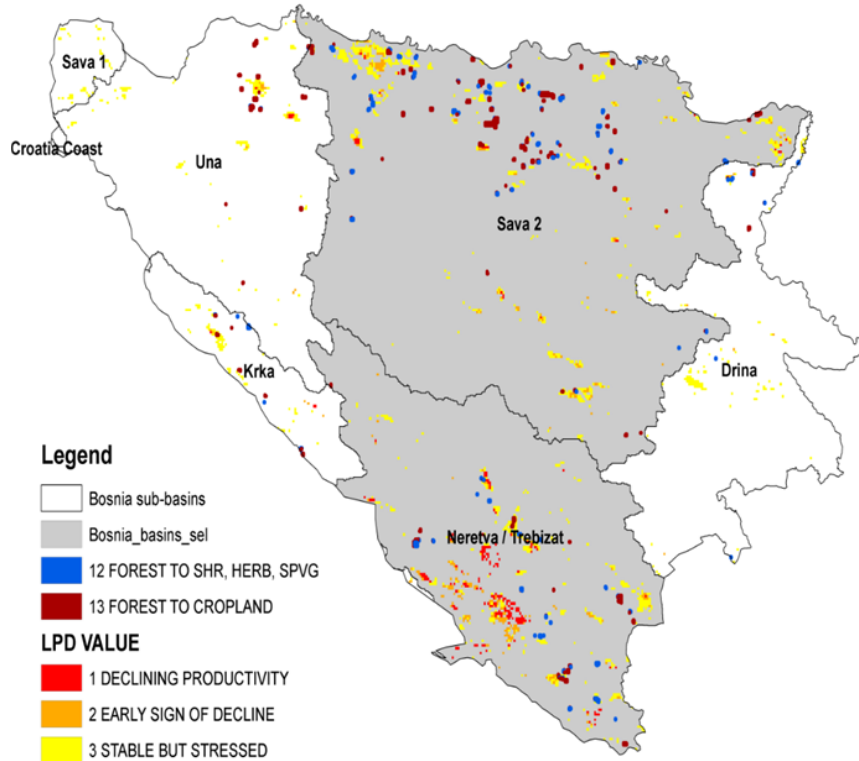
Tuzla canton, from the standpoint of land degradation under anthropogenic influence,

Herzegovina-Neretva canton and Canton 10 from the standpoint of natural influences-drought and fires, followed by erosion as a result of degradation processes





PRIORITY WATERSHEDS



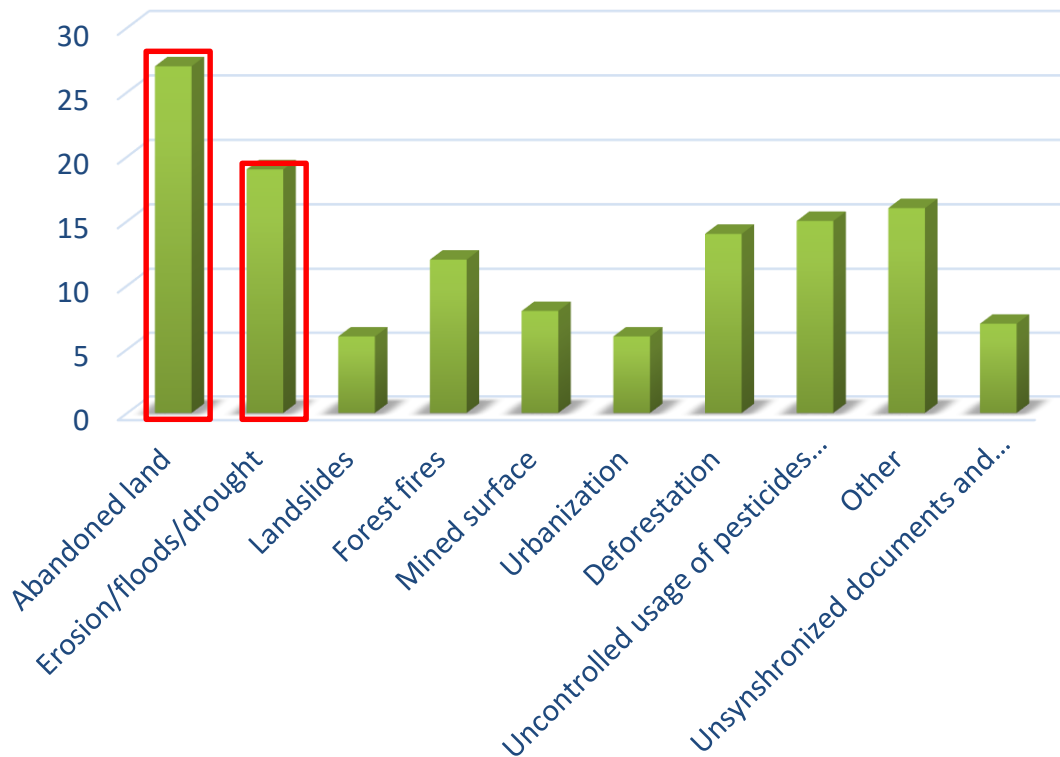


PRIORITY WATERSHEDS

Priority	Watersheds	Degrading area: LPD + SOC (km ²)*	Cumulative sum degraded area (%)	Watershed area (km ²)	Cumulative sum national area (%)	SOC loss (tons)	Area SOC loss (km ²)**	Cumulative sum national SOC loss (%)	LPD 1-3 area (km ²)***	Cumulative sum LPD 1-3 (%)
	Sava 2	556	41%	21,003	41%	-52,470	39.60	51%	517	40%
	Neretva / Trebizat	537	80%	11,278	63%	-31,392	11.97	82%	525	80%
	Una	105	88%	8,605	80%	-11,133	7.38	93%	98	87%
	Drina	83	94%	7,350	94%	-2,034	1.53	95%	81	94%
	Krka	60	98%	2,115	98%	-5,364	2.07	100%	58	98%
	Sava 1	24	100%	799	100%	0	0	100%	24	100%
	(blank)	0	100%		100%		0	100%		100%
	Croatia Coast	0	100%	19	100%	0	0	100%	0	100%
	TOTAL	1,366		51,169		-102,393	62.55		1,303	



MAIN LAND DEGRADATION DRIVERS LOCAL PERSPECTIVE





MAIN LAND DEGRADATION DRIVERS



ABANDONED AGRICULTURAL LAND



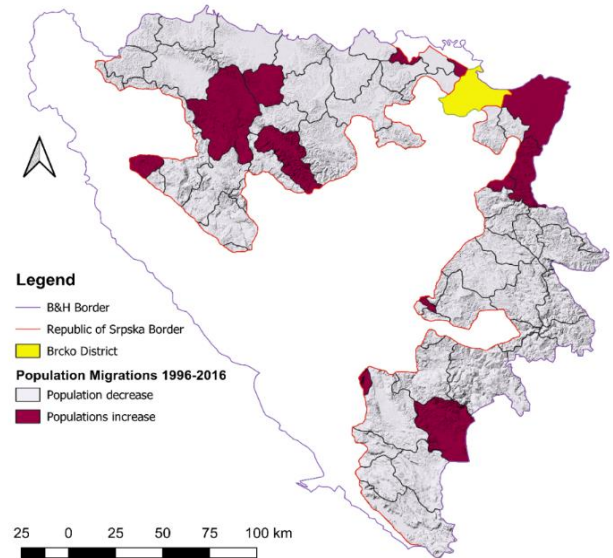
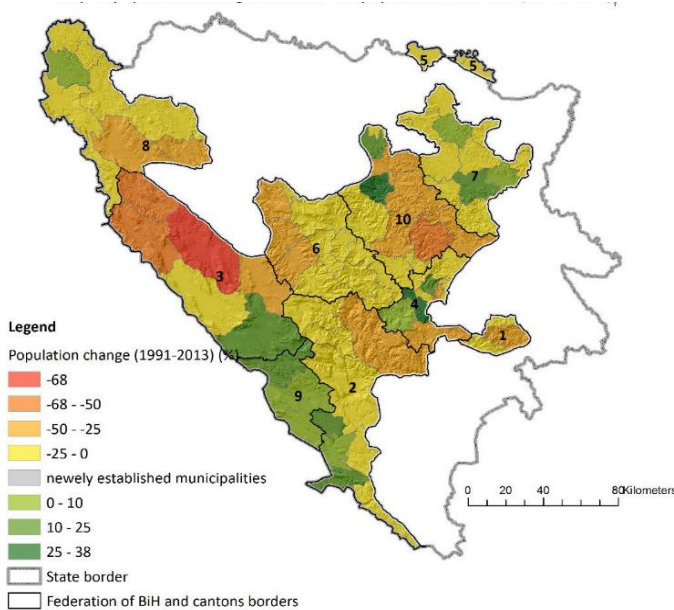
ABANDONED HOUSEHOLDS

POPULATION DECREASE IN 75% OF LOCAL COMMUNITIES





POPULATION CHANGE FOR THE LAST 25 YEARS





OTHER LAND DEGRADATION DRIVERS



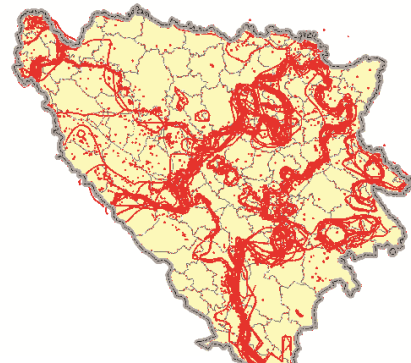
FLOODS/EROSION



DROUGHT



BARE LAND / UNSUCCESSFUL AFFORESTATION



MINE SUSPECTED AREAS ON 2,3% OF THE TERRITORY





OTHER LAND DEGRADATION DRIVERS



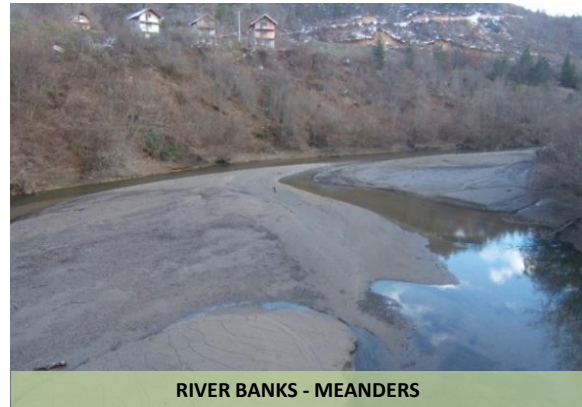
OVER-USE OF PESTICIDES/MIN.FERTILIZERS



MINING/CONTAMINATION



ILLEGAL DEFORESTATION



RIVER BANKS - MEANDERS





BRIGHT SPOTS / SLM MEASURES



SUCCESSFULL AFFORESTATION OF BARE LAND



MODERN IRRIGATION



RECOLTIVATION BY GRASS



NATURAL FOREST REGENERATION





LDN TARGETS REPUBLIC OF SRPSKA

Baseline for the Republic of Srpska is 63,500 ha or 2,54% of the territory where land productivity has been reduced.

LDN TARGET

INCREASED LAND PRODUCTIVITY ON 7% OF THE REPUBLIC OF SRPSKA TERRITORY MEASURES

1. The area of forests and forest lands of the Republic of Srpska to reach 53% by 2030;
2. Increased productivity of forests and forest lands of the Republic of Srpska to 5.50% of total territory by 2030 through measures for improvement of forests and forest land;
3. Increased productivity of agricultural land to 1.50% of total territory of the Republic of Srpska by 2030, through the application of measures to combat drought, measures to combat floods and measures for abandoned land;
4. Soil erosion remains at zero level until 2030;
5. Increased percentage of protected areas in the Republic of Srpska by 2030;
6. Reduction of mined areas for 25% compared to the total mined area in the Republic of Srpska;
7. Rehabilitation of fire-affected sites.



LDN TARGET FEDERATION OF BIH

LDN TARGET

Improve land quality and protection and restore degraded land functions in specific ecosystems or minimize adverse environmental impacts.

MEASURES

1. Remediation of degraded land (expected areas 3,500 ha)
2. Revitalization of land in vulnerable and abandoned areas (expected areas 100,000 ha)
3. Full scale approach in land erosion protection
4. Water supply for agriculture and population supporting the function of sustainable development in hilly-mountainous areas (expected number 300 micro-accumulations, pools and watering place)
5. Demining of agricultural and forest land (expected areas 832 km²)
6. Afforestation of bare and damaged land (expected areas 10,000 ha)
7. Revitalization and preservation of pastures (expected areas 10,000 ha)
8. Construction of flood protection infrastructural facilities (expected areas 20,000 ha)
9. Fire protection measures in forest areas



OPPORTUNITIES?



Sustainable soil/land management

Smart water usage in agriculture

River bank buffer strips, riparian buffers

Trees for infiltration and slowing water flows

Nature based solutions to support water use and prevent LD

Knowledge IN THE SHELL!



DROUGHT



FLOODS/EROSION



BARE LAND / UNSUCCESSFUL AFFORESTATION



CHALLENGES IN LDN IMPLEMENTATION

COMPLEX POLITICAL SITUATION AND GREAT ADMINISTRATION

LAND OWNERSHIP – QUESTION OF POLITICAL AND INDIVIDUAL PERCEPTIBILITY

UNSYNCHRONIZED LAND RELATED LEGISLATIVE

MIGRATIONS – ABANDONED AGRICULTURAL LAND

INFORMATION/KNOWLEDGE EXCHANGE IS ON LOW LEVEL

MINE SUSPECTED AREAS

WEAK SOCIO-ECONOMIC SITUATION

SYSTEM OF CONTROL OF EXISTING LEGISLATIVE FRAMEWORK

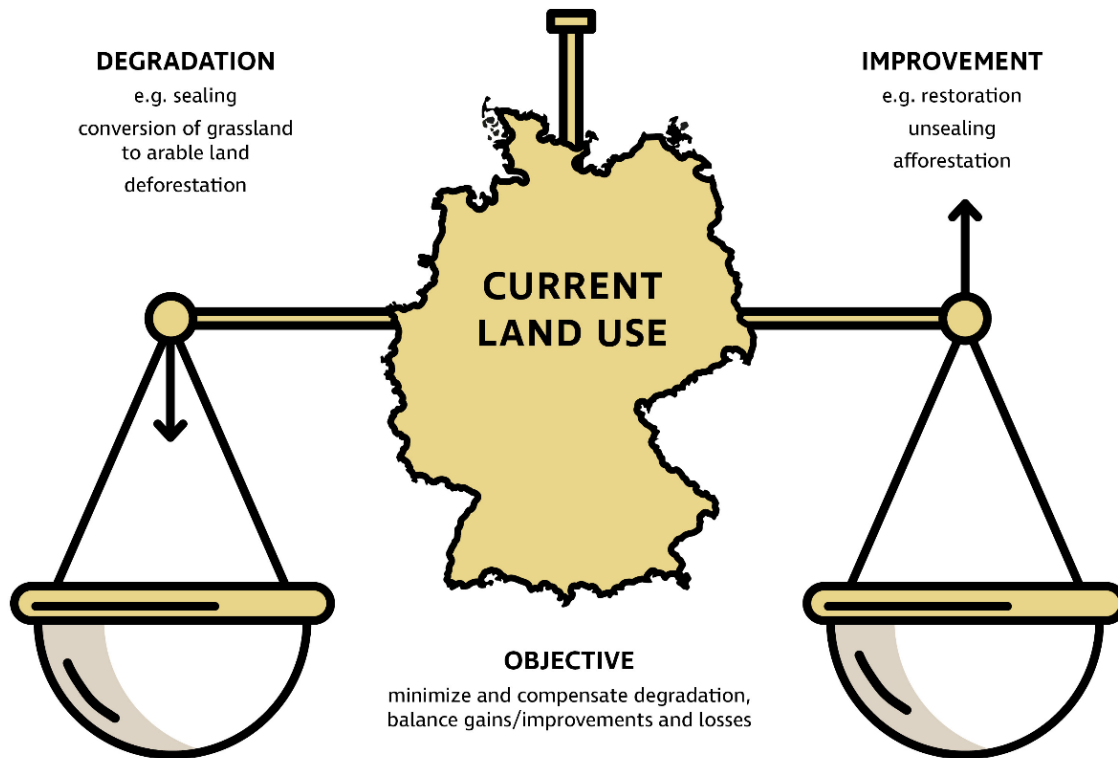
**KNOWLEDGE AND AWARENESS AMONG STAKEHOLDERS ABOUT LAND IMPORTANCE –
QUESTION OF SECONDARY IMPORTANCE**



HOW TO IMPLEMENT LDN AND FIND RIGHT PARTNERSHIPS?

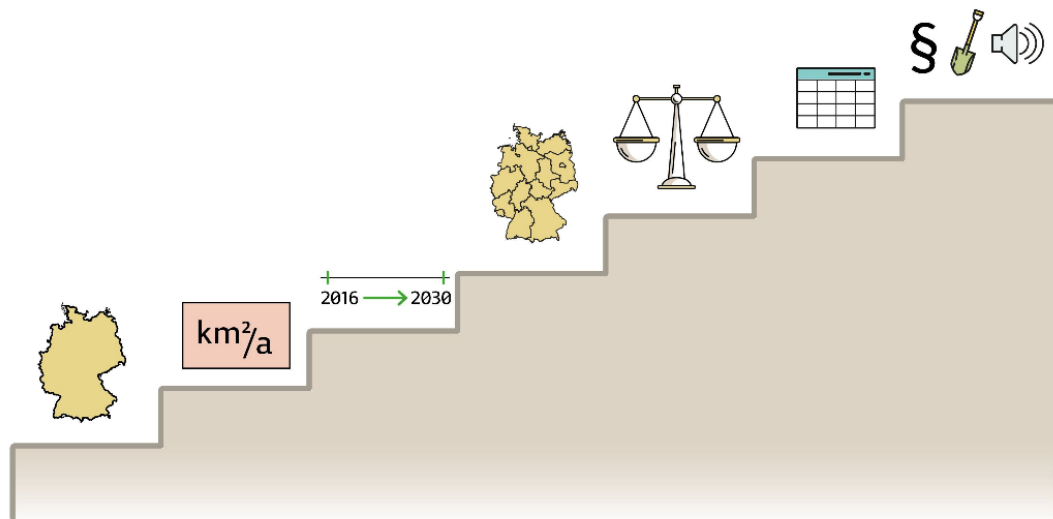
HOW TO IMPLEMENT LDN?

Land degradation neutrality: balancing gains and losses



STEPS TO IMPLEMENT LDN?

Steps to implement Land Degradation Neutrality on a national level



1

Define and tailor LDN in the national context

2

Define suitable indicators

3

Define baseline and set targets

4

Specify the spatial dimension

5

Determine compensation mechanisms

6

Set up and maintain monitoring system

7

Improve enabling environment



OPPORTUNITIES

„LAND RESPONSIBLE GOVERNANCE“ – **SAME PROBLEMS IN ENTITIES**

LDN CONCEPT MAINSTREAMING INTO POLICIES AND LEGISLATIVE RELATED TO LAND

LAND INFORMATION AND LAND MONITORING SYSTEM–INFORMATION EXCHANGE

SDG 15.3.1. AS A PRIORITY ON THE STATE AND ENTITY LEVELS



INTRODUCTION OF NEW KNOWLEDGE AND PRACTICES (NbS, AGROFORESTRY, SILVOPASTORAL SYSTEMS, RIPARIAN BUFFERS ETC.) – „SCIENCE WITHOUT BARRIERS BETWEEN ENTITIES“



OPPORTUNITIES

SCIENCE-BASED COLLABORATIVE PROCESSES TO ORGANIZE AND FOCUS INTERESTS, STAKEHOLDERS, AND PARTNERS – **USE THE KNOWLEDGE**

INCLUSIVE PARTNERSHIPS AMONG GOVERNMENTS, PRIVATE SECTOR, CIVIL SOCIETIES, LOCAL COMMUNITIES – **CONNECT THE PEOPLE**

CONTINUOUS PROMOTION AND AWARENESS RAISING - **JOURNALISTS TRAINED ON LDN**

KNOWLEDGE ON NATIONAL, REGIONAL AND INTERNATIONAL LEVEL – **EXCHANGE THE KNOWLEDGE**



Healthy soil sustains your life
LET'S GO LAND-DEGRADATION NEUTRAL



17 June 2012 World Day to Combat Desertification

HVALA NA STRPLJENJU!