

Achieving Land Degradation Neutrality and some SLM practices

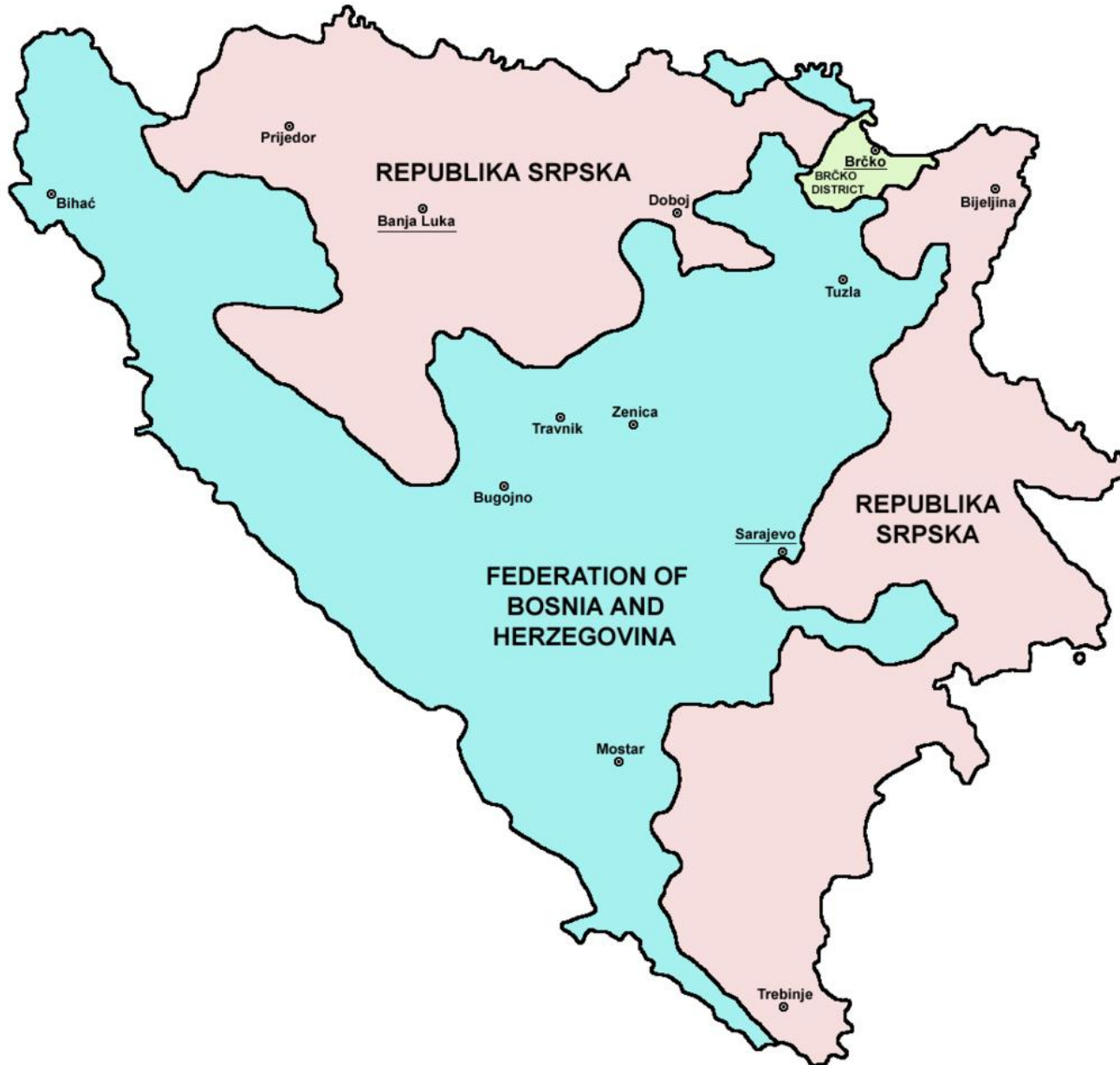
An overview of Bosnia and Herzegovina – Federation of BiH
entity priorities and strategy

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LDN target setting process

and

FAO/GEF project „Decision Support for Mainstreaming and Scaling up of Sustainable Land Management“ (DS-SLM-GCP/GLO/337/GFF)

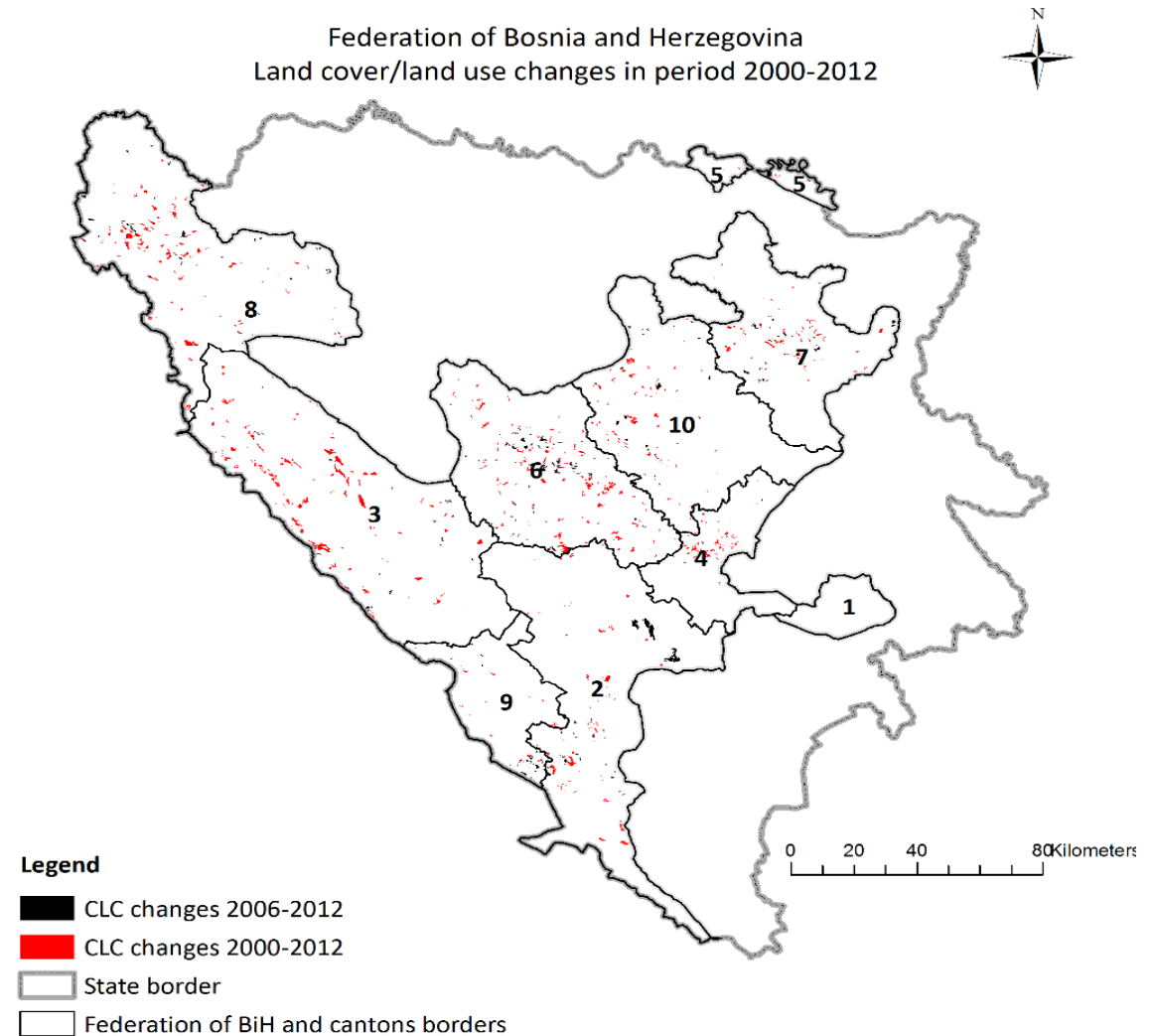
are being implemented in both entities.

Context of land degradation

- **Land Cover/land use**

In the period 2000-2006, such changes were identified at 871 locations, i.e. polygons, on a total area of 33,976 ha.

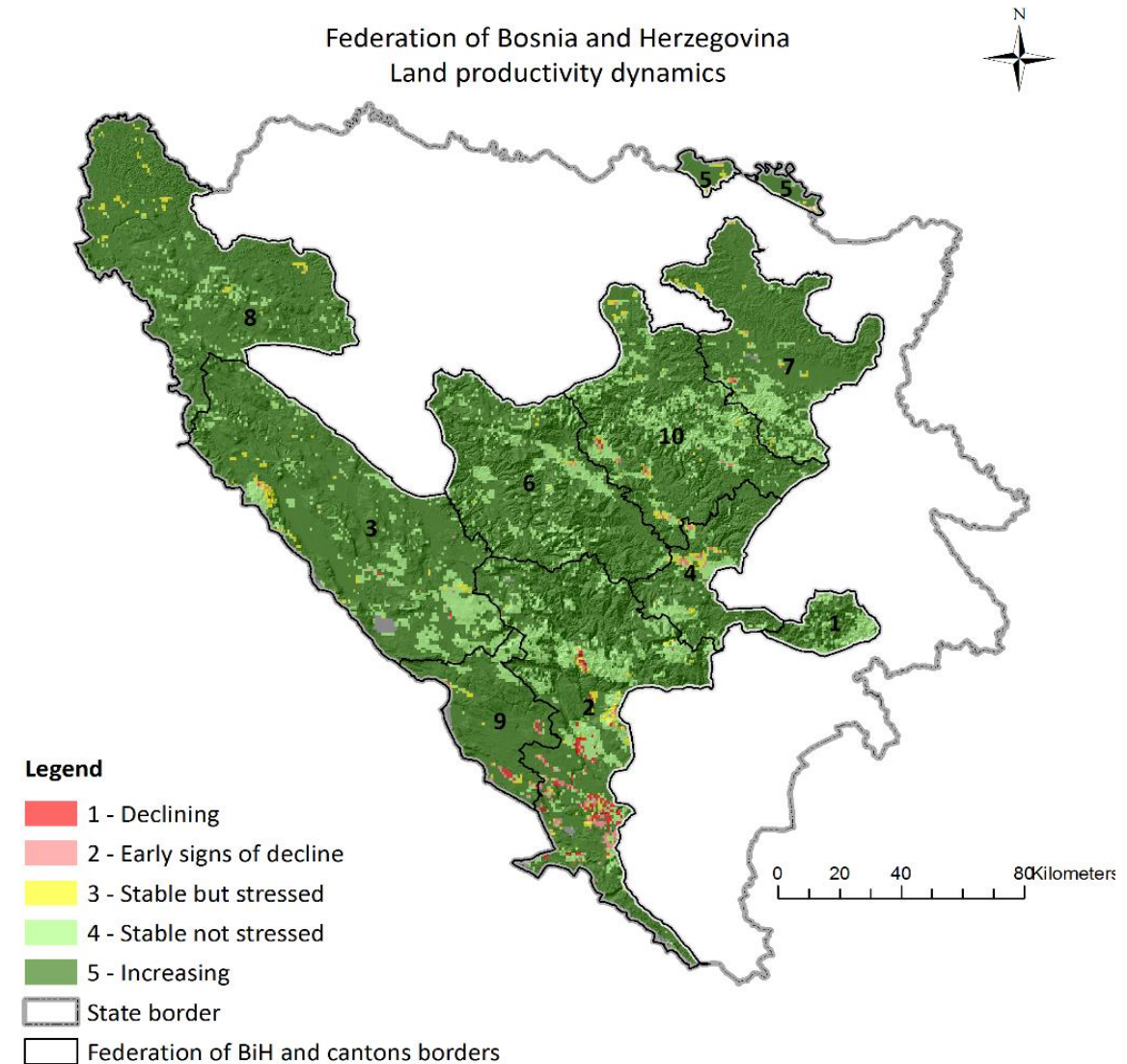
The pressure on the land cover was considerably lower in the period 2006-2012, so that changes are visible on a total area of 10,991 ha (271 polygons).



Context of land degradation

- **Land productivity dynamics**

- Reduction of productivity 11,400 ha,
- Early signs of reduction 13,800 ha,
- Stable but under stress 410,500 ha,
- Stable productivity without stress 410,500 ha,
- Increase in productivity 2,066,400 ha.



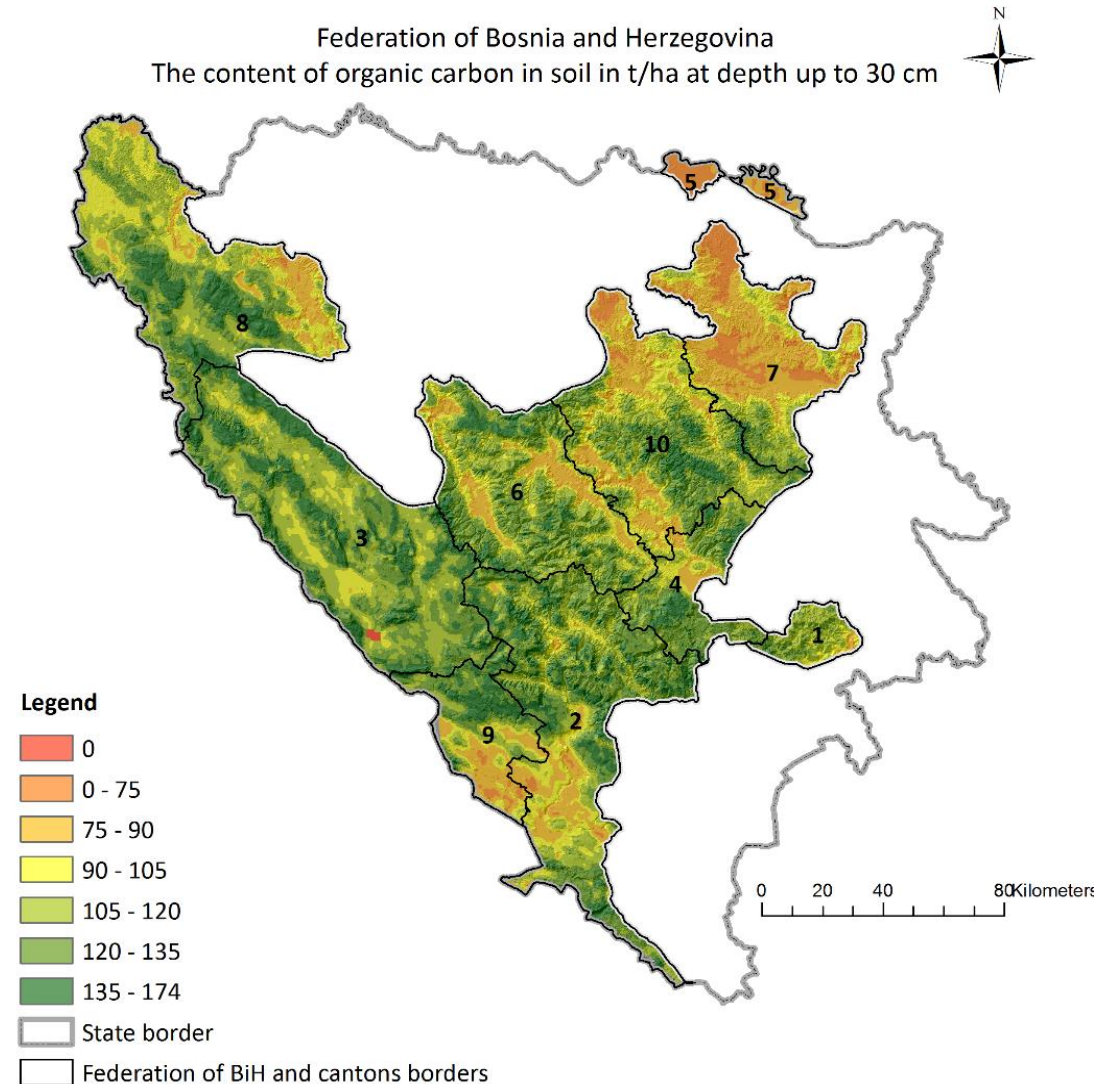
Context of land degradation

- **Organic carbon content**

According to the ISRIC data, the carbon content ranged between 0 to 174 t/ha, while the average is 111,7 t/ha.

Carbon stocks in forest areas amount to 119.3 t/ha, and in agricultural 107.9 t/ha.

The average level of carbon stocks in wetlands and water bodies is 98.3 t/ha.



Context of land degradation

Major land degradation drivers are as follows:

- Population migration and rural depopulation which leads to increased urbanization (mostly illegal), the creation of illegal communal landfills and the occurrence of landslides;
- Non-implementation of policies and measures to protect the land;
- Industrialization and expansion of the area under exploitation of minerals as well as the landfills of mining waste and other materials;
- Inadequate agricultural systems (application of improper practices in agriculture) leading to the occurrence of erosion and soil pollution;
- Illegal felling that is conducive to erosion and landslides;
- Obsolete industrial technologies that lead to land contamination;
- Climate change reflecting in extremes such as droughts and floods.

LDN target setting process

MAIN LDN TARGET

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

This target is aimed at developing programs and projects for the protection, rehabilitation and regulation of degraded land, as well as increasing its fertility.

LDN SUB-TARGETS

- **Land management in support of environmental protection and spatial planning system**

This sub-target pertains to the establishment of a land condition and land use monitoring system, and the development of reporting indicators.

- **Establish a basis for harmonious and spatially balanced socio-economic development, with a focus on marginalized and degraded areas**

This sub-target is aimed at developing and improving the legislative on agricultural and forest land, as well as adopting strategic documents in which the LDN approach will be fully integrated. The focus is also placed on building the capacity of stakeholders in the area of land resources use and management.

Federation BiH Government initiatives towards LDN

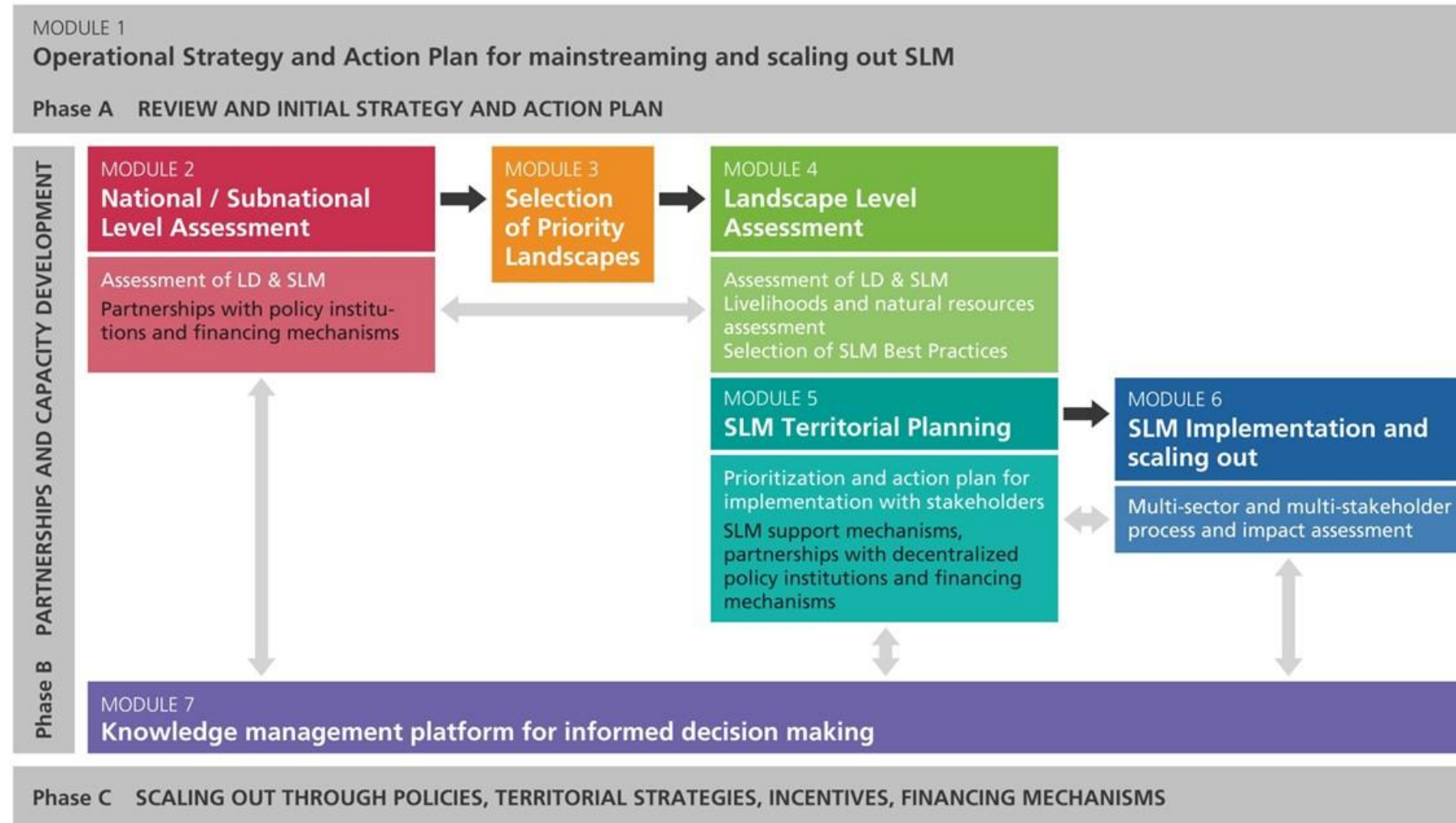
- In 2017, as a result of the LDN process, the Federation BiH Ministry of agriculture, water management and forestry recommended to the Government of the Federation of BiH to introduce the land degradation neutrality concept.
- Projects on the development of the Study on land use value that are implemented by the Faculty of Agricultural and Food Sciences of the Sarajevo University as well as environmental strategies have been recognized as the most important basis for mainstreaming the LDN.
- Opportunities arising in the mainstreaming and strengthening of activities are also related to the planned measures and projects in the basic strategic documents, both at the Federation and cantonal levels.
- FAO/GEF project „Decision Support for Mainstreaming and Scaling up of Sustainable Land Management“ (DS-SLM-GCP/GLO/337/GFF).
- The funds coming from the change of land use (approximately 1.507.000 EUR).
- Fund for Environmental Protection which finances activities related to the protection, preservation and improvement of the quality of air, soil, water and seas, as well as the mitigation of climate change and the protection of the ozone layer.
- Federation of BiH and cantonal ministries of agriculture as well as the local communities, earmark certain funds for improving the state of agricultural land, its fertility and productivity.
- In the future there will be great opportunities for the implementation of measures and projects to be financed from EU pre-accession funds.

What additionally is required to achieve LDN in Bosnia and Herzegovina – Federation of BiH

- Identification of more hot spots and specific land degradation issues;
- Land degradation issues and its solutions have to be a part of five years projections and plans in accordance with the laws and by laws which regulate LDN;
- Implementation of project and measures have to be in line with recognized methodologies and tools;
- Monitoring - indicators have to be developed as well as indicators of success; capacity building is crucial.

FAO/GEF project „Decision Support for Mainstreaming and Scaling up of Sustainable Land Management“ (DS-SLM-GCP/GLO/337/GFF)

Decision Support Framework for SLM mainstreaming and scaling out



LDN measures identified

DEVELOPMENT OF LAND USE VALUE MAP

Target

The map of agricultural land use value is a binding document in the preparation of spatial, urban planning and regulatory plans and directing the land use towards supporting the function of sustainable development and protection of land. The land use value map defines the categories of land according the soil bonity classes, the way of use and agro-zones, taking into account its natural properties, fertility and health condition.

Amount of funds and potential sources

Municipal funds from budget restructuring

REMEDIATION OF DEGRADED LAND

Target

The main target of this measure is to implement technical and biological remediation of physically, chemically and biologically damaged land of landfills for waste tailings (overburden materials) and industrial waste dumps, and to establish the function of management of land as a resource.

In the forthcoming period, remediation should be performed on as much devastated agricultural land as possible, and regulations governing this area should be applied consistently, especially the Law on Mining.

Priority areas

Areas of exploitation with a special focus on: **Banovići**, Lukavac, **Tuzla**, **Živinice**, **Kalesija**, **Srebrenik**, Zenica, Breza, Kakanj, Novi Travnik, Donji Vakuf

FULL SCALE APPROACH IN LAND EROSION PROTECTION

Target	Priority areas
<p>The target of this measure is the application of conservation measures and rehabilitation of areas affected by floods and erosion in order to bring this land back to function. This measure is closely related to flood protection measures, ban of plowing down the slope, terracing, the concept of afforestation and grassing, etc. This measure should have a comprehensive character and continuity in the implementation of remediation.</p>	<p>Tuzla Canton, Sarajevo Canton, Zenica-Doboj Canton, Herzegovina (Dinarides)</p>

CONSTRUCTION OF FLOOD PROTECTION INFRASTRUCTURAL FACILITIES

Target	Priority areas
<p>Issues within the flood protection measures should be considered integrally, knowing that the best way is to make sure that flood protection begins at the highest point of the basin. Given the extreme climate conditions as a result of climate change, flood protection implies the construction of infrastructural facilities for regulating the water wave, and in the lower parts of the levee, for regulating basic drainage and irrigation. Priority areas fit into hot spot areas.</p>	<p>Karst fields of the Dinaric Herzegovina region, river valley of the Bosna, river valleys of the Spreča and Tinja</p>

Module 1. Operational strategy and Action plan for mainstreaming and scaling out



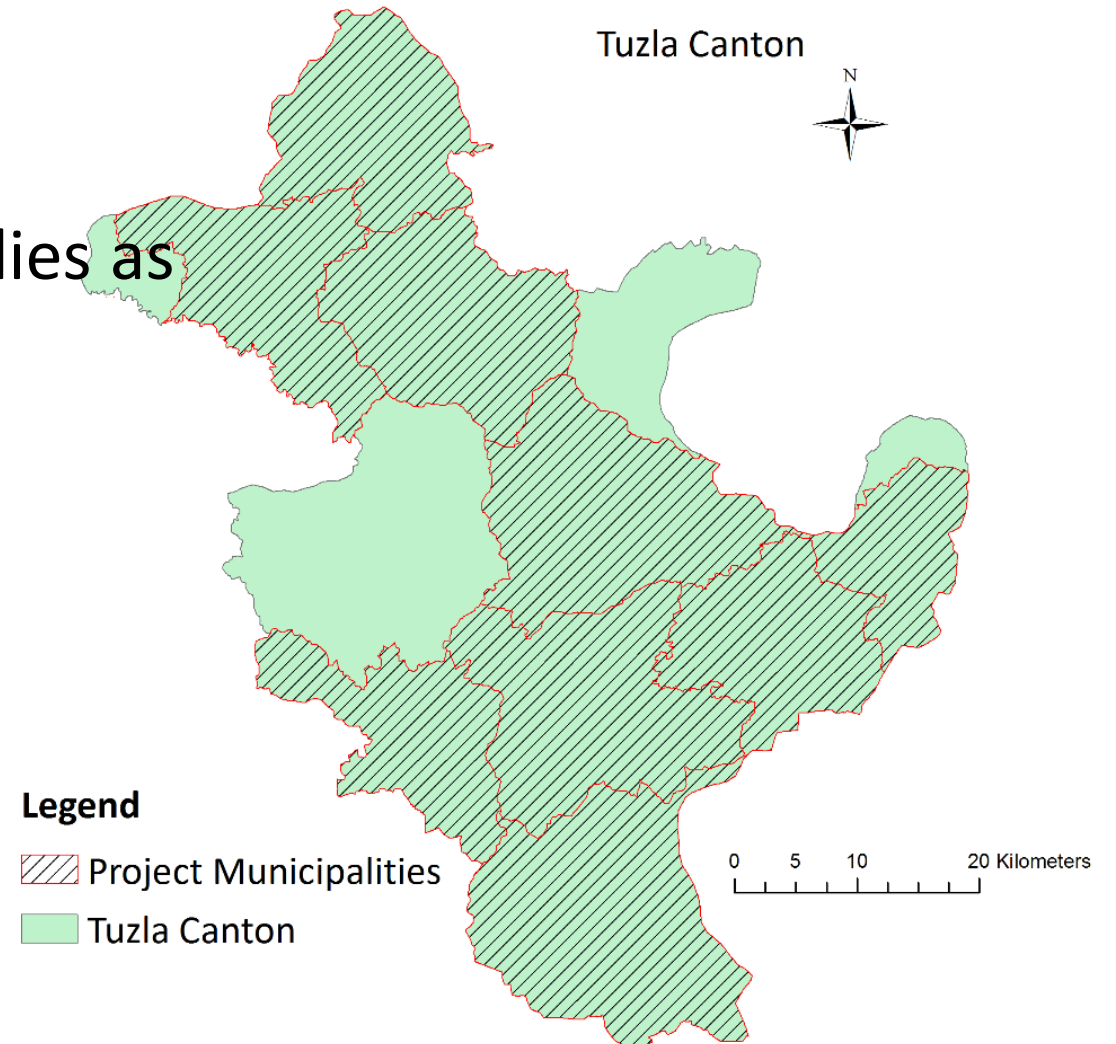
Module 2. National /subnational assessment

- **FEDERATION OF BIH:** analysis of land cover/use database and changes (2000-2012), legislation, strategic documents.
- **TUZLA CANTON:** analysis of land degradation, spatial plan, legislation, strategic documents.
- **MUNICIPALITIES OF TUZLA CANTON:** assessment done through preparation of land capability maps/databases in GIS and land use studies for nine municipalities in Tuzla Canton.
- **RAVNO MUNICIPALITY:** land consolidation.

Module 3. Selection of priority landscapes

Criteria used for selection of landscape

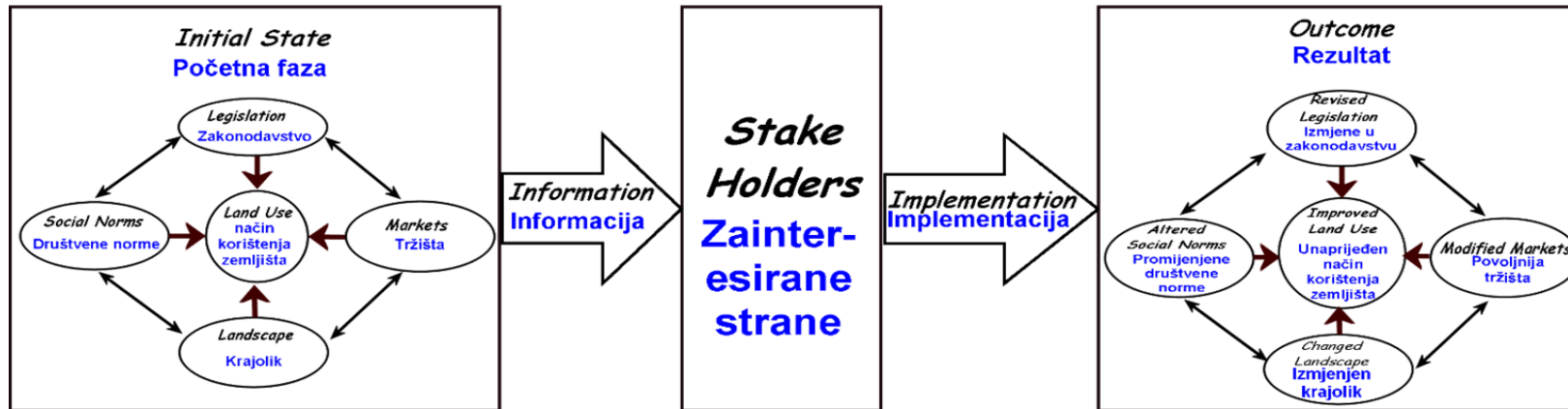
- Types of land degradation,
- Surface of degraded areas,
- Existence of land capability maps and studies as a basis for planning and analysis,
- Interest of local communities for SLM,
- Capabilities of local communities (e.g. participation in FAO PLUD project),
- Ongoing projects and activities,
- Possibilities for funding of SLM,
- Economic-ecological zones (e.g. potential for agriculture).



Module 4. Local / landscape assessments

Module 5. SLM Territorial planning

Participatory Development Proces razvoja sa učešćem svih zainteresiranih strana



Stake Holders

Municipality Administration
Farmer associations
Business associations
Environment groups
Refugee groups
Hunting/fishing/sport associations
Other interested parties

Zainteresirane strane

Opštinske strukture
Udruženja poljoprivrednika
Trgovačka-poslovna udruženja
Udruženja koje se bave zaštitom okoliša
Udruženja izbjeglica
Lovačka, ribarska, sportska udruženja
Ostali zainteresovani korisnici

Participatory development



Participatory development



Participatory development

Hot spots - priorities

SLM Approach – LAND CAPABILITY STUDY AND MAPS *(in function of land protection, spatial planning and agro-ecological zoning).*

By using defined soil bonity categories, land capability study defines the natural potential of soils in terms of agricultural production and food production, and defines the zones for various land use types. From the rational land use point of view, it means adequate spatial planning, urban development and environmental protection.

SLM best practices – LAND CONSOLIDATION, SOIL REMEDIATION, EROSION PROTECTION MEASURES etc.

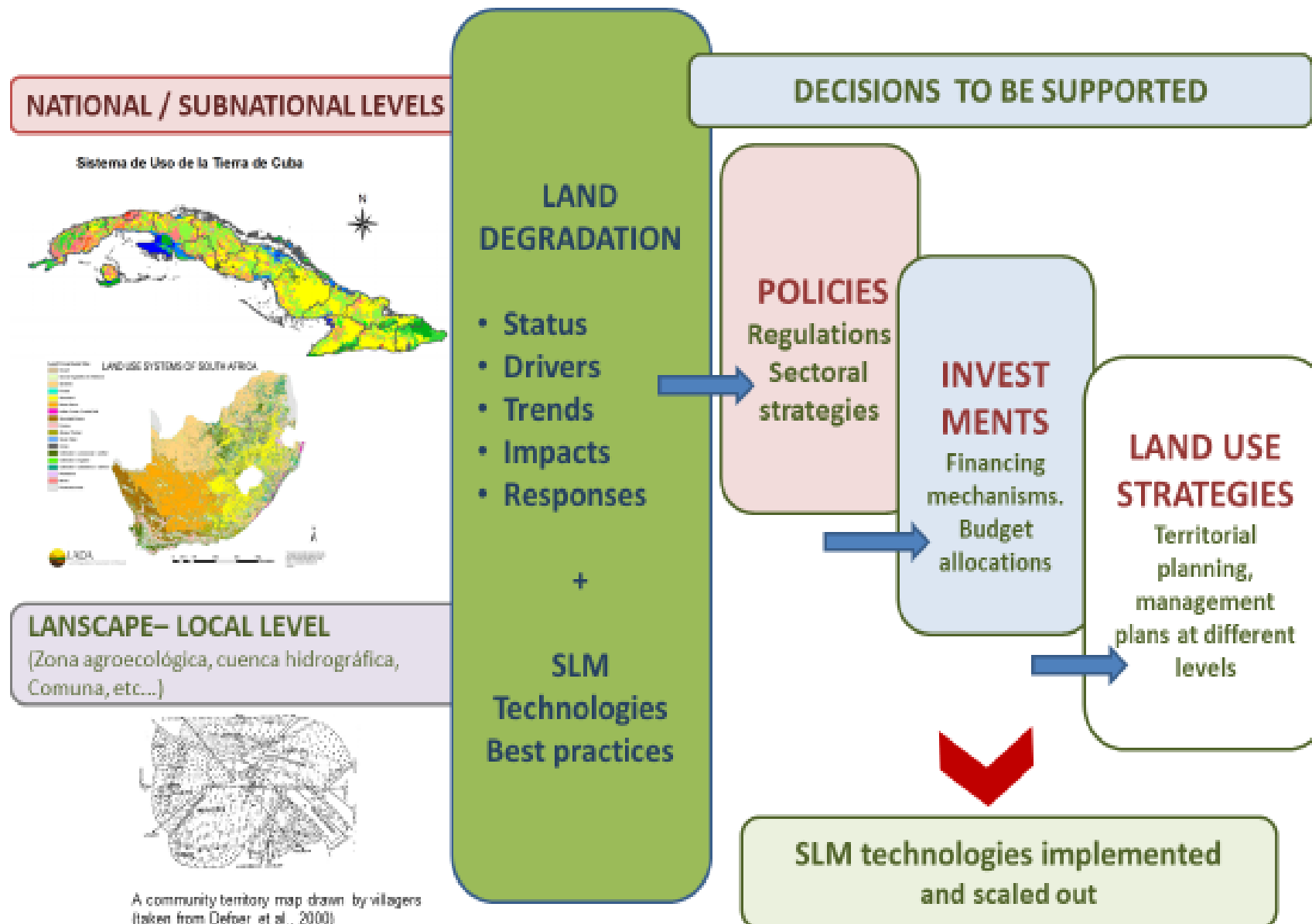
Module 1. Mainstreaming strategy

The Operational Strategy for SLM Mainstreaming and Scaling out (DS-SLM Mainstreaming Strategy) shall define the mechanism for the country to support decisions, by strengthening the contribution of the DLDD/SLM methodological assessments, tools and project findings to key decision-making processes (*mainstreaming and scaling up*) in order to promote the dissemination of identified SLM practices (*scaling out*).

The DS-SLM Mainstreaming Strategy should have impact on:

- Facilitating SLM implementation.
- Improving the understanding and importance of land degradation and SLM issues.
- Providing long term support for SLM implementation and scaling out (beyond the DS-SLM project).

Core concept for mainstreaming SLM in the context of DS-SLM



Types of decision-making processes and policy instruments for mainstreaming SLM



Mainstreaming strategy

Key Mainstreaming objective: To integrate SLM into Development strategy of Tuzla Canton 2016-2020

Some of priority projects/ideas:

1. Regulation of Spreca river is a key priority in the Tuzla Canton
2. Landslides / erosion protection
3. Land consolidation
4. Soil remediation
5. Development of infrastructure such as water pools and irrigation systems due to the fact that canton is most vulnerable area in BiH to drought and climate change

Module 6. SLM implementation and scaling out

During FAO/GEF project implementation **Land capability study and maps were prepared for three new municipalities (Banovici, Tuzla, Srebrenik).**

Besides ongoing activities in Donja Luka, **land consolidation activities** will be implemented in area of Gornja Luka in total surface of 250 ha.

Donja Luka:

Before land consolidation: surface 101.5 ha; No. of parcels 744, No. of owners 121

After land consolidation: No. of parcels 127, No. of owners 116

Gornja Luka:

Before land consolidation: surface 250 ha; No. of parcels 1,667; 300 farmers will be involved

Module 6. SLM implementation and scaling out

Two SLM demonstration sites were established

SLM project promoted, municipalities in Tuzla are interested for land consolidation, other cantons interested for land capability maps and studies



Module 7. Knowledge management platform for informed decision making



Container cultivation of blueberries on infertile or soils with reduced fertility (Milenko Blesić)

Container cultivation of blueberries on infertile or degraded soils (Bosnia and Herzegovina)

Kontejnerski uzgoj borovnice na neplodnim ili degradiranim tlima

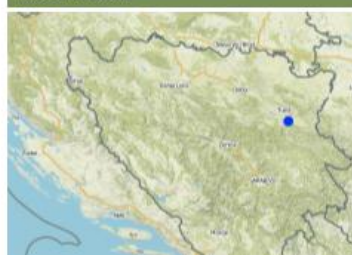
DESCRIPTION

The technology of container cultivation of berry fruits or possibly container growing of other crops allows organization of profitable agricultural production on soils with bad physical or chemical properties, soils with decreased fertility or non-fertile soils. The technology demands drip irrigation system.

Container cultivation of bush-like berry fruits is not a complete novelty. This approach for the SLM technology is characterized by extraordinary results achieved in the area of Živinice municipality by container cultivation of blueberries on soils of poor composition, physical properties and low fertility.

The technology basically enables successful breeding of bush-like berry fruits on non-fertile soils or soils with heavily endangered agricultural-productive properties. The first

LOCATION



Wooden poles used to stop movement of landslide (Photo archive of the Kladanj municipality)

Stopping the shallow landslides with barriers of wooden poles (Bosnia and Herzegovina)

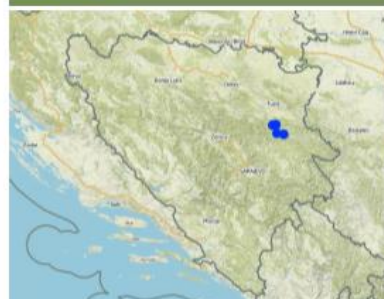
Zaustavljanje plitkih klizišta drvenim šipovima

DESCRIPTION

Formation of wooden poles arranged in two lines and pounded into the ground with possibly accompanying drainage is an efficient way of stopping the movement of land in the recovering of shallow (2 - 3 m) landslides of relatively small surfaces.

Farmers in northeast parts of Bosnia and Herzegovina traditionally applied the technology for recovery of small landslides. During the last decades, it has been frequently applied in the area of Kladanj Municipality, whose administrative services for agriculture and forestry technically specified and promoted the technology. Landslides are one of the most prominent problems of land threatening, particularly of agricultural lands in the hilly areas of Bosnia and Herzegovina, which prevails on its territory. Farmers apply the technology on their properties, but it also occurs in public interventions, e.g. in protection of roads or other infrastructure from landslides or recovery of roads' damages due to landslides. The technology allows efficient stopping of terrain

LOCATION





Podrška preduzećima

Opština Srebrenica raspisala je javni poziv za djelelu novčane podrške malim i srednjim preduzećima i zanatsko-preduzetničkim radnjama sa područja ove opštine, za šta je ove godine planirano 100.000 KM.

Riječ je o bespovratnim novčanim sredstvima za podršku prvobitnom razvoju i novom zapošljavanju i samozapošljavanju u 2018. godini, saopšteno je iz Informativne službe ove lokalne jedinice. Naglašeno je da vlasnici privrednih subjekata koji su prethodnih godina dobili potpore ili sredstva, neće učeti u izbor za djelelu podsticaja za ovu godinu.



Masline i divlji šipak

Poljoprivredni proizvođači u Trebnju veliku zainteresovanost pokazuju za uzgoj masline i šipka, jer je ovo područje izuzetno povoljno za proizvodnju tih kultura, rekao je za Srna Veselin Đutina, direktor Agrarnog fonda Trebnje. On kaže da je veći broj malih proizvođača odlučan da zasadi masline i šipak, te da će im Agrarni fond pomoći da pokrenu tu proizvodnju i da ukada šta je najsigurnije da ne bi došlo do zastojanja kao što je to bilo u proizvodnji vna.

Đutina ističe da su upravo proizvođači masline i šipka prepoznali kao kulturu budućnosti.



Rekordna prodaja uglja

Rudnik i termoelektrana Ugljevik ostvarili su rekordnu godovnu 11 miliona KM prihoda od prodaje uglja u prošloj godini. Prihod od 10.760.221 KM po ovom osnovu dvostruko je veći u odnosu na 2016. a u odnosu na prethodne godine uvećan je nekoliko puta. Ukupno je prodato 190.545 tona uglja različitog sortimenta, kao što su prečišćena kocka, orah, grah i klastriant komadi, prenosi Srna.

Ugljevički rudnik je u januaru prebio plan proizvodnje uglja za 22 posto, dok je proizvodnja u februaru, uprkos nepovoljnim vremenskim uslovima, ostavila sa 99 posto od plana.

Gubi li Bosna i Hercegovina tlo pod nogama?

Posmatrano s globalnog UN-ovog nivoa, zadatak svake zemlje je da zaustavi procese degradacije i gubitaka zemljišta i da ih do 2030. svede na nulu

Pis: DARKO OMERAGIĆ

Naučna istraživanja Poljoprivredno-pedagoškog fakulteta (PPF) Univerziteta u Sarajevu pokazuju da su u BiH trajno izgubljena najkvalitetnija poljoprivredna zemljišta, te da direktni gubici, samo za izgubljenu naselja i infrastrukturu od 2000. do 2012, iznose gotovo 60 kvadratnih kilometara.

Sarajevsko područje Tarlackeg kantona ima više od 55 kvadratnih kilometara tehnogenih pustinja, a identifikovano je više od 650 divljih deponija, koje zauzimaju površinu od čak 80 kvadratnih kilometara. Što je, primjerice, više od pola površine ukupne teritorije Sarajeva.

Zajednički problem cijele BiH je i erozija, odnosno hiljade registriranih klizišta, te neregulirani vodni režim u poplavnim područjima.

Da je BiH dio globalnih trendova u brzi za tim, pokazuje i projekat Podrška u demokraciji odluka za najvažniji i širnje praktični odzivnog upravljanja zemljištem, kojeg u BiH i provodi Poljoprivredno-pedagoški fakultet Univerziteta u Sarajevu. Cilj projekta je da pomogne određenim općinama u identifikaciji selektivno prioritiziranih mjera zaštite i upravljanja zemljištem, što će doprinijeti ne samo sprečavanju degradacije već i revitalizaciji degradiranih površina, koje su brojne.

Daleko od birokratije

Pscholog prof. dr. Hamid Čustović, rukovodilac projekta, ukazuje na važnost ovog poduhvata, koji uključuje ne cijelo FAO-a (Organizacija za prehrambu i poljoprivredu UN-a) i GEF-a (Globalni fond za okoliš), insistirajući na adekvatnom obrazovanju.

"Edukacija, u prvom redu, općinskih službenika, zaduženih za zemljišne i prostorne planiranje, jedan je od prioriteta projekta. Općine su prepoznale potrebu za ovakvim projektom i edukacijom u oblasti zaštite i upravljanja zemljištem, kojeg provodi Poljoprivredno-pedagoški fakultet već dug niz godina, kao i u saradnji sa lokalnim vlastima, od kojih se očekuje podrška i realizaciju brojnih problema u oblasti zemljišta, o kojima se rijetko i govori.



Čustović: Projektom je obuhvaćeno i pitanje komasacije na području općine Ravno / AFI S. KALINJAK

Širenje dobrih praksi mjera, u drugim lokalnim zajednicama, s istim ili sličnim problemima, jedna je od glavnih ciljeva projekta. U ovom smislu je, također, dobrodošlo pitanje komasacije zemljišta, čije se provedbe odvijaju na području općine Ravno", kaže profesor Čustović.

Na radionici održanoj 15. februara u Sarajevu na PPF-u, podriku projekta dao je UNEP (Program za okoliš UN-a), čija predstavnica Amira Čurčić vjeruje u budućnost projekta, jer se kroz njega traži za rješavanjem problema direktno na terenu i kroz edukaciju lokalnog nivoa.

"Očuvanje bih. prirodnih resursa, uključujući i zemljište, napajanje kvalitetnijom vodom, samo, nego njihovo neodrživo iskorištavanje ili zanemarivanje. U tom smislu, i proces dostizanja neutralnosti degradacije zemljišta, u našoj zemlji, kroz rad s lokalnim zajednicama, daje nadu da će se upravljanje zemljištem dovesti do nule i da se neće dogoditi degradacija, kao i gubitak resursa, posebno u značajnijim područjima", kaže Čurčić.

Uključivanje BiH u regionalne programe i projekte GEF-a donosi višestruka koristi, kako jačanju međunarodnih saradnji i razmjenu iskustava, tako i stvaranju lokalne svijesti, u procesima koji su vezani za održivo upravljanje zemljištem.

Očuvanje bih. prirodnih resursa, uključujući i zemljište, trajnija je i kvalitetnija razvojna šansa nego njihovo neodrživo iskorištavanje ili zanemarivanje

Dr. dr. Senad Opačić, koji je i na Ministarstva vanjske trgovine i ekonomskih odnosa BiH bio učesnikom ovog sastanka, smatra da se kroz ovaj projekat pokazuje vrednost i ispunjavanje međunarodnih obaveza, te direktno jačaju ekspertna znanja u BiH i uključuje u provedbu GEF-ove strategije zaštite životne sredine i održivog razvojnog ciljeva.

Lokalni na putu ka EU

"Činjenica da su najbolji stručnjaci spremni da daju doprinos projektu predstavlja izvanrednu podršku za jasno definisane ciljeve i korake u procesu održivog razvoja. Poinjevanje koncepta neutralne degradacije zemljišta, ova je promjena i čine u budućnosti će se morati neutralisati i stvoriti nadu da se degradirane površine i kultiviraju, a trajno izgubljene površine nadoknaditi kroz komasaciju. Posmatrano u globalnom UN-ovom nivou, zadatak svake zemlje je da zaustavi procese

degradacije i gubitaka zemljišta i da ih do 2030. svede na nulu", kaže Opačić.

Općinama koje pripadaju istom stepenu razvoja i razmjenu iskustava, kako i stvaranju lokalne svijesti, u procesima koji su vezani za održivo upravljanje zemljištem. Dragaica Tešić, direktorica Zavoda za prostorno planiranje i urbanizam, koji djeluje u okviru Ministarstva prostornog uređenja i zaštite okoliša TK-a, ističe da je učešće Zavoda u projektu važno.

"S obzirom na to da se radi uglavnom o zahtevima u prostoru, odavno smo projektima za čije rješavanje su potrebna značajna sredstva, neophodno pružili i kao suglasujućih aktera u procesu, od lokalne zajednice do državnog nivoa. U komasaciji, očigledno imati koristi", kaže Tešić.

U narednoj fazi projekta u općinama TK-a, koje su izradile Karte upotrebe i vrijednosti zemljišta, kao osnovna podloga za prostorno planiranje i namjeravanje održivog razvoja korištenja zemljišta, provede se analiza problema i selekcija prioritiziranih rješenja odgovarajućih mjera.

"Rezultat cijelog procesa treba biti odraz prioritiziranih projekata i ključnih rješenja u općinama, sa obzirom na činjenicu, kao i regionalnom nivou, za potencijalnu aplikaciju finansiranje, odnosno i međunarodnih finansijskih institucija", zaključuje Čustović. Ministarstvo okoliša i zaštite BiH priprema izradu Federalne strategije zaštite okoliša za devetogodišnji period (od 2019. do 2029), najavljuje dr. dr. Mehmed Čerš, pomoćnik ministra za okoliš u ovom ministarstvu. "Zemljište kao komponenta okoliša, a istovremeno strateški najvažniji prirodni resurs, ima izvanrednu ulogu u tom strateškom dokumentu. Ovaj projekat će nam pomoći da to u našem finansijski najbolji način", kaže Čerš.

CONCLUSIONS

The achievement of the defined targets and measures of LDN and SLM, in addition to political will, requires legislation, financial sources, creation of public awareness and education about land and its functions within the ecosystem in general.

Education of stakeholders and pilot activities are high priority!

Thank you!