



Building an Integrative Framing for the Food, Farming and Forestry sectors

Nexus Approach in the Western Balkans : a first appraisal

Skopje, North Macedonia

12 of December 2023

Jimmy Balouzat (AirCoop), Claire Bernard-Mongin (Cirad)
and Oriane Crouteix (AIDA)



Nexus Approach in the Western Balkans

EU integrated framework – a common opportunity ?

Keep temperature rise below 1.5°C



European Framework & objectives on the triple challenges

Climate Change	Biodiversity	Food
Green Deal (COM (2019) 640 final)		
2050 long-term Climate Strategy	Biodiversity Strategy for 2030	Farm to Fork Strategy
EU Climate Law (2021) Fit for 55 package	Nature restoration law (2022)	A number of strategies, directives and action plans up to 2023
Net-zero by 2050 and a mid-term objective of 55% of GHG emissions by 2030 according to 1990 levels	Protection and restoration of 30% of EU natural ecosystems Conversion of 25% of UAA under organic management Reduction of pesticide use by 50%	Eg. sustainable food framework in discussion to deal with : sustainable labelling, public food procurement, governance and monitoring, food safety...

CAP ?

- ❑ “pillar 1” 7 multi-purpose payments
- ❑ “pillar 2” = 20 measures and 64 sub-measures

Nutritious food for all



Halt and reverse biodiversity loss

Source: Adapted from Baldwin-Cantello et al., 2020
Triple challenge and tackling trade offs between climate, food and biodiversity goals

Nexus Approach in the Western Balkans

What common ground ?

Keep temperature rise
below 1.5°C



Climate Change

Biodiversity

Food

Green Agenda 4 Western Balkans

What are integration of strategies, policies & legal frameworks in the frame of the GAWB?

How to align high climate & biodiversity ambitions while ensuring food security ?



Halt and reverse
biodiversity loss

Nutritious food
for all



Keep temperature rise
below 1.5°C

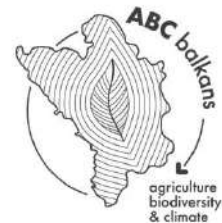


A first Attempt to Circulate into the Nexus From a WB perspective



Halt and reverse
biodiversity loss

Nutritious food
for all



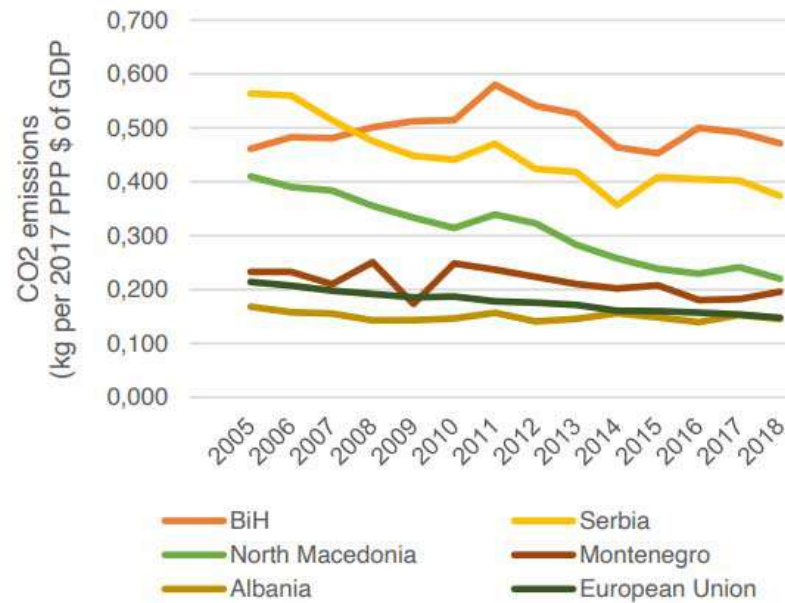
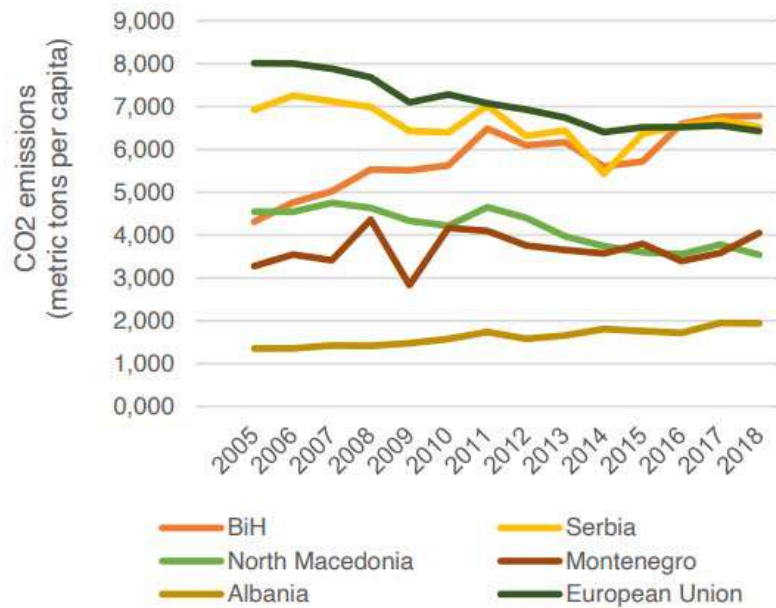
Climate Emissions in the WBC

Magnitude of decarbonization challenges varies

Keep temperature rise below 1.5°C



Figure 1. CO2 Emissions: Western Balkans¹ vs. European Union: 2005-2018



- BiH & Serbia = 4/5 of the total WBC Emissions = Carbon intensity per GDP unit > 4* to EU average + KS (no data)
- Albania, North Macedonia + MTN = carbon intensity of economy slightly lower + lower per capita than EU average

Source: World Bank Climate Watch database

¹ No data available for Kosovo

Source ASPEN, 2021 - [2021 Aspen-Germany Implementing-the-Green-Agenda-for-the-WB.pdf](https://www.aspeninstitute.de/wp-content/uploads/2021/03/2021-Aspen-Germany-Implementing-the-Green-Agenda-for-the-WB.pdf) (aspeninstitute.de)

Climate Emissions in the WBC

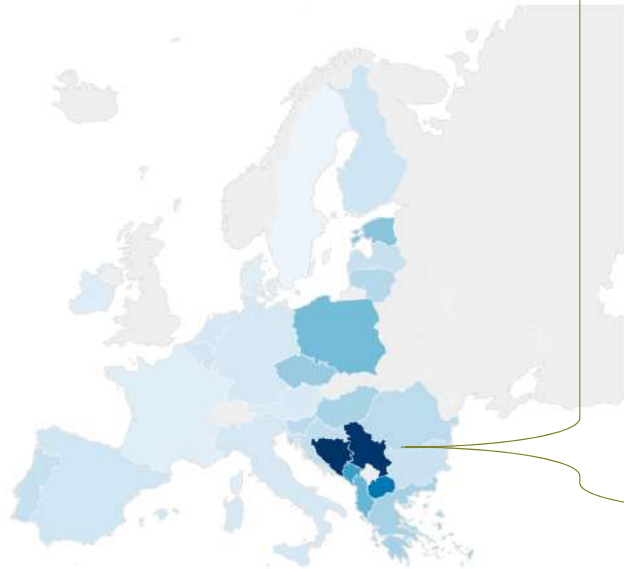
Importance of the Energy Sector

Keep temperature rise below 1.5°C



Emissions-intense Economies : WBC at the top
Tons of CO2e/millions \$ of GDP (2019)

Emission Intensity Low 0 High 1210

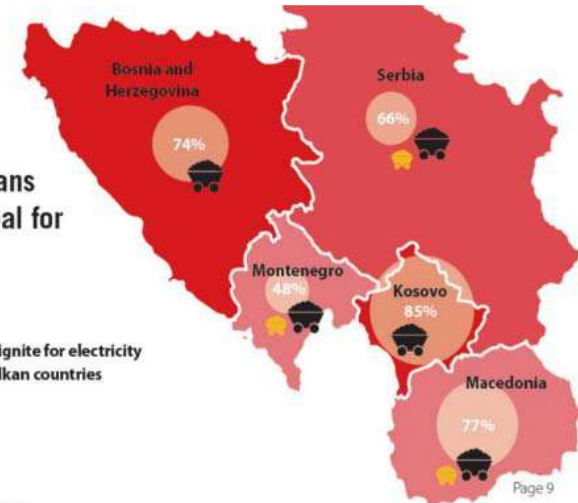


Source: Climate Watch, 2022, Washington, D.C.: World Resources Institute.

A Flourish map

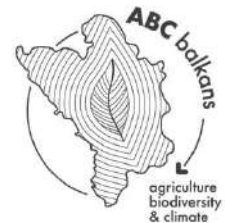
The Western Balkans dependency on coal for power generation

Figure 6: Reliance on coal or lignite for electricity generation in the Western Balkan countries



Health and Environment Alliance (HEAL)

Figure 1: Graphics from *Chronic coal pollution - EU action on the Western Balkans will improve health and economies across Europe*. HEAL, CAN Europe, Sandbag, CEE Bankwatch Network and Europe Beyond Coal. 2019



Keep temperature rise
below 1.5°C



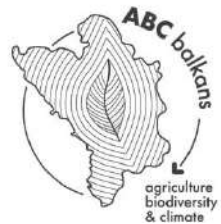
Climate Emissions in the WBC

Transformations to come in the agri-food sector

“One of the key development transformations expected in the region is the **completion of the agricultural transition** (a decline in agriculture as a share of GDP to levels below three or four percent).

This will increase the WB’s energy intensity because traditional agriculture is by far the lowest energy-intensive economic activity in the region”

(Source ASPEN, 2021)

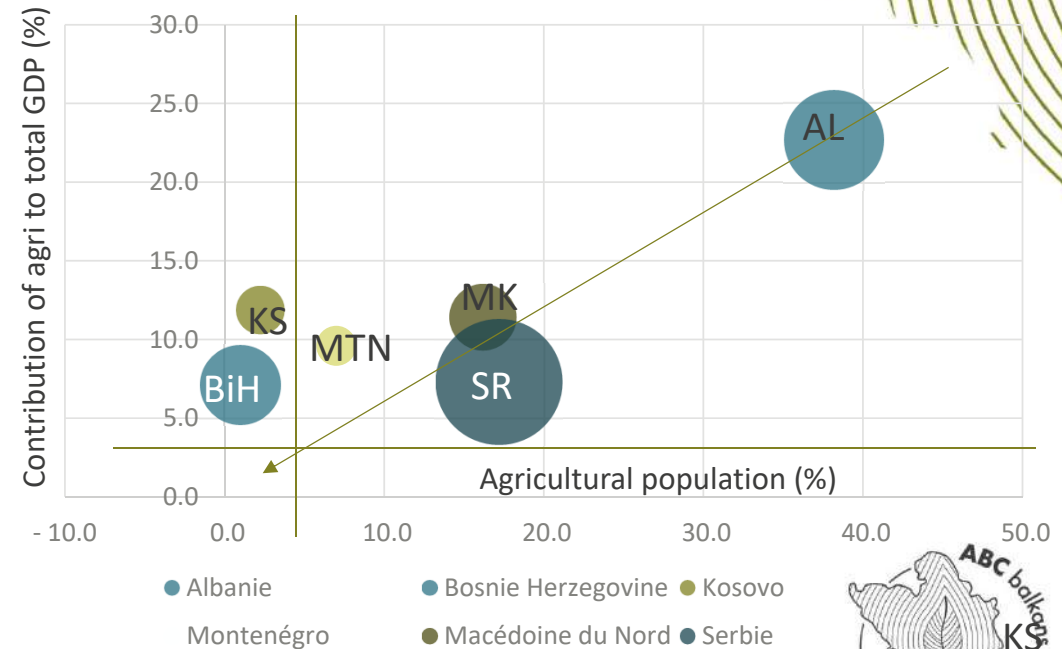


From an Integrated Perspective

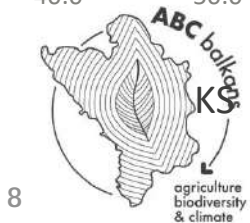
Changing agriculture profile

- ❑ Declining weight of agriculture in the economy since 1990 ...
 - ❑ ... But agri-food sector is still economically important for the Western Balkans and plays an important role in terms :
 - ✓ of food security,
 - ✓ rural development,
 - ✓ and poverty reduction, resilience
- (OECD, 2019)

Agricultural Profiles in the Western Balkans (2017)



Source: Bernard-Mongin, 2017





From an Integrated Perspective Resilience of small scale agriculture

- **Agricultural structure (still) marked by the predominance of small agricultural holdings - inf. at 2 ha**
 - ✓ Predominance of small scale farming = more than 80% of total for Albania, Kosovo and Macedonia and at least 50% of agricultural holdings in Serbia are less than 2 ha
 - ✓ Self-sufficiency/Auto-consumption and income diversification-Importance of remittances, pensions and other public transfers, more recently agro-tourism and quality products

- **Dynamic of specialization ? few statistics on large farms (over 50 ha)**
 - ✓ No farms > 100 ha in Albania, a few in B&H and Montenegro
 - ✓ Corporate agriculture = farm consolidation in Serbia > 100 ha = 0.2% of farms or 8.1% of total UAA
 - ✓ Coexistence of dual production structures in some regions (eg. Voivodina (18% of total SAU is cultivated by farms > 100 ha (Bozic, 2015).

Table 1. Number of agricultural holdings and distribution of Utilised Agricultural Area (UAA)

Categories	Albania	BiH	Montenegro	Serbia	FYROM
Agricultural holdings (ths)	394.9	515.0	48.9	631.6	192.4
0 - 2 ha	354.6	250.0	35.9	308.4	184.4
2 - 5 ha	40.0	150.0	7.6	182.5	
5 - 10 ha	0.2	90.0	2.7	89.1	6.3
10 - 50 ha	0.05	20.0	1.8	45.3	1.7
<50 ha	0.0	0.2	0.9	6.2	
UAA (ths ha)	427.3	2444.0	221.4	3437.4	264.3
0 - 2 ha	305.1	N/A	23.7	273.6	188.5
2 - 5 ha	120.0	N/A	23.9	596.1	
5 - 10 ha	1.3	N/A	19.1	617.3	42.7
10 - 20 ha	0.9	N/A	38.4	825.0	33.1
<50 ha	0.0	N/A	116.3	1125.5	
Average size (ha)	1.1	4.7	4.5	5.4	1.4

Source: Arcotrass (2006) for Albania and BiH, MonStat (2011) for Montenegro, SORS (2013) for Serbia and SSO (2007) for FYROM

Source: Mizik, 2013

From an Integrated Perspective

... Food self-sufficiency ratio

Nutritious food
for all



Compared situations in the 6 WB countries from a self-sufficiency ratio

$$SSR = \frac{\text{production}}{\text{production} + \text{import} - \text{export}} \times 100\%$$

Source : Brankov, 2022

Self-Sufficiency Ratio	Albania	Bosnia and Herzegovina	North Macedonia	Montenegro	Serbia
Cereals (total)	46-62%	63-84%	63-84%	<23%	>140%
<i>wheat</i>	23-45%	46-62%	46-62%	<23%	>140%
<i>maize</i>	63-84%	85-99%	63-84%	<23%	>140%
<i>barley</i>	46-62%	63-84%	85-99%	<23%	115-140%
Meat (total)	63-84%	63-84%	23-45%	23-45%	85-99%
<i>poultry</i>	23-45%	85-99%	<23%	23-45%	85-99%
<i>pig meat</i>	46-62%	23-45%	63-84%	<23%	85-99%
<i>bovine</i>	85-99%	23-45%	23-45%	46-62%	115-140%
<i>mutton and goats</i>	100-114%	100-114%	>140%	115-140%	115-140%
Milk (total)	85-99%	85-99%	85-99%	63-84%	100-114%
Eggs (total)	100-114%	100-114%	85-99%	63-84%	100-114%
Fish (total)	46-62%	<23%	<23%	23-45%	<23%
Fruits (total)	85-99%	63-84%	115-140%	46-62%	115-140%
<i>apples</i>	85-99%	63-84%	>140%	<23%	>140%
<i>grapes</i>	85-99%	63-84%	115-140%	100-114%	85-99%
Vegetables (total)	100-114%	85-99%	115-140%	46-62%	100-114%
<i>tomatoes</i>	115-140%	63-84%	100-114%	23-45%	100-114%
<i>onions</i>	85-99%	63-84%	100-114%	<23%	115-140%
Starchy roots (total)	85-99%	85-99%	100-114%	63-84%	85-99%
<i>potatoes</i>	85-99%	85-99%	100-114%	63-84%	85-99%
Pulses (total)	85-99%	63-84%	63-84%	63-84%	63-84%
<i>beans</i>	85-99%	46-62%	46-62%	<23%	46-62%
Oil crops (total)	85-99%	<23%	46-62%	<23%	115-140%
<i>sunflower oil</i>	<23%	85-99%	<23%	<23%	>140%
Sugar crops (total)	<23%	<23%	<23%	<23%	100-114%

From an Integrated Perspective Trade balance

Nutritious food
for all

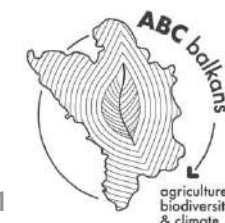


Self-sufficiency in the Western Balkan region as a whole

> 140%	100-114%	85-99%	63-84%	< 23%
Corn and products	Mutton and goats meat	Onions	Beans	Fish and seafood
Oil crops	Sugar (raw equivalent)	Potatoes	Poultry	
Sunflower oil	Wheat and products	Eggs	Pig meat	
Apples	Tomatoes	Milk	Bovine meat	
	Grapes	Sugar crops		

Trade Balance : overall, a balkan food system quite self-sufficient

Source: adapted from Brankov, 2022

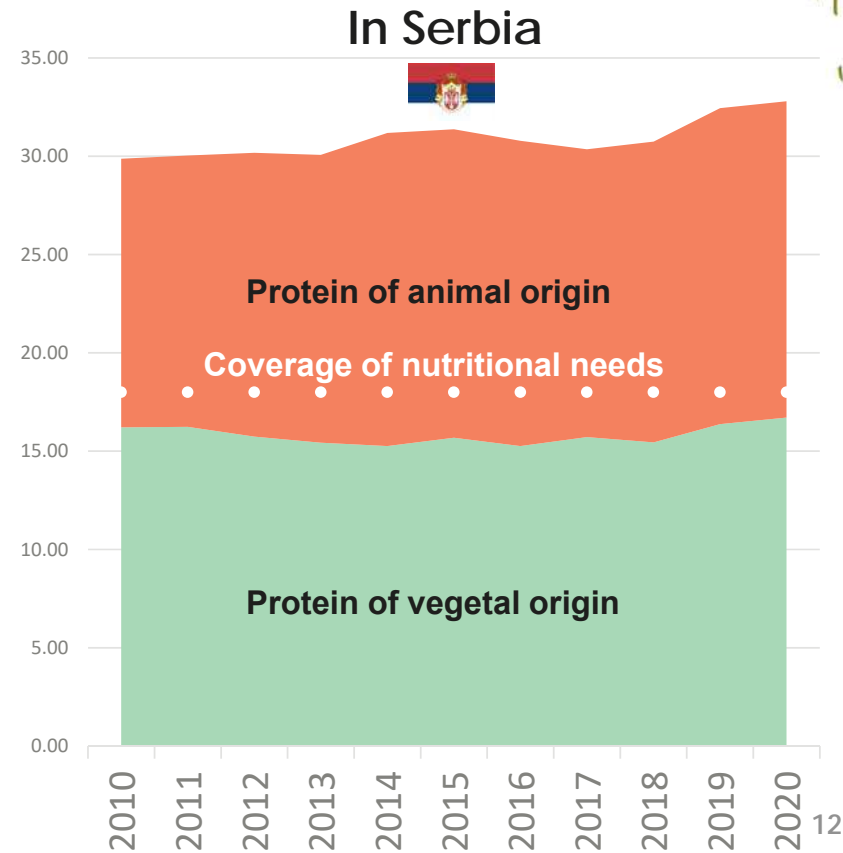
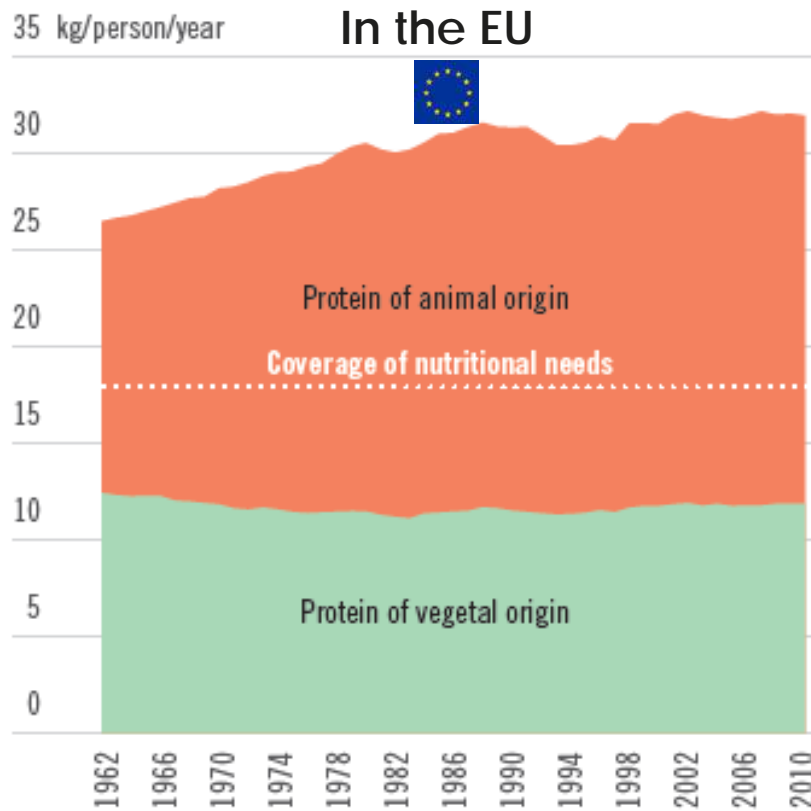


Nutritious food
for all

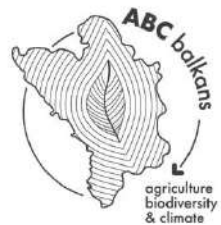


The European diet vs. The Serbian diet

Comparison of the annual protein consumption



Source: adapted from Poux et al, 2019

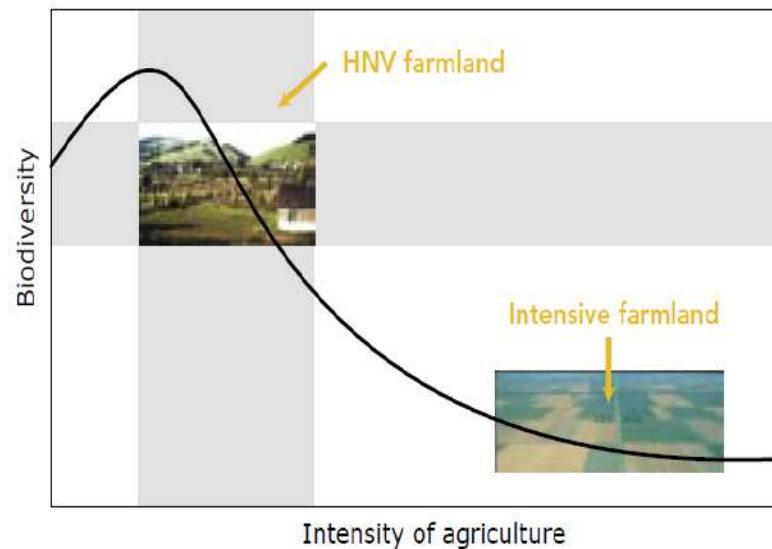


From an Integrated Perspective Climate*Biodiversity Synergy in the farming sector



Halt and reverse
biodiversity loss

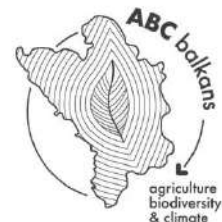
Figure 2 General relationship between agricultural intensity and biodiversity



“High nature value (HNV) farmland are those areas in Europe where agriculture maintains or contributes to a high level of biodiversity”.

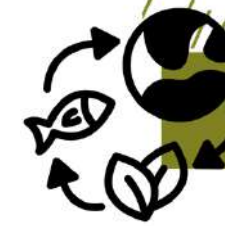
Source: after Hoogeveen et al., 2001 (see Appendix B for further explanation).

Photos: Peter Veen (left); Vincent Wigbels (right).



From an Integrated Perspective

High Nature Value Farming



Halt and reverse
biodiversity loss

Farm Holding Structure allow the
Importance of the semi-natural
vegetation within agricultural area:

**Strong potential for HNV
farming
(used as a proxi of
biodiversity*agriculture)**

Estimated High Nature Value Farmland in Europe (2012)



Estimated High Nature Value (HNV) farmland presence in Europe, 2012 update

- HNV farmland
- No data
- Outside coverage

Data sources:
Corine 2006, Natura 2000
IBAs: BirdLife International
PBAs: De Vlinderstichting (NL)
National biodiversity data
(UK, CZ, LT, SE, ES)
National HNV contributions
(HR, SR, CH)
Cartography: Umweltbundesamt
Methodology: EEA & JRC 2007
adapted by: ETC-SIA 2012

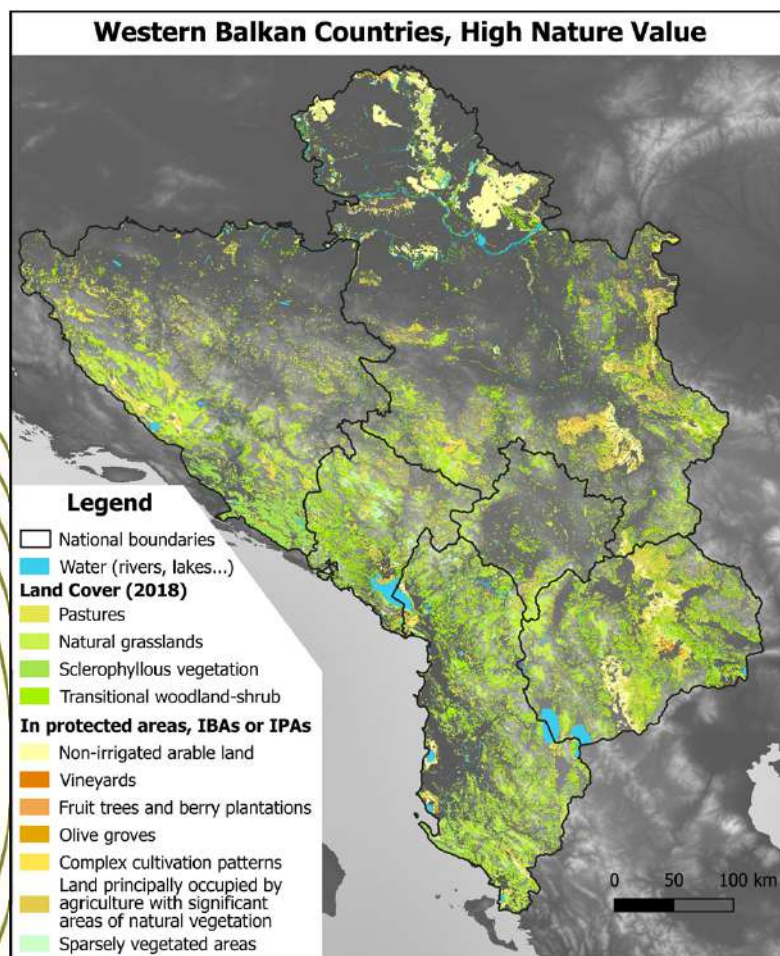
© EuroGeographics for
administrative boundaries

Source: EEA, 2018

From an Integrated Perspective High Nature Value Farming in the WB



Halt and reverse
biodiversity loss



Authors: Crouteix O. AIDA, 2023

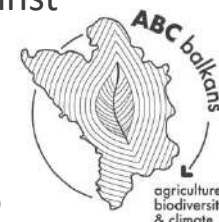
HNV farmland is divided into three main types
(according to Andersen et al. 2003):

Type 1: Farmland with a high proportion of semi-natural vegetation.

Type 2: Farmland dominated by low intensity agriculture or a mosaic of seminatural and cultivated land and small-scale features.

Type 3: Farmland supporting rare species or a high proportion of European or World populations.

- An important asset to be preserved and valorized (against intensification or abandonment)
- A comparative advantage over the Western Europe intensified farming systems



From an Integrated Perspective

HNV farming complementary to forests

Importance of forest for local uses

- Woody biomass for heating – high dependance rate
- NTFP – income diversification (MAP sector)
- Pastoral grazing
- + Timber wood (high forests)

Importance of forests as carbon sinks

Current national mitigations strategies involve carbon removal from existing forests stands (+ increased contribution in the future (afforestation, reforestation, sustainable management) etc.

Nexus Approach in the Western Balkans a Common Ground for an alternative narrative

- ❑ Need to further consolidate a regional integrated vision for food, forests & farming the WBC
- ❑ But already strong assets to build the case for the contribution of WB food systems to sustainable transition proposed in the frame of the Green Deal
 - ✓ WB food systems draw on a farming sector (small and medium scale agriculture), complementary to forestry sector (community led)
 - ✓ Which supplies regional/localized food systems and ensure food security healthy diets
- ❑ Such integrated framing = opportunity for WBC to shift from « norm taker » to « norm maker » posture + background for an intersectoral dialogue with the Energy sector