

Sustainable Land, Livelihoods and Energy Initiative - SLLEI



Conference "**CLUSTERS as Engines of Resilient, Digital and Green Economic Competitiveness**"

Chisinau, December 8, 2021

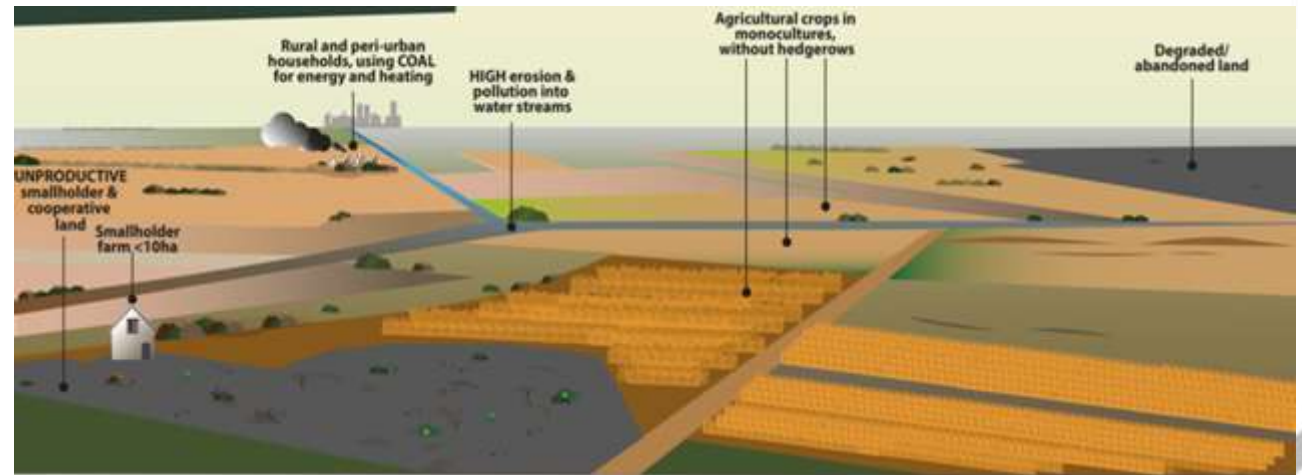
Zorica Marić, cluster expert





Problem:

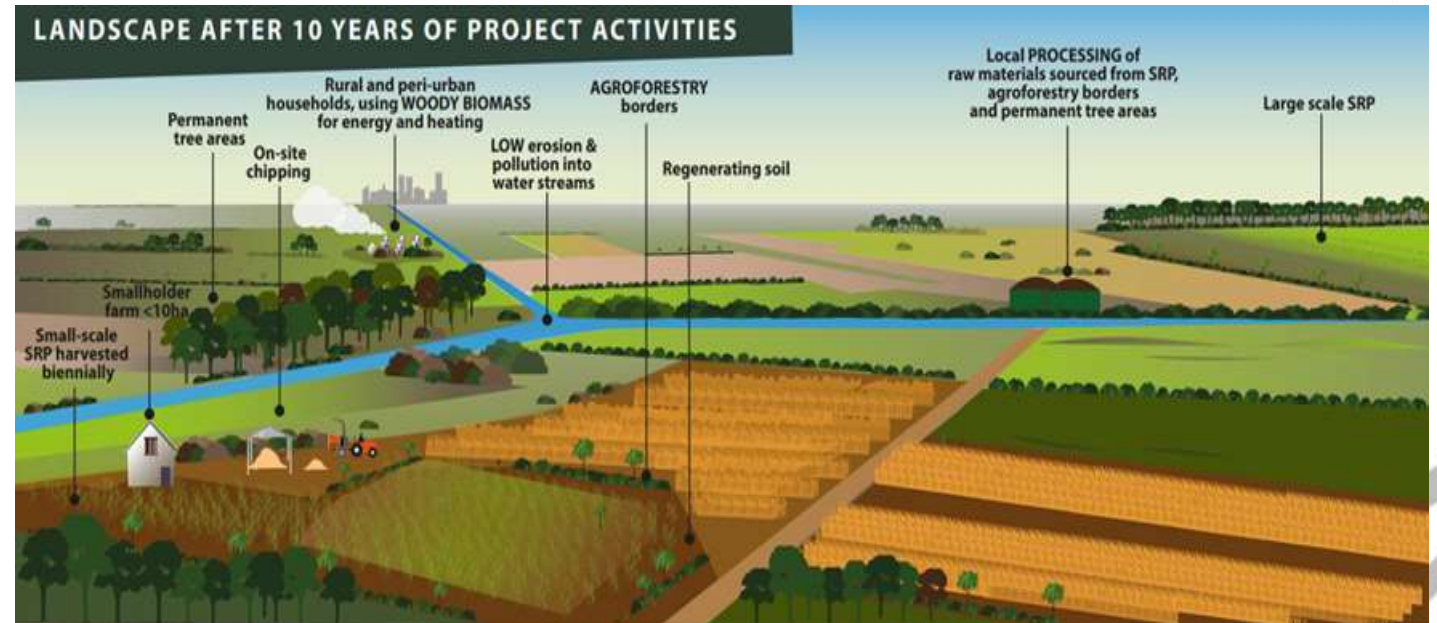
- National energy production in Serbia mostly relies on low-energy lignite
- Rural and peri-urban households using COAL for energy
- Unproductive smallholder and cooperative land
- Agricultural crops in monocultures without hedgerows
- Degraded land
- Abandoned land



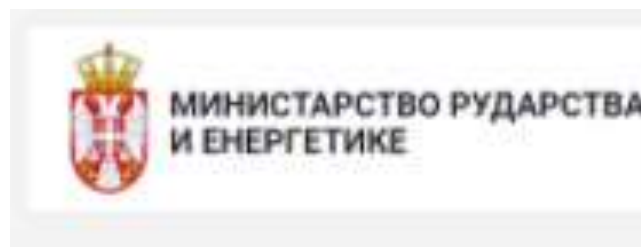
Massive greenhouse gas emissions,
High erosion and pollution

Goals:

- Ensuring energy security needs portfolio of solutions
- Ensuring 'just transition' jobs for coal miners and vulnerable groups
- Restoring degraded land
- Permanent tree areas on non-agricultural land



Sustainably producing biomass for jobs, power, heat and health



Bioeconomy solutions:

- short rotation coppices or plantations (SRPs) of fast-growing tree and reed species for the production of woody biomass and biogas;
- agroforestry borders around as biodiverse and economically beneficial buffers;
- long-term conservation of tree areas



Activities



Pilot plot selection



Land preparation



Planting



Maintanance



Monitoring
Evaluation

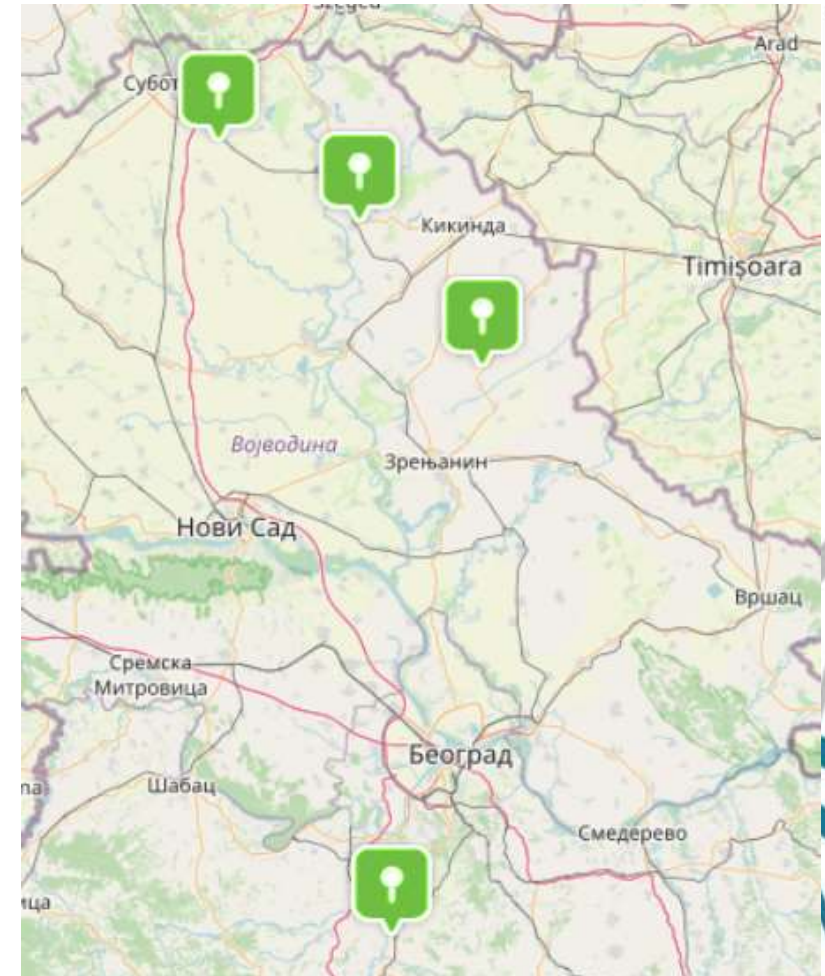


Scaling up



Pilot locations

- Subotica, Regional Landfill
- Kolubara, EPS – RB
- Čestereg, Žitište Municipality
- Padej, Agricultural Cooperative



Subotica Regional Landfill

- Public company 2 ha
- Planted on communal sewerage sludge – phytoremediation
- Wood chips for compost production - use for heating
- Potential for scaling at site and to other seven regional landfills in Serbia
- Reduce existing air and water pollution



Kolubara EPS – RB

- State land – owned by EPS
- 3,2 ha of willow planted at abandoned mine site
- Potential off taker – EPS lignite boilers near pilot site
- Potential for scaling at site to ca >100 ha and at another EPS abandoned mine sites around the country
- EPBiH Bosnia and Herzegovina (30 ha this year, potential up to 1000 ha) and
- EPSM Macedonia piloting in 2022



Čestereg Žitište Municipality

- Municipality owned land
- 4 ha pilot project Willow
- Potential for scaling in Municipality
Žitiste ca 200 ha of degraded land
- Potential off takers – at least 2 biogas
plants in circle of 30 km
- Team in the village already has
experience in planting SRP



November 2021, 6 months after planting





Scaling
10 ha of pilot
in 2021 to
60 -100 ha in
2022



**Growth
from
national to
regional**
Serbia start
of in 2019,
BiH in
2020/21,
Macedonia in
2022



**Network and
Partnership Building**
Raised interest and
partnership and
support from the
governments and big
state power
companies, local
governments, private
companies, institutes
for sustainable energy
from bioenergy crops



**Addressing
social and
transitional
issues**
Supported just
transition and
decarbonisation
process
in the mining
sector



Capacity Building
200+ stakeholders
and 90+ farmers
trained



BMP
Business Model
Prototype
Developed



Impact

- 75,000 ha of sustainable biomass for multiple new value chains
- 15,000-30,000 green jobs (direct and indirect)
- Restored biodiversity and soil on 100,000+ ha
- Rural green economic (infrastructure) growth and resilience

Beneficiaries

- National and local government
- Private sector
- Banks
- Environmental and social NGOs
- Farmers
- Potential off takers
- Unemployed



Way ahead/transferability

- SLLEI Phases 2-4 long-term SRP biomass off take agreements with industry, district heating companies, and electric power plants
- yield over EUR 1B in profits for a diverse group of participants over the 20-year project life
- scalable elsewhere in the Western Balkans and beyond.
- It could include co-locatable renewable energy technologies, such as solar PV, wind, and geothermal



Thank you
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