Stakeholders Conference & Validation Workshop

Bruxelles

16 June 2015

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Overview

S2BIOM supports the sustainable delivery of non-food biomass through developing strategies & roadmaps that are informed by a computerized toolset with harmonized data for EU28, WBC, Ukraine, Moldova & Turkey.

S2BIOM is developing a concise knowledge base on sustainable lignocellulosic feedstocks to facilitate integrated design & evaluation of optimal supply chains from production, through logistics & trade, to end-use.

A comprehensive and multi-layered set of case studies is implemented to complement strategies & roadmaps with bottom-up information, and to ensure that the toolset is validated in a close-to-real-life environment.

In East and South-East Europe, where biomass supply chains are less structured and data scarcer, case studies are addressing wider aspects, including policy perspectives & stakeholder engagement.

Strucutre

Theme 1 (WP1 – WP4)

WP1: *Sustainable biomass cost-supply*

WP2: *Biomass conversion technologies for energy and bio-based products*

WP3: *Optimal logistics for sustainable non-food biomass feedstock delivery chains*

WP4: *Toolset for interactive biomass supply – demand matching in sustainable biomass value chains*

Theme 2 (WP5 – WP8)

WP5: *Value chain sustainability across the bio-based sectors*

WP6: *Regulatory & financial framework to mobilise non-food biomass to bio-based products & bioenergy market*

WP7: *Integrated Assessment-Optimisation of biomass supply chains to satisfy the demand*

WP8: ***Development of a vision, strategies, implementation plans and a R&D roadmap***

Theme 3 (WP9 – WP10)

Theme 1: *Results*

Theme 2: *Results*

WP9: ***Regional adaptation & application, user integration, testing, validation & implementation planning***

WP10: *Stakeholder engagement, cooperation with initiatives, dissemination and exploitation of results*

Rationale

Rationale:

- → ***To involve stakeholders with a participatory approach into the development of SRT for ensuring that their needs are incorporated into the design.***
- → ***To involve stakeholders for field testing of the tool through case studies.***
- → ***To approach stakeholders along the value chain at various levels to "market" the SRT during and after testing and to support dissemination, exploration and improvements through constant interaction and feedback.***

Key output: The case studies are selected and/or launched to validate the Strategies, Roadmaps and the Toolbox from the users' point of view, to gather further factual data and to support ex-ante impact assessment

Activities

WP 9: Regional adaptation & application, user integration, testing, validation and implementation planning

Objectives: ***WP9 specifically targets the interaction mechanisms and communication channels with stakeholders across the supply chain and different regional and sectorial levels to ensure the validation of SRTs and implementation plans.***

Structure: Task 9.1 → *Identification of stakeholders and their requirements*

Task 9.2 → *Testing and validation of the toolset with stakeholders*

Task 9.3 → *Case studies*

T9.3.1a: Pre-studies on extra data acquisition

T9.3.1b: Advanced Case Studies (ACS)

T9.3.2: Strategic Case Studies (SCS)

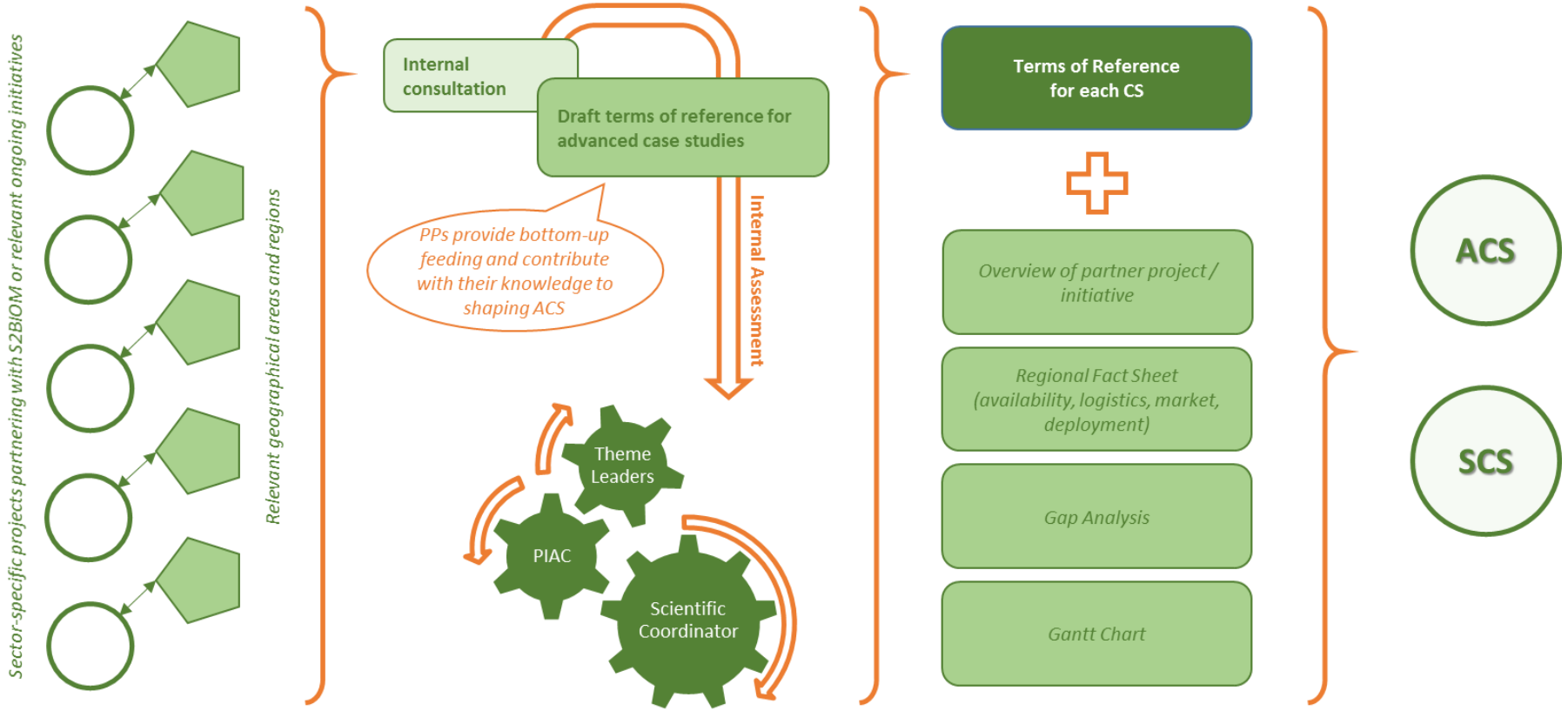
Case Studies

Task 9.3: Case Studies

To expand and detail datasets in Theme 1, to complement SRT developed in Theme 2 with the conditions of concrete regions, and to validate the Toolset through a top-down application to specific contexts, the Consortium foresaw a multi-layered set of case studies to be implemented in at least ten regions across EU28 and Neighbouring countries.

The case study exercise is devised in two-plus-one complementary components so to better reflect the specificities of different areas involved, as well as the characteristics of the value chains examined.

Case Studies



Advanced Case Studies

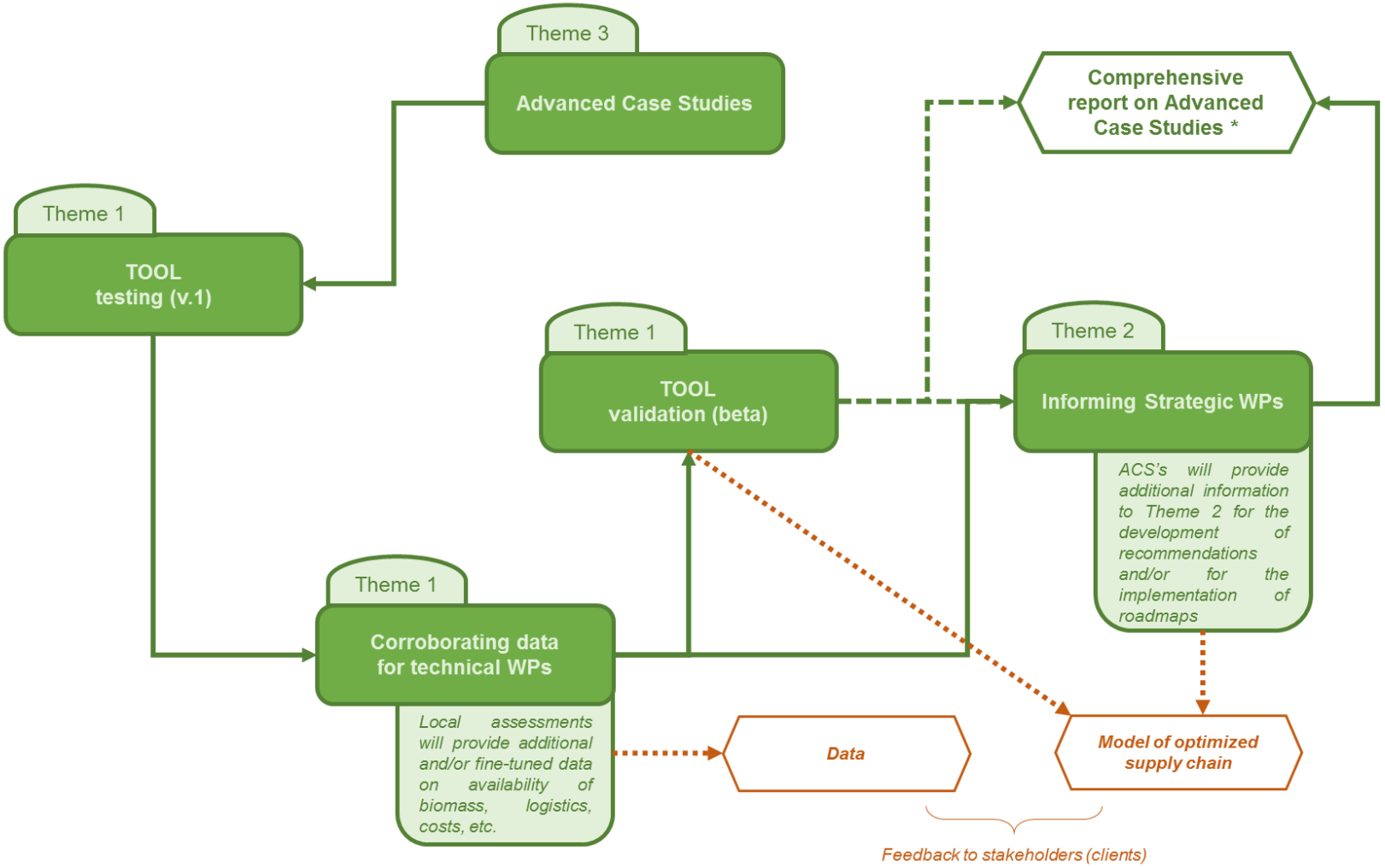
Task 9.3.1: Pre-studies and Advanced Case Studies

In areas with more developed and structured sustainable biomass-to-energy value chains, the Consortium is implementing Pre-studies, for the acquisition of extra data in selected regions. These will further inform ACS for the appraisal of regional strategies & local action plans, as well as for the validation of the Tool.

Pre-studies/ACS are being carried out or planned in the following regions:

- Tri-National region Upper Rhine Region; The Netherlands;
- France (Burgundy);
- Spain (Miajadas);
- Spain 2 Region (Zaragoza, Aragon region);
- Scandinavian Region (Finland)

Advanced Case Studies



Advanced Case Studies

Task 9.3.1: Pre-studies and Advanced Case Studies

Scandinavian Region: Äänekoski region, Finland

Äänekoski biorefinery

- Investment: €1.100 million
-
- Time schedule:
  2015: planning and selection of equipment;
  2016: installation of main equipment;
  2017: starting new factory;
  2018: commercial operation.

- Feedstock: 6,5mln. m³/year or 18.500 m³/day of wood, i.e. 240 trucks & 70 railway cars a day

- Bio-products: pulp, turpine, tall oil, lignin products, activated sludge, biogas and fertilizers, sodium sulphate (Glauber´s salt), new fibre products
- Pulp production: 1.3mln. t/year or 3.700 t/day, i.e. 45 railway cars (87,5% for export)
- Production of black liquor for combustion is 80 litres/s

- Factory produces 1.800 GWh electricity (2.5 % of Finnish electricity production) and production is 2.4-times higher than consumption, annual sales of electricity is 1.050 GWh

Strategic Case Studies

Task 9.3.2: Strategic Case Studies

While ACS are mainly be implemented in EU28 building on synergies with other projects and ongoing initiatives, Strategic Case Studies (SCS) are performed in areas with lower biomass supply and logistics development, and relatively poor availability of data.

SCS address wider, more strategic aspects, focusing also on the involvement of stakeholder groups, and will be carried out in the following regions:

- Danube Region (Autonomous Province of Vojvodina, Serbia);
- South-East Europe and Turkey (Greece, Serbia, Turkey, Romania and Bulgaria);
- Eastern Europe (Ukraine);
- Romania.

Strategic Case Studies

South-East and East European Countries are reputed accessible and wide reservoirs of sustainable biomass, owing to the role of agriculture & forestry in their economies.

Notwithstanding proximity with Countries leading the "bioenergy rush" and other encouraging factors, this potential is still to be fully valorized by European industry.

Establishing conditions for attracting investments in the region is paramount, as development and / or uptake of advanced technologies and business models is key to foster economic growth and job creation.

Strategic Case Studies

Strenghts

- ✓ *Underutilized agricultural potential*
- ✓ *Underutilized residues potential*
- ✓ *Recoverable industrial assets*
- ✓ *Developed R&D and HR assets*
- ✓ *Political will and targets @ EU enlarg.*

Weaknesses

- ❖ *Fragmented ownership*
- ❖ *Marginalized lands*
- ❖ *Obsolete mechanization*
- ❖ *Low investment capacity*
- ❖ *Degraded transport infrastructures*

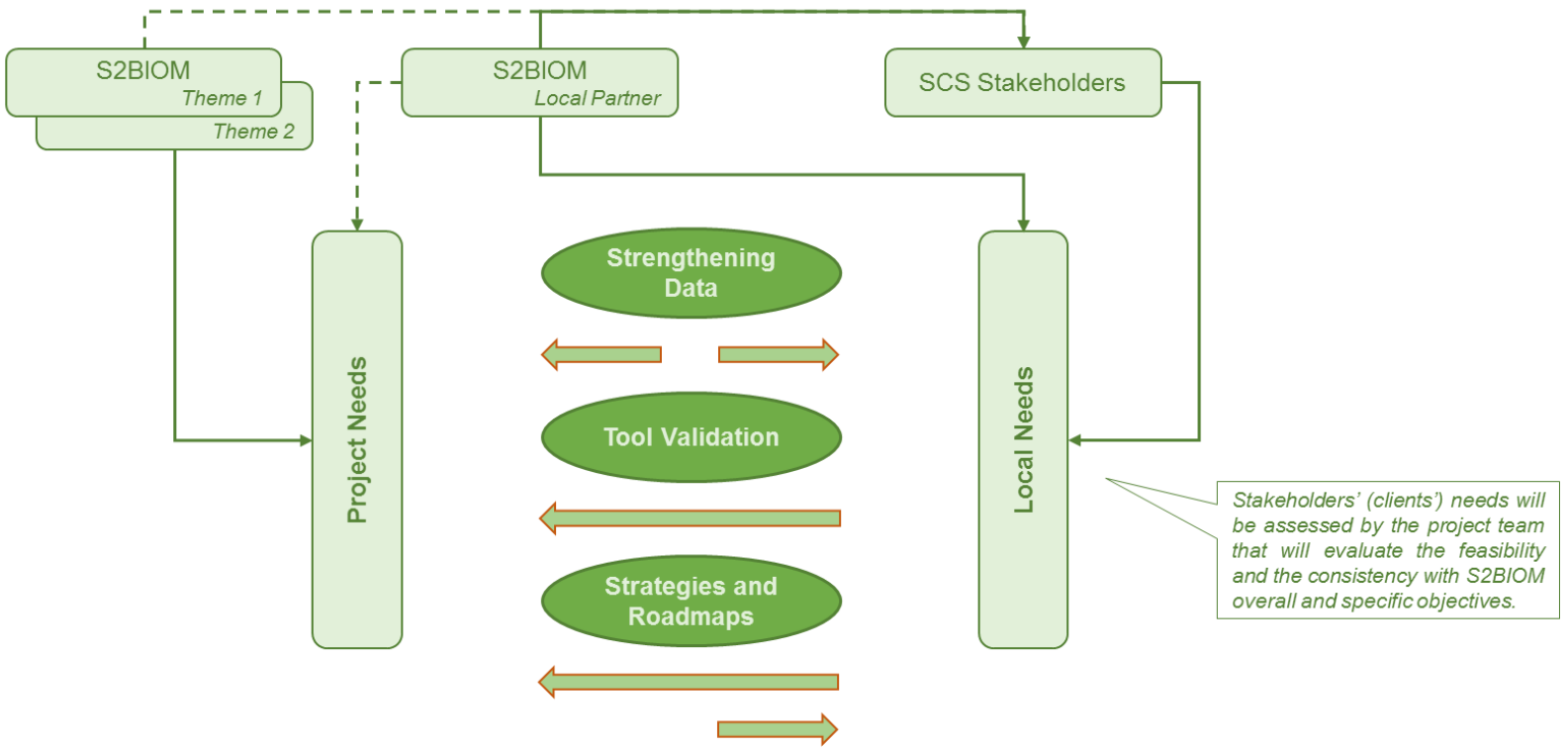
Opportunities

- ✓ *Wide internal market, open to EU*
- ✓ *Investment incentives*
- ✓ *Business environment*
- ✓ *Danube logistics*

Threats

- ❖ *Commitment & capacities*
- ❖ *Land & water trends*
- ❖ *Political uncertainties*
- ❖ *Access to finance*
- ❖ *Other…*

Tasks


S2BIOM
Theme 1
Theme 2
S2BIOM
Local Partner
SCS Stakeholders
Project Needs
Strengthening Data
Tool Validation
Strategies and Roadmaps
Local Needs
Stakeholders' (clients') needs will be assessed by the project team that will evaluate the feasibility and the consistency with S2BIOM overall and specific objectives.

Strategic Case Studies

Danube Region (Autonomous Province of Vojvodina, Serbia)

The SCS, implemented by the Faculty of Technical Sciences of the University of Novi Sad, has been designed so to provide in-depth insight in the current situation and potentials of lignocellulosic biomass in Vojvodina (Serbia), including an assessment of supply chains and logistics, that will lead to articulating a preliminary assessment of the feasibility of a bio-ethanol plant in the region.

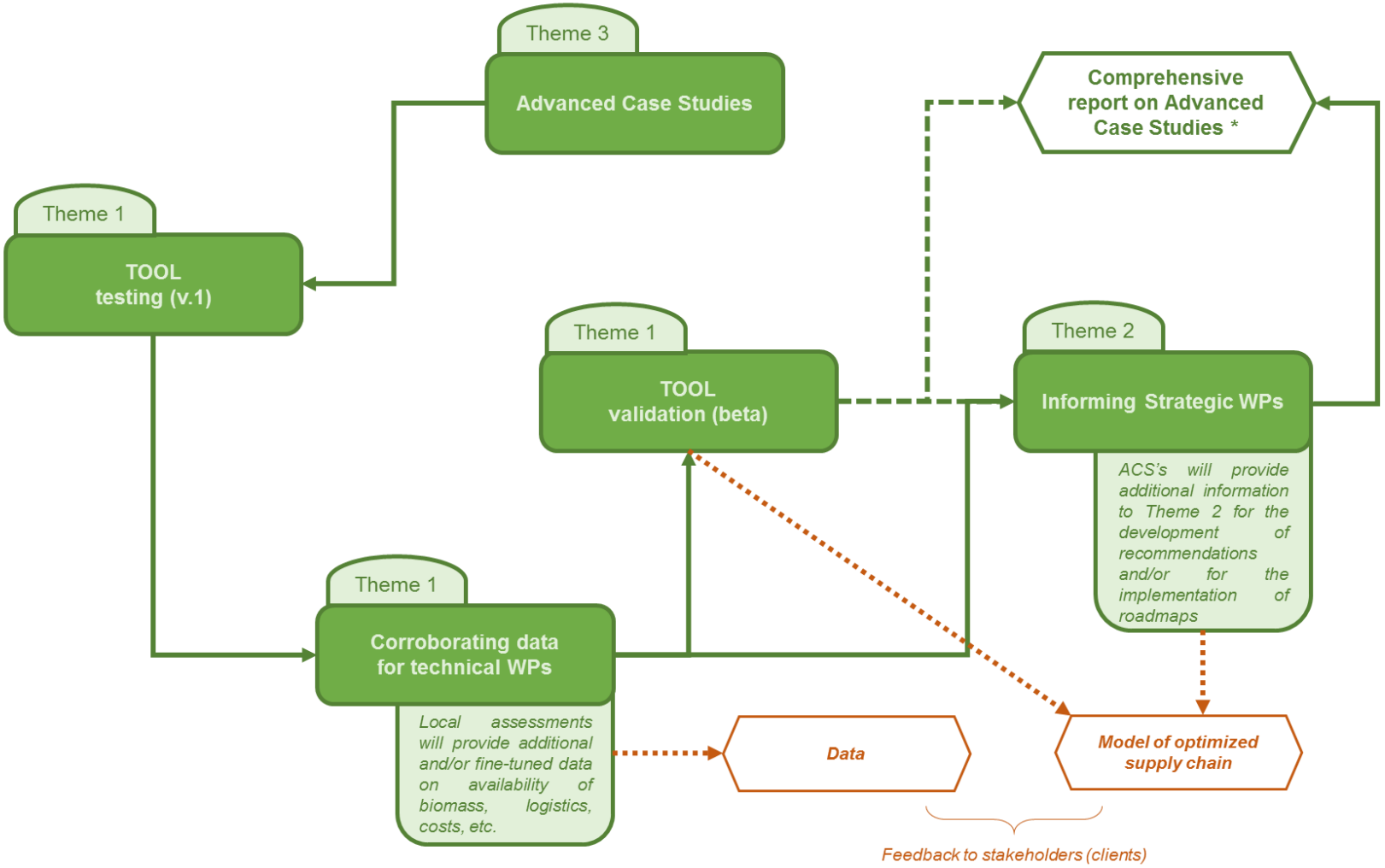
South-East Europe and Turkey (Greece, Serbia, Turkey, Romania, Bulgaria)

The SCS, implemented by CERTH, focuses on the possibilities of implementing agrobiomass co-firing in existing and upcoming lignite-fired plants. It includes a regional overview of potentials, indicative costs for delivery for different supply chains, cost comparisons with alternative bioenergy options.

Eastern Europe (Ukraine)

The SCS, implemented by the Renewable Energy Agency of Ukraine, will provide an assessment of most promising residues at country level, including primary and secondary agricultural residues, woody biomass, and energy crops. The SCS will assess existing barriers to the access of non-food biomass feedstock to the energy market, and suggest measures to foster mobilization and delivery at the local and national level.

Strategic Case Studies



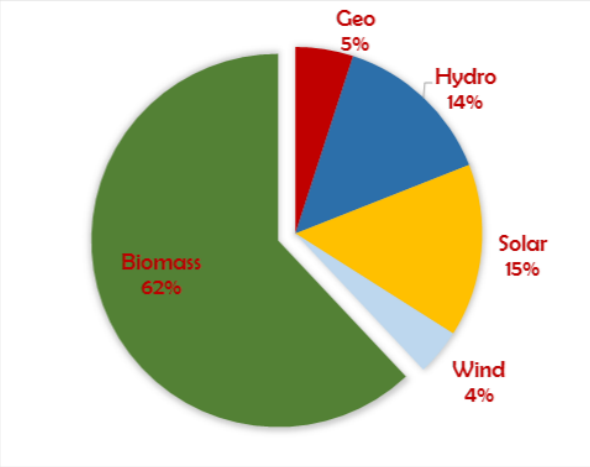
Tasks

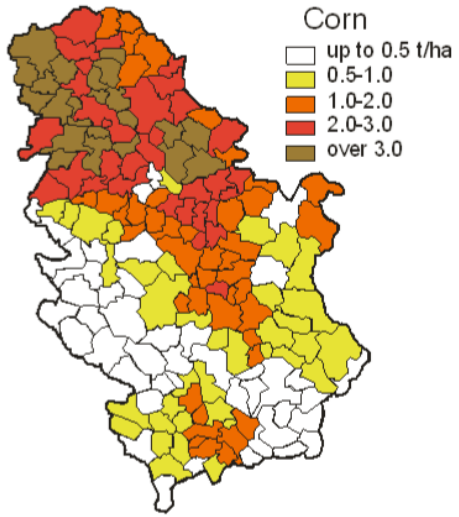
AP Vojvodina, Serbia

The economy of Vojvodina is largely based on agriculture and food industry, with fertile agricultural land making up 84% of its territory.

The region is well connected with neighbouring countries and benefits from Danube river logistics; it also has a strong industrial background, also in the energy and conventional fuels sector.

Regional authorities are committed to sustain the development of RES, with particular regards to the optimization of the use of agricultural residues. To this end, a regional biomass action plan was commissioned, and policy measures are developed.





Residues potential

Crop	Acreage (1.000 ha)	Total mass (1.000 t)	Sustainable potential (1.000 t)		Energy potential (1000 t)	
			Big farms	M/S farms	Big farms	M/S farms
Wheat	298	1.120	264	320	**250**	**280**
Rye	1.5	4.5	1	1	1	1
Barley	48	155	52	50	48	45
Corn	637	3,288	s 114	s 310	**$ 110**	**$ 280**
			c 10	c 360	**€ 10**	**€ 330**
Sunflower	172	680	0	0	0	0
Soybean	128	620	150	130	150	130
Rapeseed	4.2	17.6	6	5	6	5
Total		5.885,10	597	ca. 1.176	ca. 575	ca. 1.071
			1.773		**1.646**	

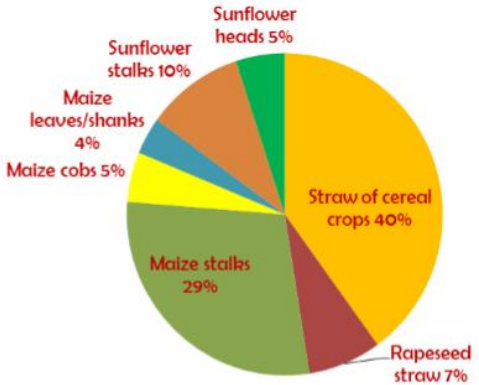
Prof. Dr. M. Martinov et al. — University of Novi Sad, Faculty of Technical Sciences, Dep. Environmental Engineering (Serbia)

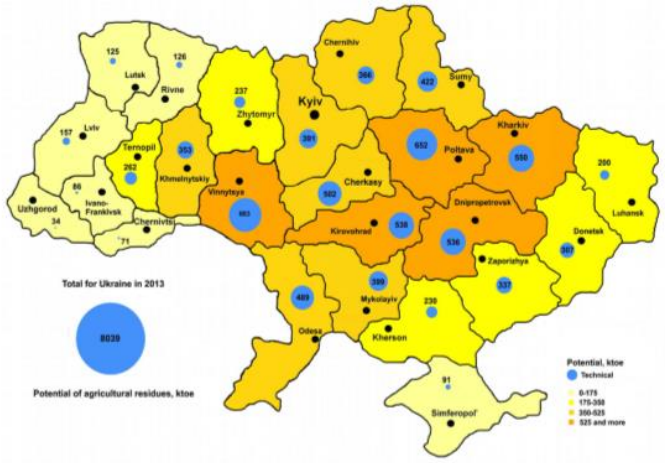
Tasks

Ukraine

Being one of the world's largest grain exporters, Ukraine has a highly developed agro-food sector. It has extensive fertile farmlands, yet large portions of agricultural land are currently under- or non-utilized. Notwithstanding the importance of agriculture, the share of biomass in the total energy production is currently slightly more than 1,2% with relevant untapped potential.

The instability in the region jeopardizing the country's energy security, fostering RES and gradual replacement of fossil fuels is paramount. Assessment of potentials and realistic cost/supply estimations are necessary to strengthen the sustainable biomass market.





Residues potential

	Yields, Mt	Theoretical potential, Mt	Technical pot., Mt	Technical pot., Mtoe
Cereal straw	32.1	30.6	9.2	3.2
Rapeseed straw	2.4	4.2	1.7	0.6
Corn	30.9	40.2	16.0	3.0
- stalks		*30.3*	*12.1*	*2.3*
- cobs		*5.6*	*2.2*	*0.4*
- husk		*4.2*	*1.7*	*0.3*
Sunflower	11.0	20.9	8.3	1.2
- stalks		*14.3*	*5.7*	*0.8*
- baskets		*6.6*	*2.6*	*0.4*
TOTAL	76.4	95.9	**35.2**	**8.0**

Dr. Tetiana Zhelizna et al. Renewable Energy Agency (Ukraine)

Tasks

The economic crisis hit hard in Central, East and South-East Europe, quite reshuffling priorities. Low prices on fossil fuels are discouraging new investments, while foreign investors seem still more interested in services & manufacturing capacities.

Countries of the region would benefit from a grass-rooted and subsidiary approach to bioeconomy. Creating an "enabling environment" with a close link to rural development policies is paramount.

Biomass needs to be fully valorized as a commodity, with local consumption emphasized. This would lead to structuring the markets by gradually switching to technologically more advanced and efficient solutions.

RISKS

Countries from the region face the risk to become reservoirs of relatively cheap feedstock that will be processed elsewhere, with extremely limited impact on local economies. This impact could be negative once products are reimported…

REMEDIES

Adaptive value chains & subsidiary biomass use

Integrated approach to bioeconomy with focus on local development

Case-sensitive approach

Innovative algorithms to overcome dichotomies

Activities

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T9.3.2: Strategic Case Studies (SCS)

Task

Task 9.2 → *Testing and validation of the toolset with stakeholders*

- ***Testing and validation of toolset (WP4) together with stakeholders through Stakeholder workshops (technical guidelines and questionnaires; end-user/stakeholder contact/involvement by regional partners)***
- ***starting with this workshop to introduce the tools to the partners***
- ***feedback in the first stage with questions:***
  - *what would you change in the toolset*
  - *what additional data would you like to be integrated into the toolset*
  - *where do you see deficits in the data set*
  - *…*

Thank you for your attention!




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