Workshop “Alpine forests seen from a multi-disciplinary perspective”

EUSALP Annual Forum, Innsbruck, 21.11.2018, 11:15-13:00 o’clock

11:15-11:20: Introduction and presentation of workshop procedure

Workshop moderator: Dieter Stöhr, Government of Tyrol, Department Forest Management

11:20-11:45: Setting the scene for the workshop with inputs from Action Groups

Elevator pitch Action Group 2: “Improving the use of local wood: an asset for economy and ecological transition in Alpine region”
Magalie Santamaria, Regional Council Auvergne-Rhône Alpes

Elevator pitch Action Group 6: „The sustainable cascadic use of forest resources”
Christian Hoffmann, Institute for Regional Development, EURAC Research

Elevator pitch Action Group 7: “Timber and more: From forest functions to green infrastructure“
Jörg Ewald, University of Applied Sciences Weihenstephan-Triesdorf

Elevator pitch Action Group 9: “Sustainable construction and wood”
Ulrich Santa, Energy Agency South Tyrol-CasaClima

11:45-12:40: Cross-sectorial discussions tables

Table 1: Determining factors for the sustainable use of wood in the Alpine economy (focus sector: construction)
Moderator: Boris Klečina, Ministry of Economic Affairs, Labour and Housing

Table 2: Multifunctionality of forests in the face of climate change
Moderator: Tina Trampuš, Slovenian Institute for Nature Conservation

Table 3: Green Infrastructure, forests and urban life styles in the Alps: An opportunity for climate change adaptation?
Moderator: Albuin Neuner, Agriculture and Forestry Department, City of Innsbruck

Table 4: Governance “Initiating a macro-regional cross-sectorial cooperation”
Moderators: Michaela Künzl, Bavarian State Ministry of the Environment and Consumer Protection; Maren Meyer, Energy Agency South Tyrol-CasaClima

12:40-13:00: Harvesting session and wrap-up

EUSALP - Action Group No 2 - Economy
Technical subgroup «Alpine Wood »

Improving the use of local wood in the building sector: an asset for economy and ecological transition in the Alpine region

Antoine Patte, Magalie Santamaria, Christina Thum

AG 2 organisation

- AG 2 topics : To improve the economic potential of strategic sector in the Alpine Space
- Coordinated by Baden-Württemberg, and Auvergne-Rhône-Alpes
- 3 Subgroups : bio economy, wood, health tourism
- 1 new SG : digital industry
- Composition of SG wood : about 20 members : 8 institutions, 2 universities, 10 experts / 6 countries involved

SG wood objective

AG2 subgroup is focusing its work on tools and initiatives to raise the awareness about the use of wood in the building sector in order to:

- improve the use of wood, more specificly from alpine forest resources in building sector,
- promote timber industry in the Alpine region,
- support ecological transition by reducing the environnemental impact of construction.

Building with wood is a sustainable choice

- About 9 M hectares of forests which cover from 30 to up to 70 % of alpine land
- Energy to produce 1 ton of wood / cement 5 times bigger - steel 24 times bigger - aluminium 126 times bigger
- Therefore using wood in the building sector makes environmental sense and it appears as a valuable solution to sustain the ecological transition to a greener economy

(*) Alpine convention Mountain forests WG (2013-2014)

Outputs/ work in progress

- An inventory of around 100 competences centres was carried out as well a survey to gather their opinions and relevant experiences on how they promote wood in the building sector
- Capitalization from cooperation : making links between wood projects in alpine region (e.g. Triplewood and Casco projects)
- Support concrete project as Triplewood which aims to develop sustainable wood building culture in Alpine Region
- An Analysis to identify obstacles to the development of the use of wood in building : is going to start as part as Triplewood project

Ongoing discussions…

The wood building sector is as a strategic economic sector in the Alpine region, a source of added value, local employment and sustainable development.

- Regardless its promising role in conciliating climate changes and local development challenges its potential is poorly recognized in the policy realm.

Goal: Promoting a sustainable wood building culture in the EUSALP Region that brings social, ecological, and economical benefits to its communities.

TRIPLE WOOD

SUSTAINABLE WOOD BUILDING CULTURE IN THE ALPINE REGION

Content:

- an exhibition of best practice examples from seven countries
  - seminars on wood construction and energy efficiency
- road show featuring the exhibition, seminars, and public events
- an internet site presenting the exhibition projects, the road show schedule, and providing further information [www.triplewood.eu]

This project is co-financed by the European Union

Partners:

- Ministry of Economic Affairs, Labour and Housing Baden-Württemberg (DE; Lead Partner)
- Energy Agency of South Tyrol CasaClima (IT)
- Ministry of Agriculture, Forestry and Food supported by the Wood Industry Cluster (SI)
- ProHolzBW GmbH (DE)
- Union of Forest Communities in Auvergne-Rhône-Alpes (FR)
- Wood Industry Cluster Lignum (CH)

TRIPLE WOOD

SUSTAINABLE WOOD BUILDING CULTURE IN THE ALPINE REGION

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Action Group 6

Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety

Interreg Alpine Space

AlpGov

EUROPEAN REGIONAL DEVELOPMENT FUND

Cascaded Timber Use from Sustainably Managed Alpine Forests

Christian Hoffmann,
Institute for Regional Development, Eurac Research

Joint Workshop

In the frame of the Annual Forum 2018,
21 November 2018, Innsbruck

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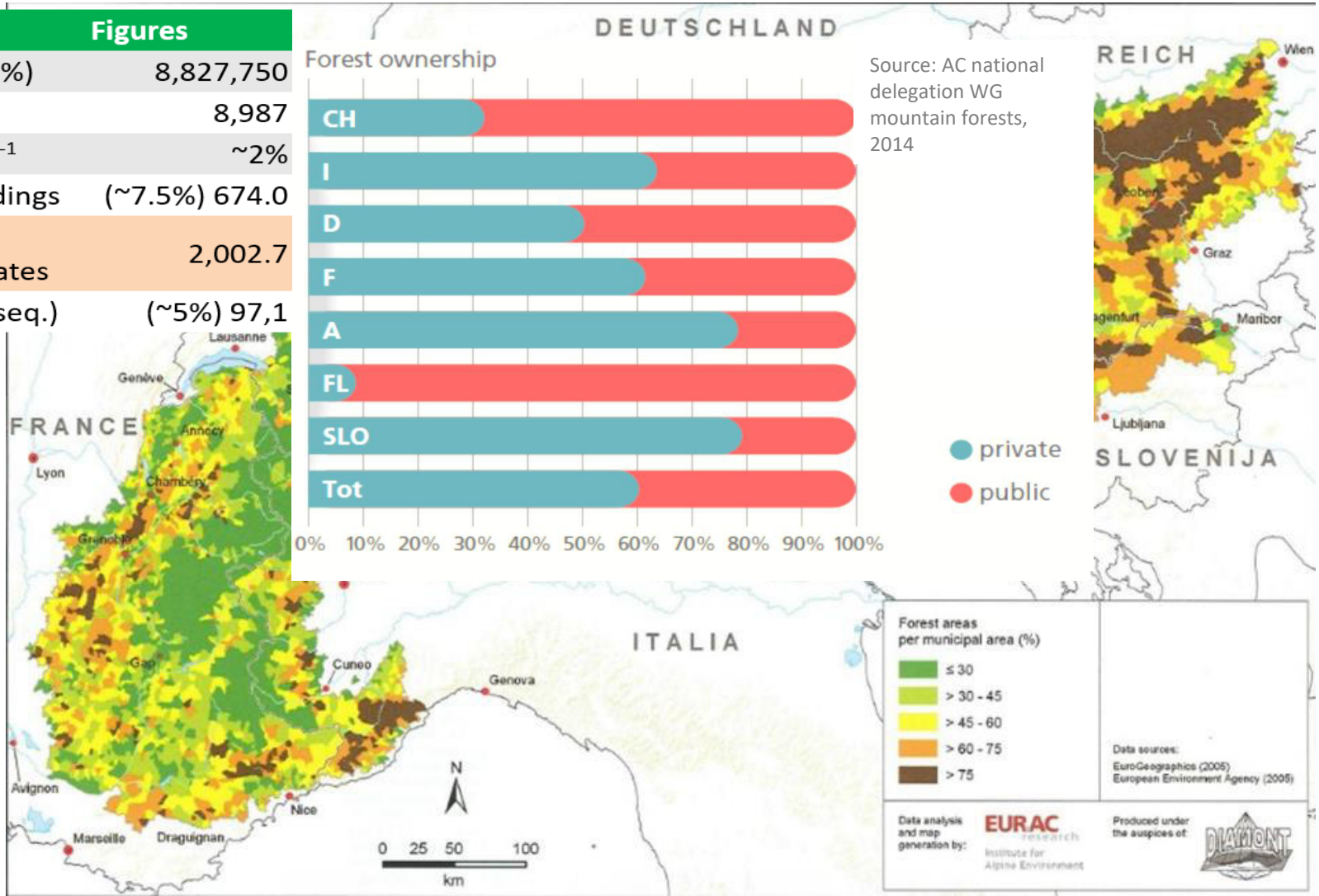
EUROPEAN REGIONAL DEVELOPMENT FUND

Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety

AC Forest	Figures
Area ha (~46,4%)	8,827,750
CO_2 Mio.t	8,987
CO_2 biomass Y^{-1}	~2%
CO_2 Mio.t buildings	(~7.5%) 674.0
CO_2 Emissions Mio.t Y^{-1} AC-states	2,002.7
CO_2 Mio.t Y^{-1} (seq.)	(~5%) 97,1

Source: Klein D. & Schulz C., 2011



Cascaded Timber Use

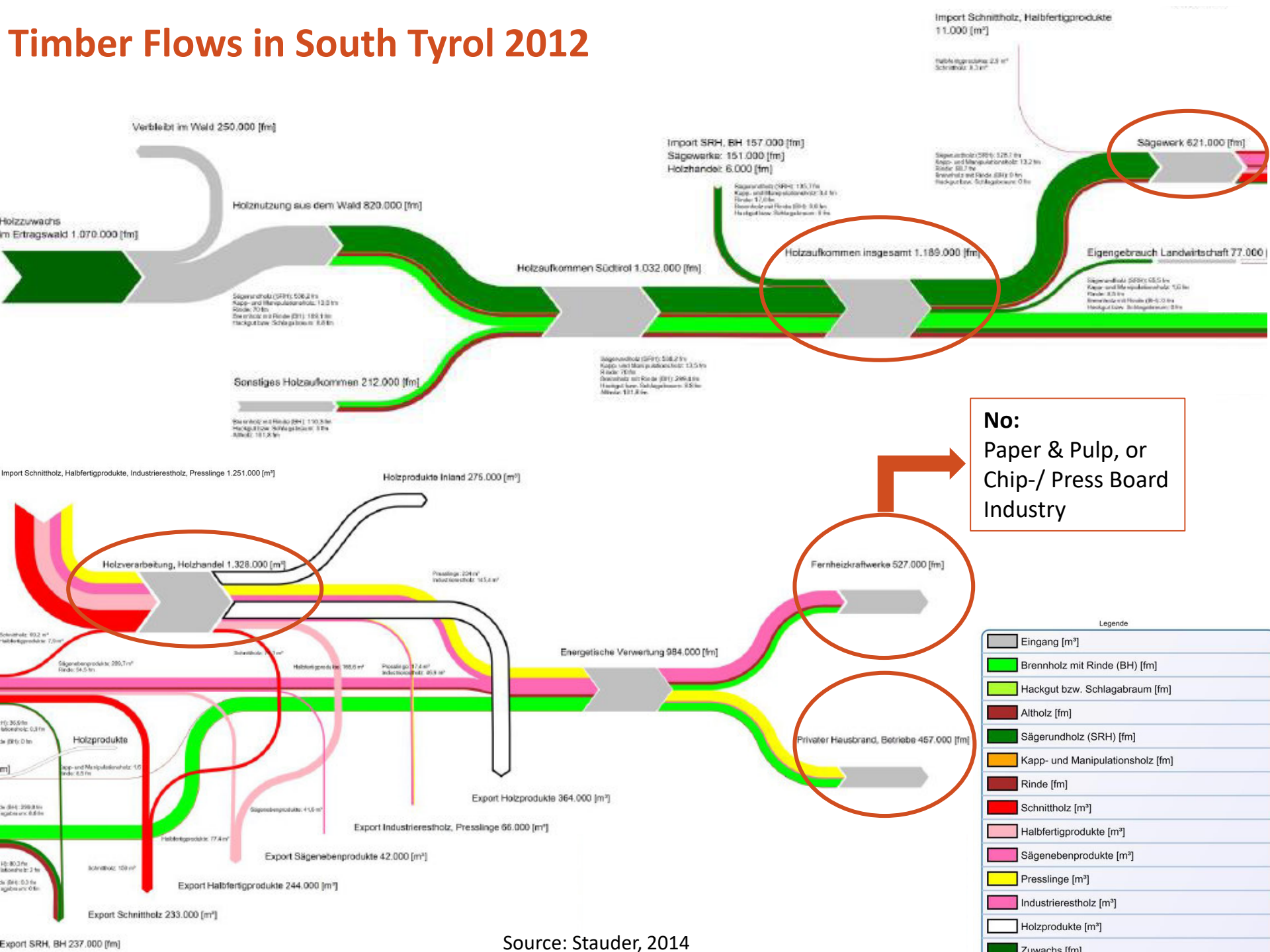
+ 7,5% of CO_2 sequestration y^{-1}

- Material versus energetic use
- Higher versus lower timber quality
- Long-term versus short-term use

The applicability of this concept is strongly related to the silvicultural principles applied!

Source: Corriere Del Veneto

Timber Flows in South Tyrol 2012



No:
Paper & Pulp, or
Chip-/ Press Board
Industry

Source: Stauder, 2014

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EUROPEAN REGIONAL DEVELOPMENT FUND

VA from South Tyrolean Timber in € - from 1 solid m³ over bark (SOB)

Value Chain Actors	Degree of Refinement	VA raw material Farmer: €/m³ SOB	Increase of the REGIONAL VA	Regional VA €/m³ SOB
Farmer & (Int. Sup.) DHP	District Heating Plant	36	x 3.3	118
Farmer – Saw-mill & (Int. Sup.) Wood Panel	Wood Panel	63	x 2.2	140
Farmer – Saw-mill & (Int. Sup.) Carpenter/Timber-House	Timber-House	66	x 4.7	309
Farmer – Saw-mill & (Int. Sup.) Joiner	Bedroom-Suite	82	x 14.0	1.154

Discussion

- Logistical Solutions & Forestry 4.0
- Forest & Timber Competence Centres
- Trans-boundary & Cross-Cutting Governance

Managing the Un-Expected

Valorising Cross-Cutting Potentials

Timber and More: From Forest Functions to Green Infrastructure

Jörg Ewald[1,2]

[1]EUSALP Action Group 7 Green Infrastructure

[2] Institute for Eclogy and Landscape/Faculty of Forestry

Weihenstephan-Triesdorf University of Applied Sciences, Freising

EUSALP Annual Forum – Innsbruck 2018

Alpine Forests = Green infrastructure

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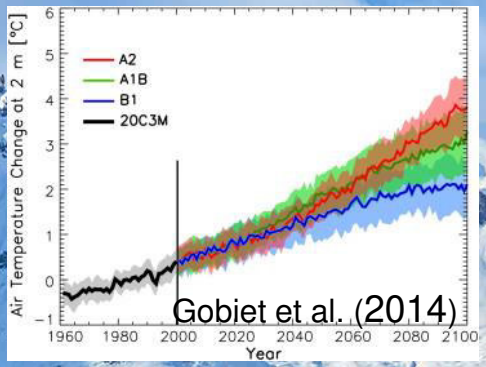


Gobiet et al. (2014)

Potential

relief

climate

soil

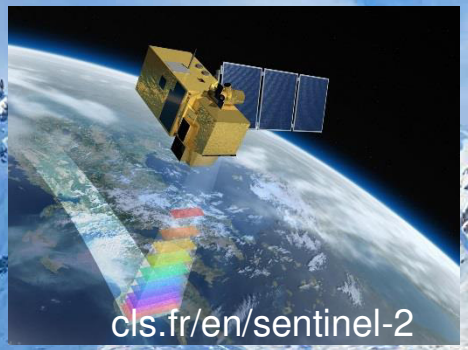
vegetation

forest types

growth

hotelinsbruck.com

Alpine Forests = Green infrastructure



compostion

storm

Potential

--

beetle

biomass

State

fire

avalanche

vitality

cutting

dieback

hotelinsbruck.com

Alpine Forests = Green infrastructure

wildlife

wilderness

Potential

grazing

hazard protection

State

C storage

Functions

timber & fuel

recreation

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Alpine Forests = Green infrastructure

farmers

conservationists

Potential

hikers

bikers

foresters

State

owners

business

hunters

Functions

students

municipalities

planners

Stakeholders

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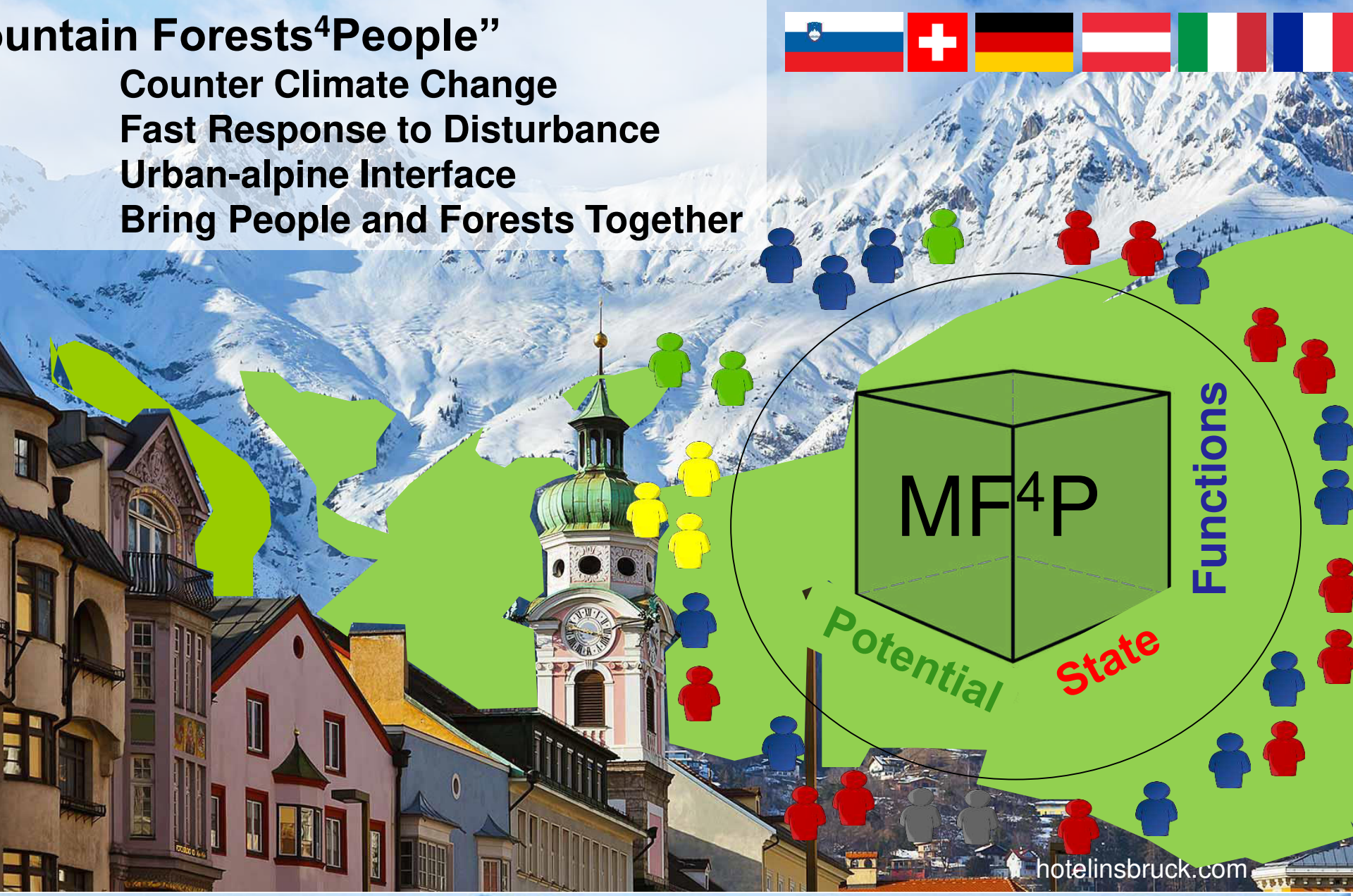
ountain Forests[4]People”

- Counter Climate Change
- Fast Response to Disturbance
- Urban-alpine Interface
- Bring People and Forests Together



Cross-Sectoral Workshop
"Alpine forests seen from a multi-disciplinary perspective"

Elevator pitch EUSALP Action Group 9
«Energy Efficiency and Renewable Energy»

2nd EUSALP Annual Forum, 21 November 2018, Innsbruck

Ulrich Santa
General Director, Energy Agency South Tyrol-CasaClima
Leader EUSALP Action Group 9

KlimaHaus CasaClima®

80 million people, 7 countries, 48 regions, mountains and plains addressing together common challenges and opportunities

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Forests/timber and the energy sector in South Tyrol

Construction: timber as CO2 storage

- ✓ increase in the medium and long-term CO2 storage through increased use of wood as construction and product material (Wood product storage) +
- ✓ Optimization of the stored amount of CO2 in the local

forest resources with active sustainable management and soil conservation

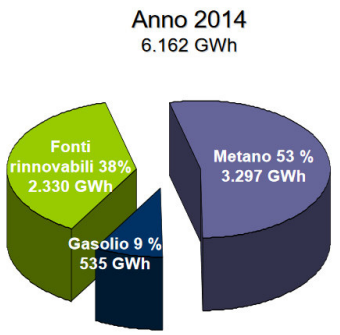
Measures package

- Strategic integration of the issue “Forest-Timber-CO2 Storage” into the Regional Energy Plan “Klimaland”
- Role model: public construction projects to be realized as timber constructions
- Creation of an incentive system for private builders (new construction and renovation projects) to construct with timber

50%
of South Tyrol’s surface are forests

Construction: timber as an energy supplier

- District heating supply 2014: 719,308,447 kWh or approx. 144,000t of timber
- Energy consumption 2014 (heating sector)



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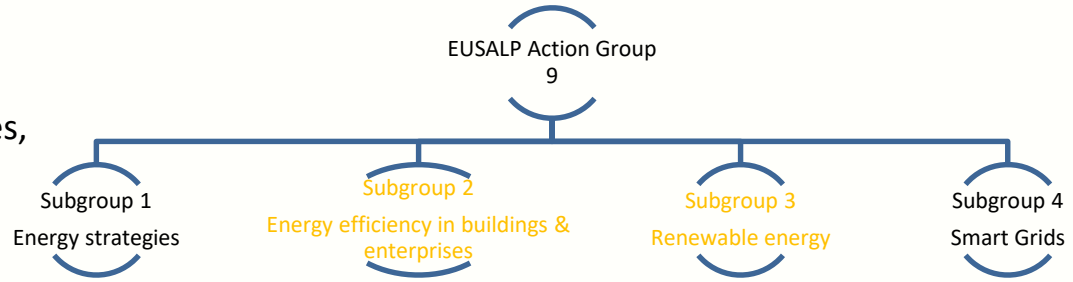
EUSALP Action Group 9

- 17 members from Alpine Regions and States, Academia and research



Projects of EUSALP AG9 connected to the Alpine forest/timber, EUSALP Action Plan, COM(2015) 366final, p. 43

- 'Greening the Alpine infrastructure': focusing on energy efficiency in the **building sector** and promote (…) assessment tools to be used by **public authorities** in order to **boost sustainable** and **low-carbon buildings** in the Alpine Region.
- Promotion of projects that support a **better use of local resources** to increase **energy self-sufficiency** and **reduce climate and environmental impacts**
  - A) Setting-up bio-energy supply chains based on sustainable woody biomass
  - B) Develop an integrated territorial approach to waste management

EUSALP Action Group 9: Actions 2017-2018

2017 Study "Life cycle analysis of residential buildings"

Subgroup 2
Energy efficiency in buildings & enterprises

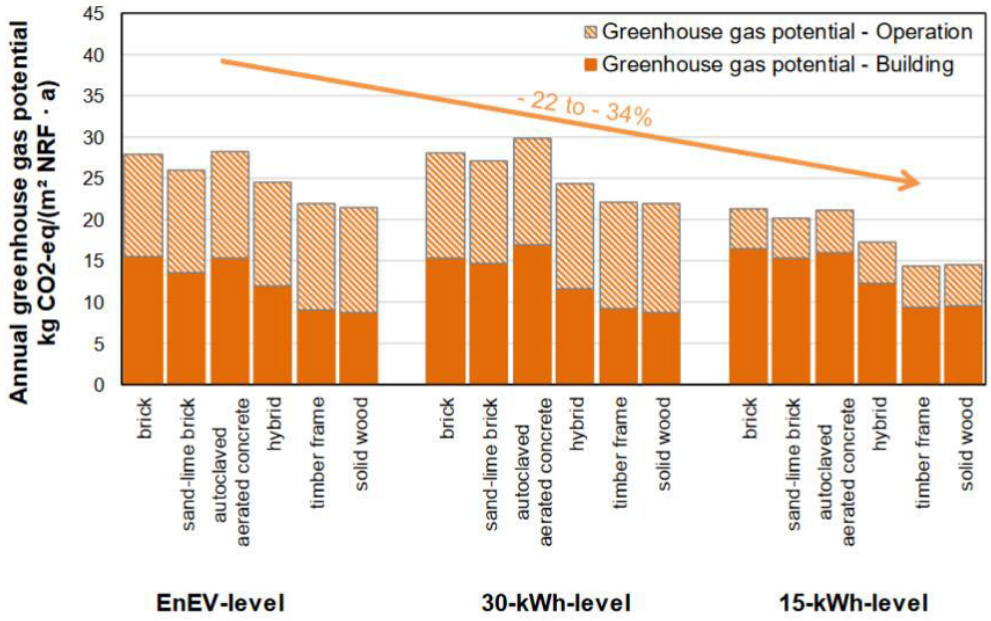


Image 5: Greenhouse gas potentials of the different construction methods and energy levels using gas-fired condensing heating with solar thermal energy as an example

Source: Bayerisches Landesamt für Umwelt, 2017, Life cycle analysis of residential buildings, commissioned under Bavarian EUSALP Presidency, at https://www.alpine-region.eu/sites/default/files/uploads/activity/452/attachments/abstract_life_cycle_analysis_en_tu.pdf

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EUSALP Action Group 9: Actions 2017-2018

Subgroup 2
Energy efficiency in buildings & enterprises

2017 Study "Life cycle analysis of residential buildings"

Advantages of wood construction methods

- ✓ energy savings for the production and construction of the building (grey energy)
- ✓ lower emissions in terms of GHG emissions, acidification, eutrophication and causing of photochemical smog

Advantages of heavy solid structures

- ✓ Achievement of high heat buffering effects,
- ✓ they can thus reduce the heat energy requirement by around 10% and thus significantly reduce overheating of the building in the summer.
- ✓ high level of sound insulation and good fire resistance

Advantages of hybrid construction methods

- ✓ each of the construction methods has both strengths and weaknesses, so that neither solid nor lightweight constructions can be exclusively favoured.
- ✓ The results show a promising potential of the hybrid construction method which combines many advantages of both variants. For example, during the production process, the energy consumption and thus the impact on the environment and also the heat energy requirement during operation can be reduced.

Source: Bayerisches Landesamt für Umwelt, 2017, Life cycle analysis of residential buildings, commissioned under Bavarian EUSALP Presidency, at https://www.alpine-region.eu/sites/default/files/uploads/activity/452/attachments/abstract_life_cycle_analysis_en_tu.pdf

EUSALP Action Group 9: Actions 2017-2018

Subgroup 2
Energy efficiency in buildings & enterprises

2017 Experts' workshop: Key Performance Indicators for Greening the Alpine Infrastructure EUSALP

Mandatory KPIs:

- Primary energy demand
- Delivered energy demand
- Renewable energy in primary energy consumptions
- Renewable energy in final thermal energy consumptions
- Renewable energy in final electric energy consumptions
- Global Warming Potential
- Quality of air - Ventilation
- Quality of air – CO_2 concentration
- TVOC from construction materials
- Formaldehyde from construction materials

Recommended KPIs:

- Embodied non-renewable primary energy (product stage)
- Materials from renewable sources
- Recycled materials
- Construction and demolition waste
- Water consumption
- Net potable water consumption
- Thermal Comfort
- Life cycle cost in the operational stage

Source: Moro, A., Vienot, E., Berchtold-Domig, M.: EUSALP Performance Indicators for buildings, EUSALP Action Group 9, 2018.

EUSALP Action Group 9: Actions 2017-2018

Subgroup 3
Renewable energy

2017/2018: First EUSALP Energy Survey

Thermal energy needs in the EUSALP

- Thermal energy needs account for about 43% of the overall final energy consumption in the EUSALP area.

Heat production	From RES	From fossil fuels	From direct electricity	Heath production			
				Solar thermal energy	Geothermal energy and ambient heat	Biofuels and biomass	Waste
987 TWh	203 TWh	777 TWh	7 TWh	7 TWh	12 TWh	154 TWh	17 TWh
	21%	79 %	1%	4%	6%	81%	9%

Wood burning
Negative impacts on air quality due to PM10, NO2 and B(a)P

Source: Adriano Bisello, Silvia Tomasi, Giulia Garegnani, Chiara Scaramuzzino, Amy Segata, Daniele Vettorato, Wolfram Sparber, 2018, EUSALP Energy Survey Report, at https://www.alpine-region.eu/sites/default/files/uploads/activity/449/attachments/eusalp_energy_survey_report_final_reviewed.pdf.

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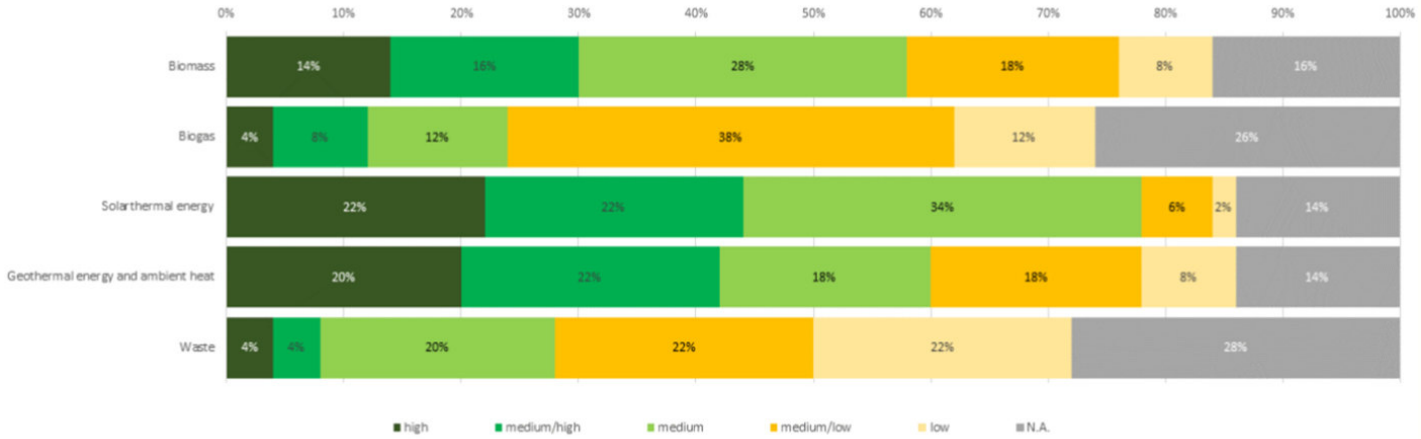
EUSALP Action Group 9: Actions 2017-2018

Subgroup 3
Renewable energy

2017/2018: First EUSALP Energy Survey

Estimation of regional experts concerning remaining potential of biomass for heat production:

14%: high potential
16%: medium high potential
28%: medium potential
18%: medium/low potential
8%: low potential



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Thank you for the attention!

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