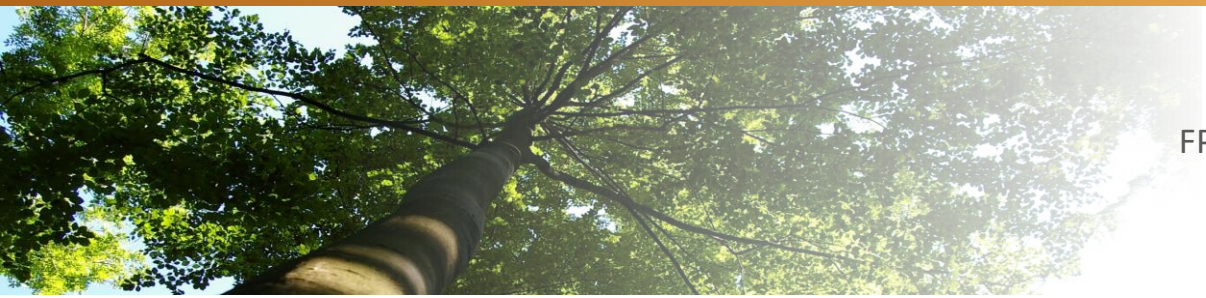
Project development in the fields forest sector and forest clusters

Orest Kiyko, Doctor of science, Professor

Ukrainian National Forestry University (UNFU)

Head of the Department of Furniture Production Techniques and Wood Product Technology

Ukrainian National Forestry University



European Commission
FP7 no. 609573, 2014-2016
www.reram.eu

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research to innovation in resource efficiency

Resource Efficiency and Sustainable Manufacturing in the Forest-based Sector of Eastern Europe (ENP-EaP Countries)




The RERAM Project: Main outcomes

Dr. Uwe Kies (coordinator)
Wald-Zentrum / IIWH, Germany

Wald-Zentrum

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Project Factsheet

Programme co-funded by the EUROPEAN UNION

Framework

- FP7-INCO CSA no. 609573, 1st June 2014 – 31st May 2015 (2 years)
- Total budget 1.3 million €, EC contribution 990,250 €

Consortium

- 11 partners in total, 9 countries
- EU countries: Germany, Austria, Poland, Belgium
- ENP Eastern countries: Ukraine, Moldova, Georgia, Azerbaijan, Armenia
- 4 research institutions, 3 SMEs/clusters, 2 NGOs, 1 European RTD network

→ *Main purpose: stronger twinning of compatible R2I regions and actors*

Coordinator

- IIWH – International Institute of Forestry and Wood-based Industries NRW e.V., Prof. Dr. Andreas Schulte, University of Münster, Germany

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Regions and partners

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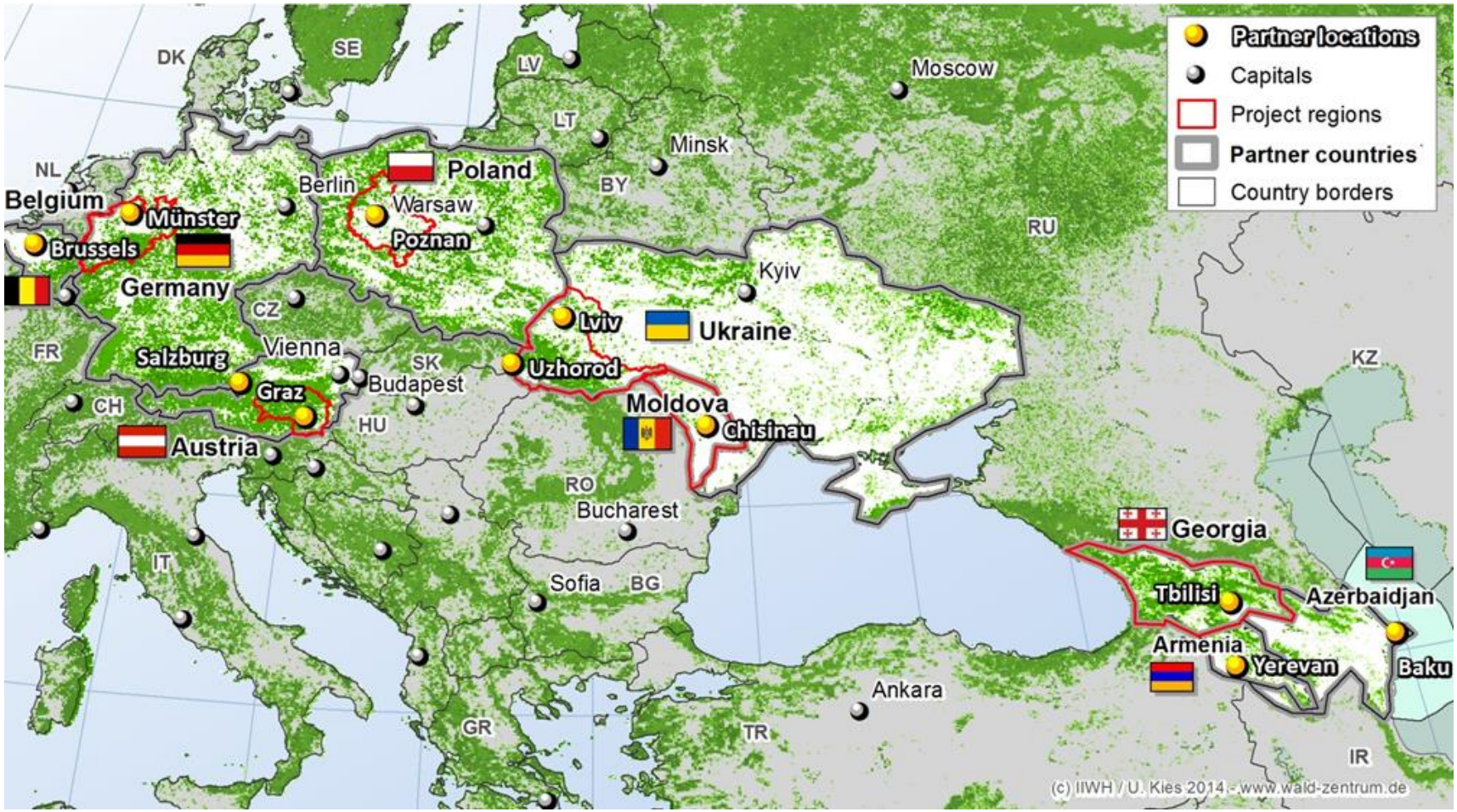

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European Neighborhood Policy (ENP)

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The Eastern Partnership (EaP) is a joint initiative of the EU and its Eastern European partners: **Armenia, Azerbaijan, Belarus, Georgia, the Republic of Moldova and Ukraine**.

Launched in 2009 at the EU Prague Summit, it brings Eastern European partners closer to the EU.

The Eastern Partnership supports and encourages reforms in the EaP countries for the benefit of their citizens.

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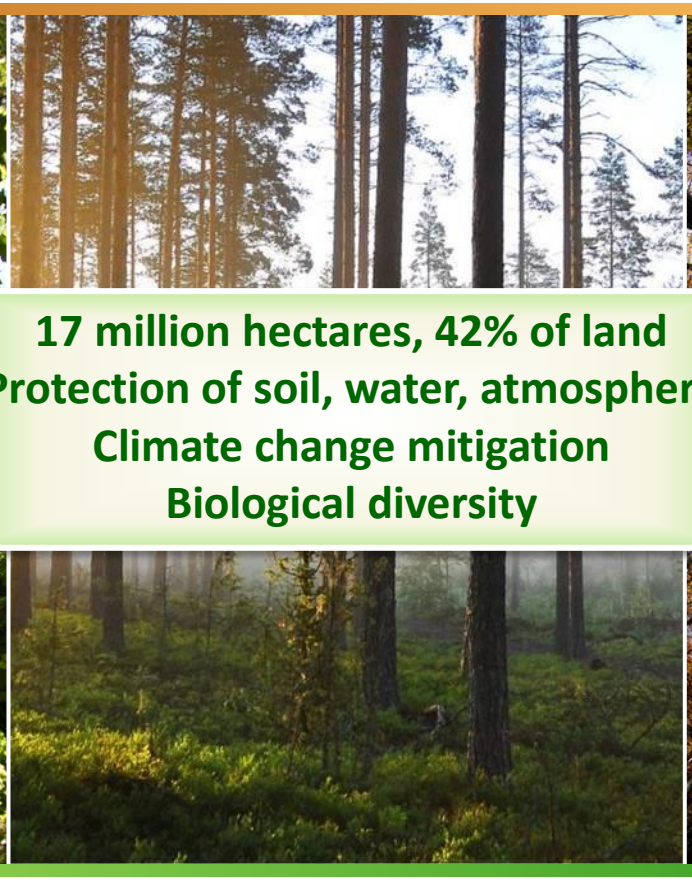
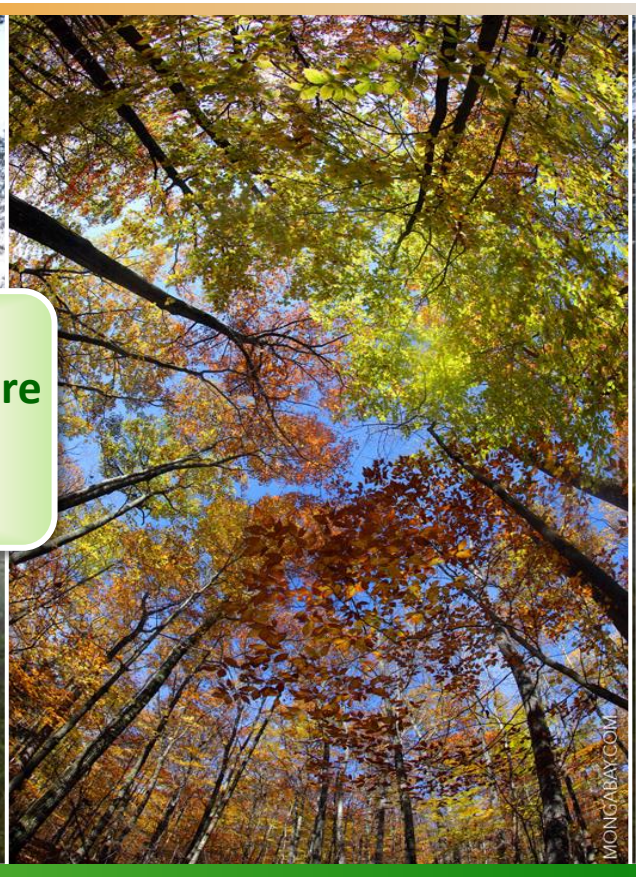
Forests of Europe

An abundant natural resource





17 million hectares, 42% of land
Protection of soil, water, atmosphere
Climate change mitigation
Biological diversity

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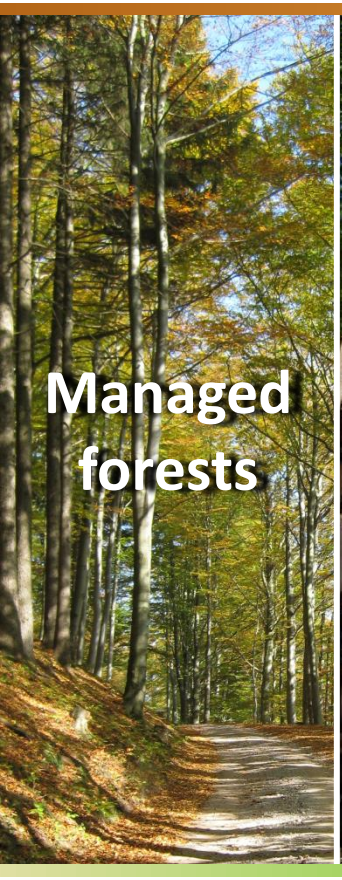
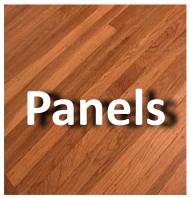
EU forest-based sector

A multitude of sustainable products





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EU forest-based sector

An unknown 'giant' in regional employment



600,000 enterprises
4-5 million employees
550 billion € turnover
10-15% of total manufacturing sector




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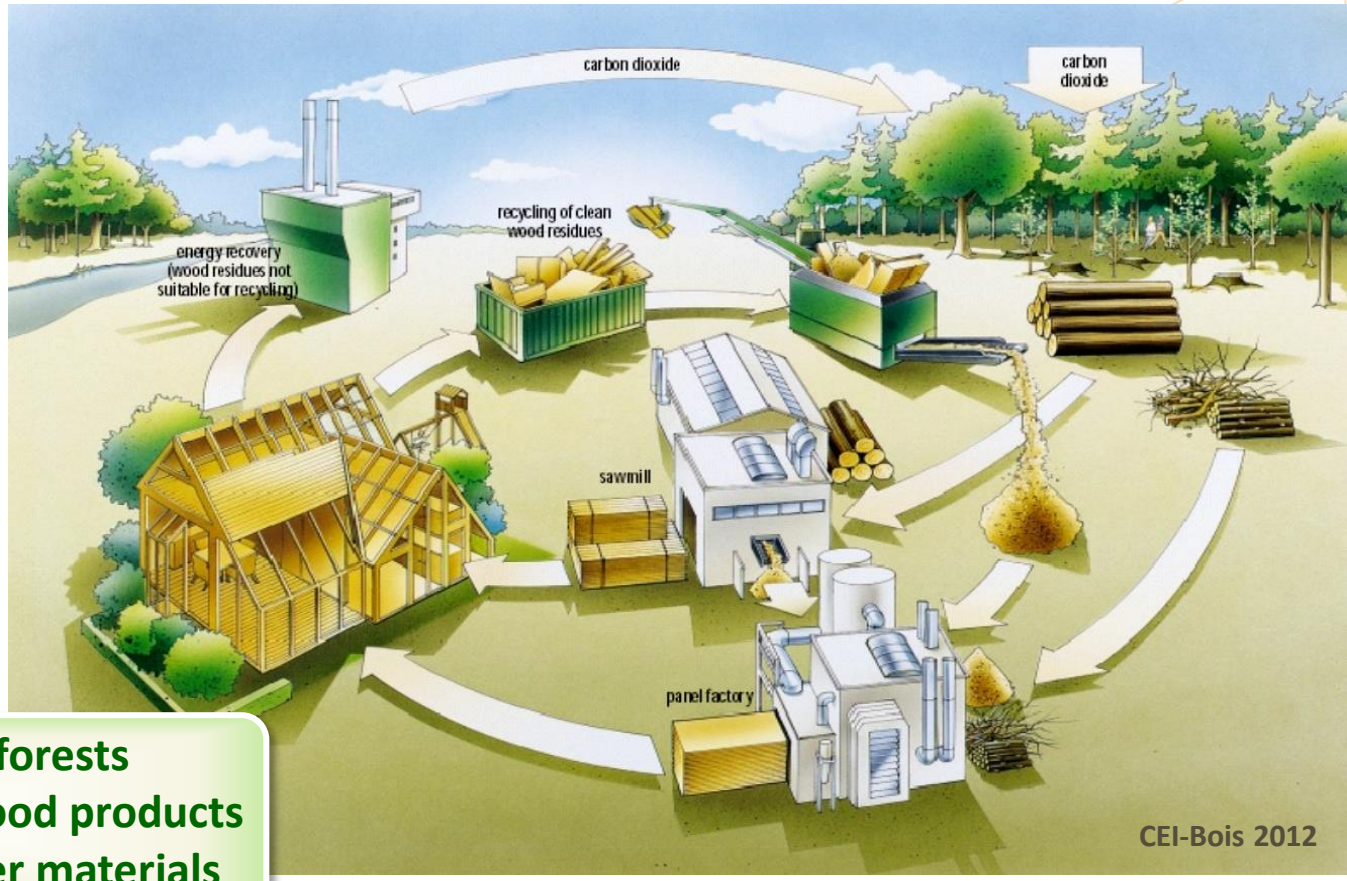
EU forest-based sector

Using wood efficiently is active climate protection !



Carbon sink in forests
Carbon storage in wood products
Substitution of other materials

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Project Objective

Main goal

→ Improve RESOURCE EFFICIENCY and RAW MATERIAL consumption of the *Forest and Woodworking Sector* in ENP Eastern countries by bridging the gaps between research and innovation among SMEs, science and authorities


Forest clear-cutting


Wood wastes


Outdated equipment

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RERAM's IDEA

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ENP countries and economical problems → Importance of the forest sectors development in the ENP countries → Two options of the forest sector development: intensive or extensive development

→ EU countries have some experience and some knowledge in regard to the intensive development of their forest sectors → 2020 strategy and importance of the response on the main challenges →

RERAM responds to the societal challenge of "CLIMATE CHANGE, RESOURCE EFFICIENCY AND RAW MATERIALS"

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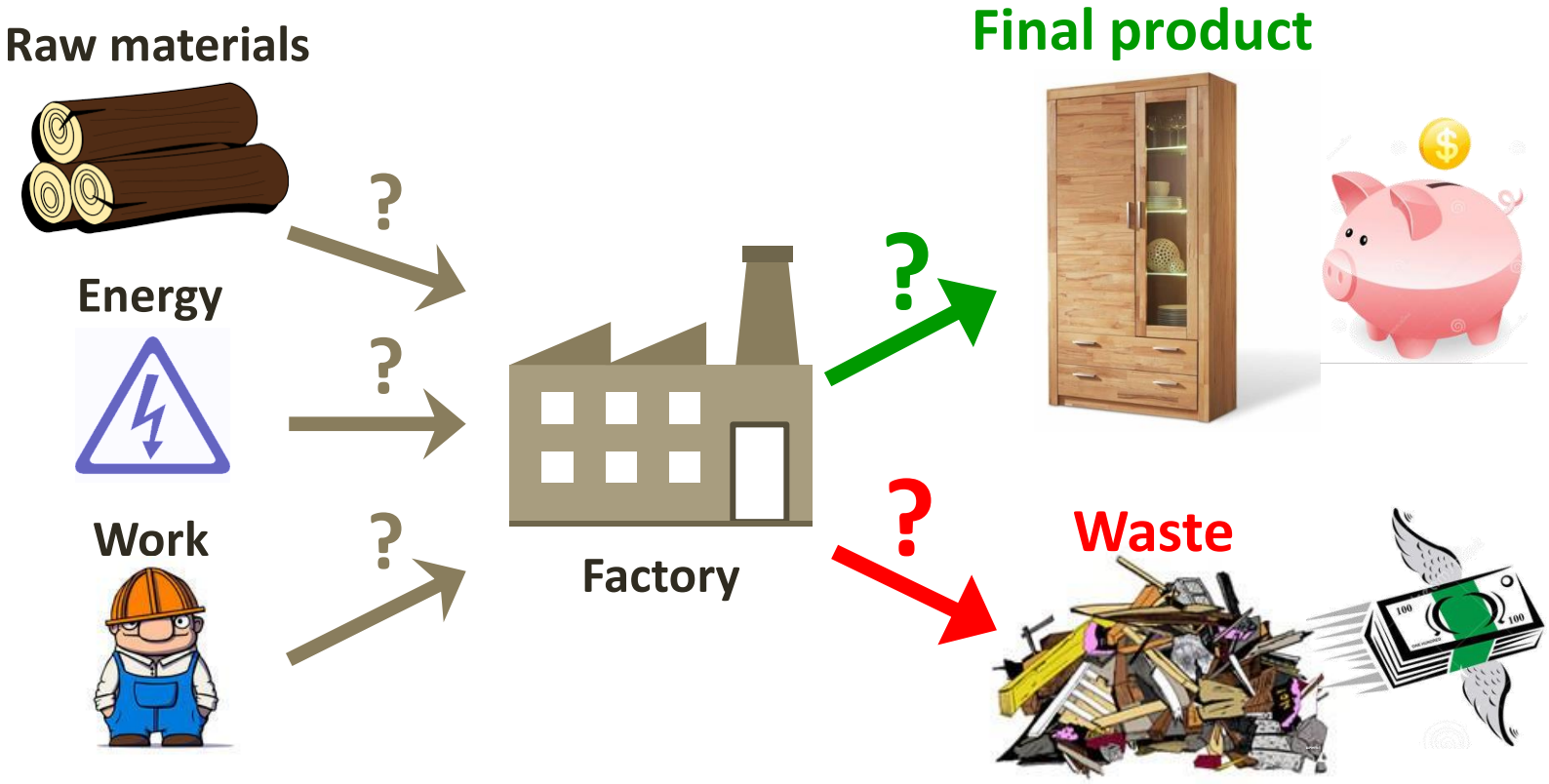
Resource efficiency

Why should the wood industry invest in it?



Resource efficiency

Why should the wood industry invest in it?

The "Cost of Waste" Iceberg

Bierma et al. 1998

"Wastes and emissions are input materials, which have been bought for money and have not been converted into products to be sold for money."

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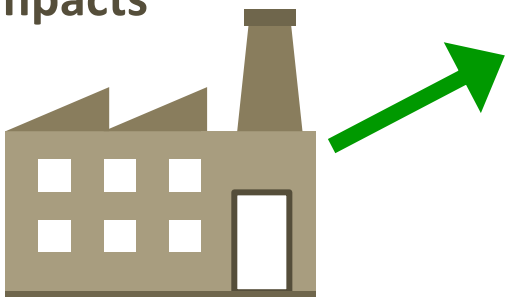
Resource efficiency

Why should the wood industry invest in it?

Managing efficiency in companies:

By saving resources & energy
= saves hidden input costs
+ reduces environmental impacts



Final product

Waste

Additional benefits

- ✓ Higher quality of products
- ✓ Stronger marketing position
- ✓ Better working conditions and higher motivation of personnel

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Project Objectives

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Main goal

→ **Improve resource efficiency and raw material consumption of the *forest and woodworking sector* in ENP eastern countries by bridging the gaps between research and innovation among SMEs, science and authorities**

General Objectives (GOs)

1. ***Raise awareness on resource efficiency potentials of value chain***
   forestry → primary wood processing → secondary wood manufacturing
2. ***Optimize raw wood conversion pathways in SMEs***
   by introducing innovative technologies, processes and planning methods
3. ***Promote competitive innovation clusters***
   through new business models, cleaner production and collaborative processes
4. ***Enhance international collaboration in knowledge value chains***
   by joint action, knowledge transfer and outreach among R2I actors

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RERAM's IDEA

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It is very difficult to drink water from a sieve.
We should at least try to close those holes or maybe to decrease their number.

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RERAM's IDEA

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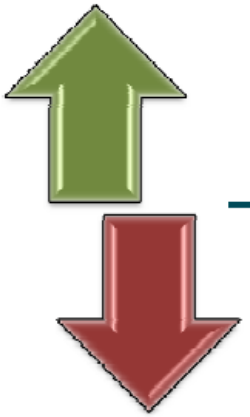
RESOURCE EFFICIENCY

DEFINITION

RESOURCE = Raw Material, Processing Energy, Operating funds..etc.

EFFICIENCY =  Returns / Efforts

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The RERAM approach:

Practical training and coaching of SMEs

1. Training programme for efficiency managers
2. Enterprise Reality Checks
3. Handbook & Toolkit
4. Dissemination

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The RERAM approach:

Practical training and coaching of SMEs

1. Training programme for efficiency managers

- Introductory course to:
  Cleaner Production, Material Flow Analyses, Waste Management, Green Procurement, Environmental Controling, etc.
- All material in English + Russian

→ **15 wood industry experts have successfully accomplished the course!**

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The RERAM approach:

Practical training and coaching of SMEs

2. Enterprise Reality Checks

- 1-day company visits for quick assessment
- Report: List of saving potentials and proposed no/low investment solutions
- Follow-up coaching during implementation

→ **The team performed successful checks of 19 companies!**

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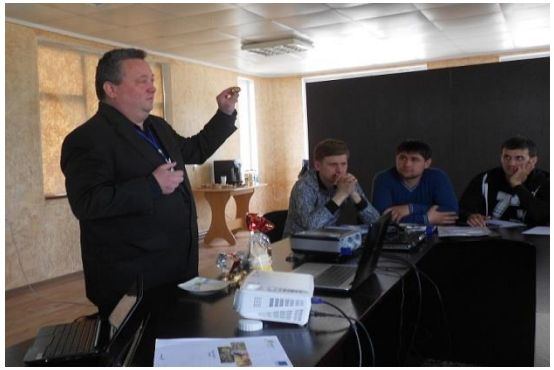
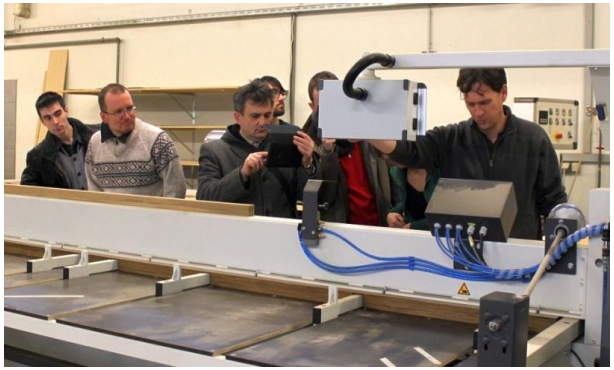
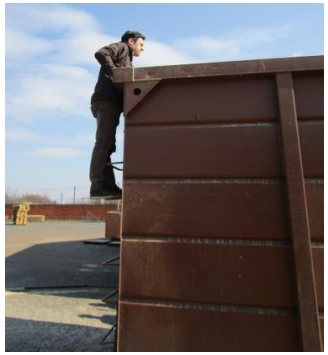
The RERAM approach:

Enterprise Reality Checks - Impressions









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The RERAM approach:

Enterprise Reality Checks - Participants

19 woodworking companies participated: UA 4, MD 4, GE 5, AT 6

МЕБЛІ СТИЛЬ

К`Лен

АТЛАНТ

GOLIAT-VITA

NUMINA

GELIKA furniture factory

SHNO LTD

ORBELI

Tunda

Furniture Design GOLDEN HANDS

CRP WOOD

Tischler Engelbert Tscheschner

Jannach Lärchenholz

SCHEUCHER

LIECO

PRÖDL

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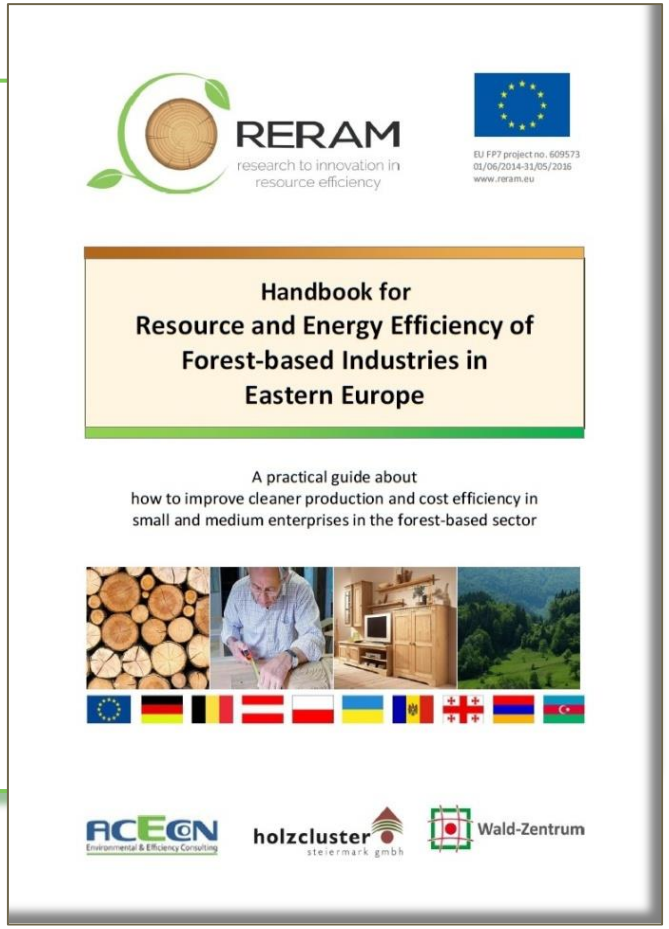
The RERAM approach:

Practical training and coaching of SMEs

3. Handbook & Toolkit

- Guide for managers and technical personnel
- Practical knowhow to improve production efficiency through cost savings and reduce environmental impact
- Collection of useful assessment tools

→ **Published**



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The RERAM approach:

Practical training and coaching of SMEs

4. Dissemination

- Training workshops for SMEs
- Dialogues with decision-makers
- Joint events with other EU initiatives
- Conferences
- Publications (press, scientific)

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The RERAM approach:

Workshops, Conferences, Joint Events - Impressions

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Resource Efficiency in SMEs:
Main conclusions and Outlook

1. **The forest-based sector is an important pillar of the future sustainable bioeconomy**

→ Wood = a uniquely versatile raw material: at the same time renewable, reusable, recycable and refinable

→ Sector = a multitude of sustainable products and a main contributor to regional employment and value-added

2. **Using wood efficiently is active climate protection**

→ Carbon sink in forests (CO_2 absorption by trees)

→ Carbon storage in wood products (for hundreds of years)

→ Substitution of carbon-intensive materials (innovative products)

→ Cascade use principle (solid products before energy use)

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Resource Efficiency in SMEs:
Main conclusions and Outlook

3. Wood and wood products are globalised commodities

→ Growing global demand leads to decisive regional changes.

→ Shift of production/pre-fabrication to Eastern Europe on-going.

→ More domestic value-adding, international supply chains and new markets are real chances for ENP countries.

4. Resource efficiency offers new opportunities for SMEs

→ Saving raw materials and energy helps companies to improve competitiveness and reduce environmental impacts (win-win).

→ Reality checks identify easy saving options (‘low hanging fruits’), which can be used to start improving Cleaner Production.

→ Investing in efficiency enhances also quality and market position.

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Approach of the resource efficiency increasing which foresees sequence carrying out of the following seven steps:

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I. **Self-assessment** of wood-working enterprises on saving potentials for wood raw material use and energy consumption through the questionnaire.
II. **Analysis of the current state** and future outlook on the regional forest-wood sector's resource potential (global sectorial analysis of the forestry-woodworking-chain in the ENP eastern regions).
III. **"Training the trainers"** program (10 days) for intermediaries on raw material efficiency management.
IV. **Reality check** and benchmarking of raw material flows and performance.
V. **Study trip** to the premises of existing cluster organizations in the consortium countries.
VI. **Regional Research to Innovation Dialogues** on Resource Efficiency.
VII. **Developing of the Portfolio** of services and toolkits for resource efficiency management.

Work package list

Work package No	Work package title	Type of activity[7]	Lead particip. No	Lead participant short name	Person-months	Start month	End month
WP1	Project Management	MGT	1	IIWH	19.0	M01	M24
WP2	Regional Baselines in Resource and Raw Material Efficiency	OTHER	4	UNFU	31.0	M01	M17
WP3	Entrepreneurs' Awareness of Raw Material Performance	OTHER	3	STENUM	41.5	M01	M20
WP4	Cluster Support and Efficiency Management	OTHER	2	HCS	35.0	M01	M21
WP5	Regional Research 2 Innovation Strategies and Actions	OTHER	1	IIWH	33.0	M13	M24
WP6	Dissemination	OTHER	8	RECC	51.5	M01	M24
				TOTAL	211.0		

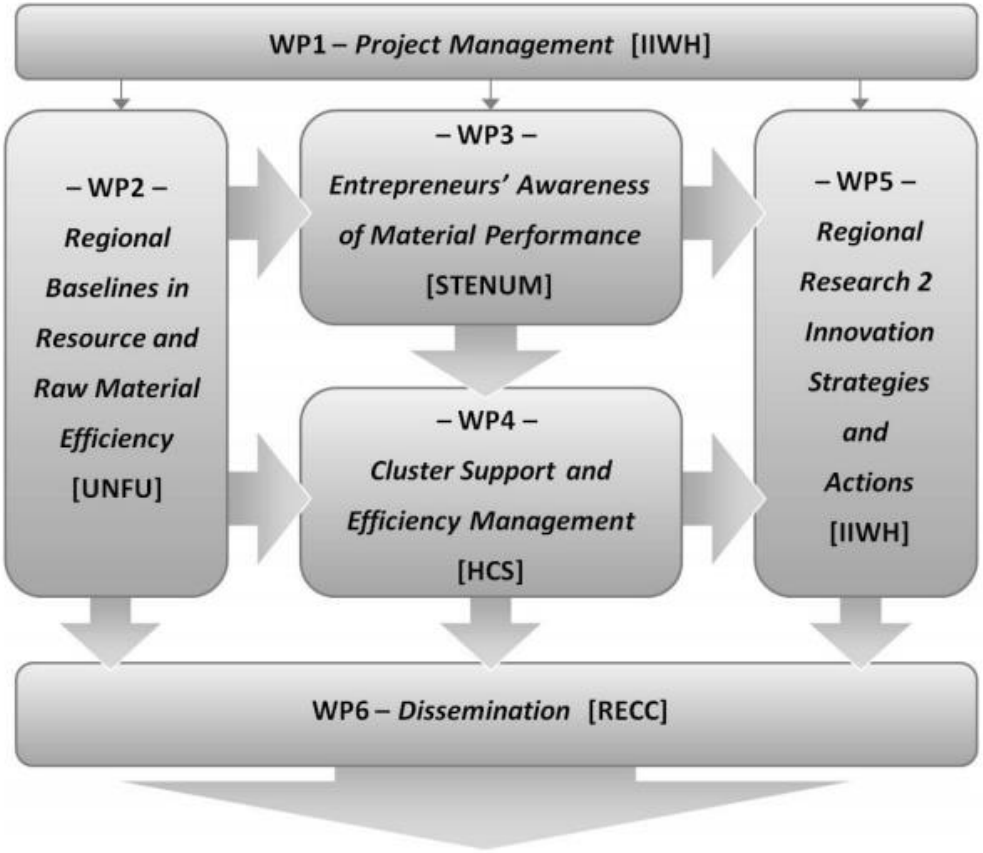
Table 1.2 b: Deliverables list

Del. no.	Deliverable name	WP no.	Nature[8]	Dissemination level[9]	Delivery date
D1.1	Project Roadmap (incl. kick-off report, communication plan, conflict-risk management plan)	1	R	RE	M02
D6.1	Website	6	O	PU	M03
D6.2	Dissemination Strategy	6	R	RE	M04
D2.1	Transnational trainings of experts - Summary report	2	R	PU	M06
D3.1	Techniques and technologies for raw material efficiency - Handbook chapter	3	R	RE	M09
D2.2	Self-assessment of woodworking enterprises' saving potentials - Survey report	2	R	RE	M10
D4.1	Capacity building activities - documentation incl. testimonials and summary report	4	R	PU	M12
D3.2	Reality check and benchmarking of raw material performance - Evaluation report	3	R	RE	M16
D2.3	Resource efficiency of the forestry and woodworking sector in ENP' countries - WP2 final report	2	R	PU	M17
D4.2	Regional Research 2 Innovation Dialogues for Resource Efficiency - Summary report	4	R	PU	M18
D1.2	Interim Project Report 1 incl. Cost Statement	1	R	CO	M19
D3.3	Environmental management trainings and advisory sessions - WP3 final report	3	R	PU	M20
D4.3	Wood innovation management and resource efficiency - WP4 final toolkit and handbook chapter	4	R	RE	M21
D6.3	Handbook 'Resource efficiency in woodworking SMEs'	6	O	PU	M21
D5.1	Future R&D Collaboration and Pilot Projects -Summary report	5	R	RE	M22
D5.2	Regional Research 2 Innovation Strategies and Exploitation Plan for a Resource Efficient Forest Sector in ENP eastern countries - WP5 final report	5	R	PU	M24
D6.4	Final Event/Conference Proceedings	6	O	PU	M24
D1.3	Final Project Report incl. Cost Statement	1	R	CO	M24

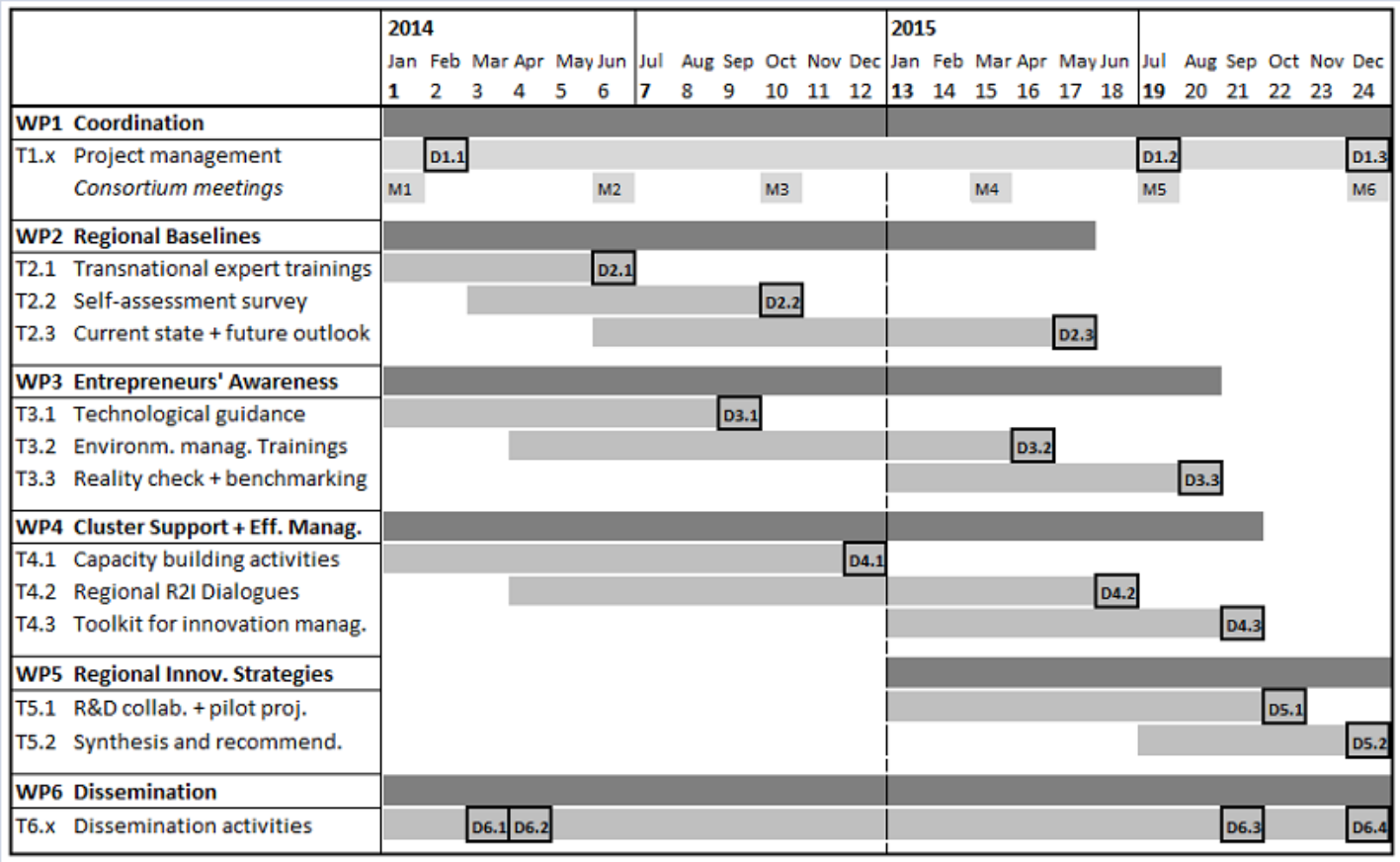
Table 1.2 c: List of milestones

Milestone number	Milestone name	Work package(s) involved	Expected date	Means of verification
1	Kick-off	1	M01	D1.1
2	Capacity building activities	4	M12	D4.1
3	Project midterm review	1	M12	D1.2
4	Baseline analyses completed	2	M15	D2.3
5	Enterprise benchmarking and trainings accomplished	3	M19	D3.3
6	Toolkit finalized	4	M19	D4.3
7	Regional R2I Strategies and Actions	5	M22	D5.2
8	Final conference	6	M24	D6.3

Pert chart of the RERAM project



Gantt chart of the RERAM project



Resource Efficiency

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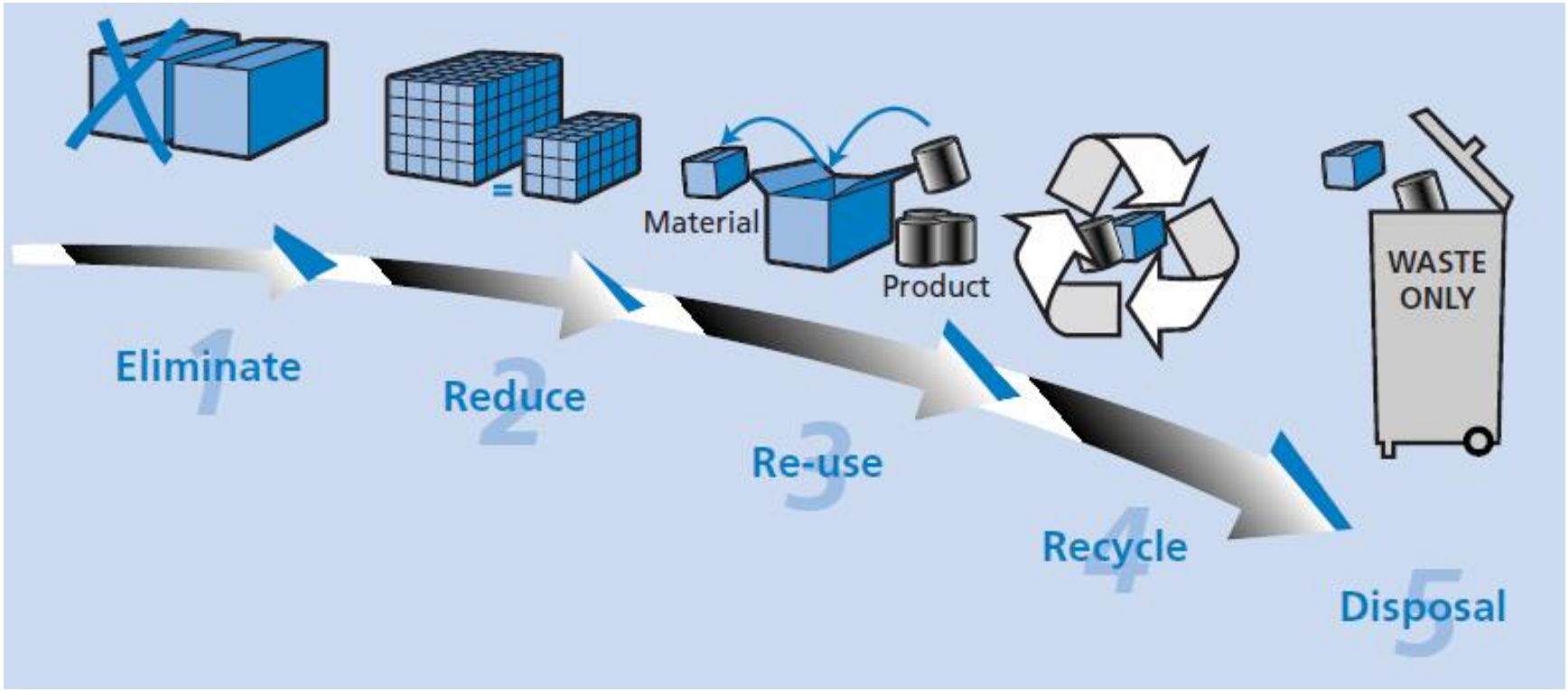

GG 290. Savings from waste minimization in furniture manufacturing. This Good Practice Guide was produced by Envirowise. United Kingdom. Harwell International Business Centre. 2001.

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Thank you for your attention!

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