Universität Rostock Traditio et Innovatio

Bioenergy Promotion

Sub-regional policy showcases and good practises- policy lessons learned

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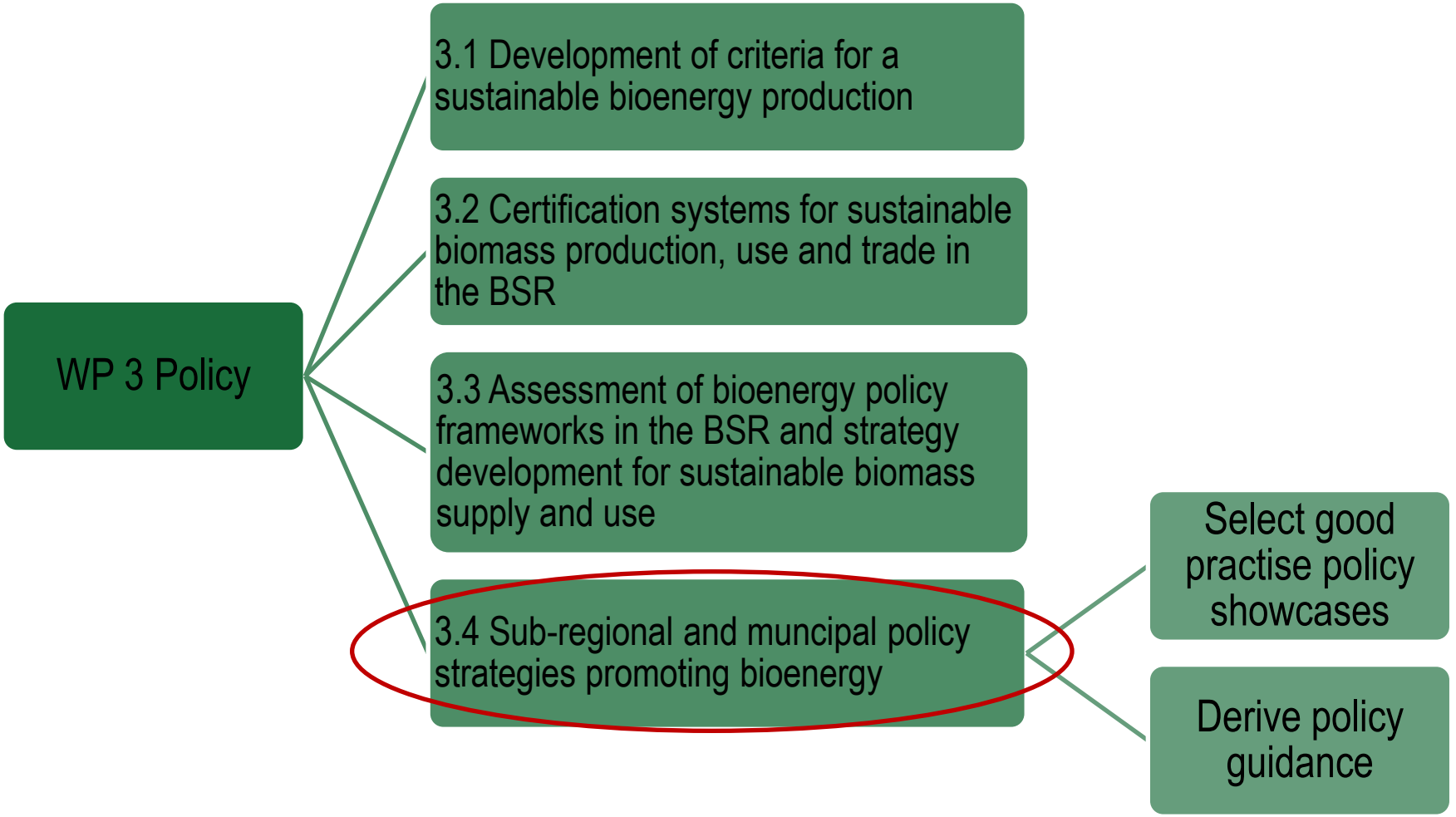
context of task 3.4



good practise policy showcase?

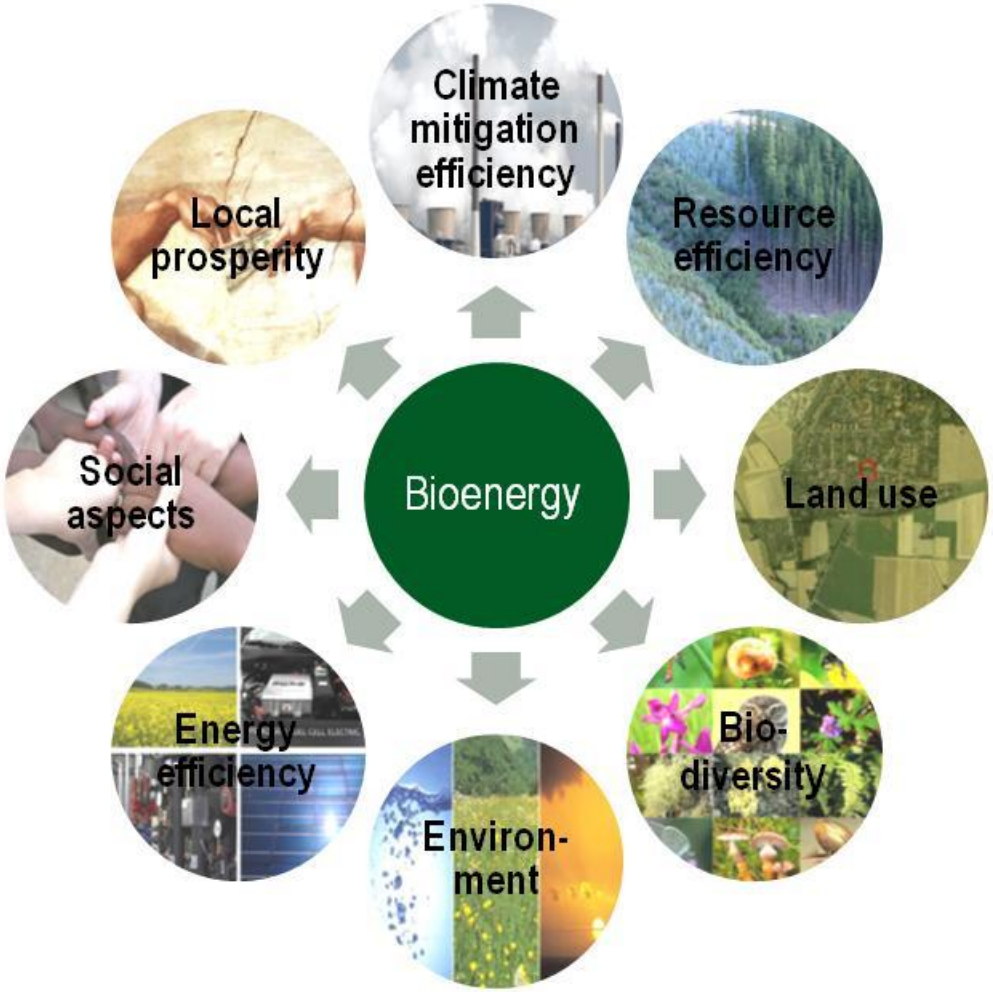
<u>good practise showcase:</u>

- ✓ local and regional policies and measures supporting bioenergy
- ✓ consideration of environmental, economical and social sustainability criteria
- ✓ closed substance cycles, utilization of regional resources
- ✓ transferable to other regions
- ✓ cost and time efficient implementation

<u>policy instruments/activities:</u>

- regulations, laws (mainly on national or European level)
- economic instruments (taxes, grants, subsidies)
- voluntary agreements
- municipal ownership
- urban planning
- organizational instruments
- demonstration projects

sustainability principles



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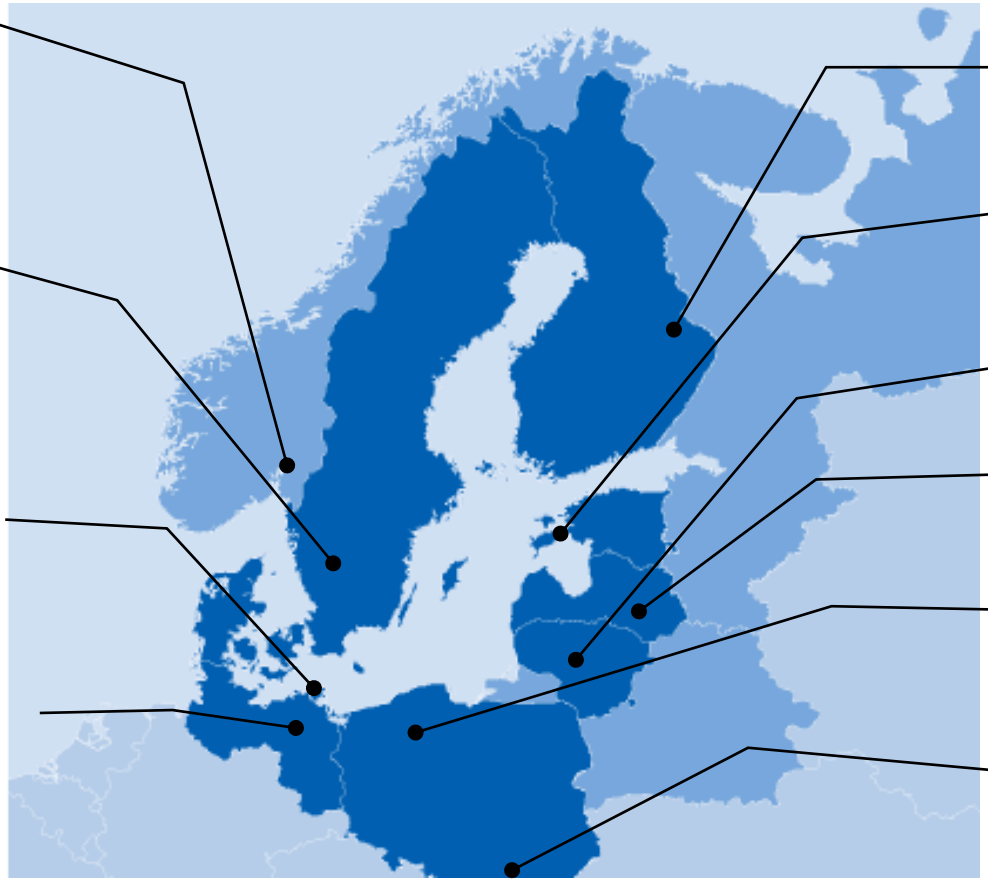
selected showcases



Przechlewo, Poland

-Municpality consists of 33 villages

- 6300 inhabitants and an area of 244 km²

Planning Phase:

Strategy for Sustainable Development of Przechlewo Municipality 1999-2010, 2006-2020

Program for Environmental Protection for Przechlewo Municipality 2006-2013

Targets:

- Development of renewable energy system based on local resources
- Promotion of agriculutral biogas installations and wind farms
- Modernization of district heating systems
- Development of systems reducing the pollution emission
- Actions for biodiversity conservation
- Good practise in ecological agriculture
- Rational use and protection of natural resources
- Increase ecological awareness among local society

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Przechelwo, Poland

Implementation Phase:

1: Construction of a straw fired boiler plant

- A large amount of straw is produced locally and part of it (~1950 t/year) is used as a fuel to produce heat (5MW)
- Replaces the old coal-fired boiler
- The straw fired boiler plant has been in operation since 2001 and currently provides heating for ~1900 users.
- Only surplus straw is used

2: Thermomodernization of municipal buildings

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Implementation Phase

3: Promotional and educational projects

- All plans and decisions important for the municipality were subject of public consultation
- Creation of environmental education centres
- Organisation of seminars, lectures and training related to environmental protection and bioenergy
- Introduction of environmental and ecological education in school programs
- Arranging competitions and other events on environmental protection topics
- Editing and dissemination of information materials
- Sponsoring of different initiatives related to bioenergy and environment by business and public institutions

Przechlewo, Poland

Results:

– Reduction of coal consumption through increasing use of biomass

– Significant reduction of GHG emissions

– Reduction of heat energy losses

– Increased security of fuel supply

– Benefits to local agriculture and the local community

Table 1: Reduction of emissions by replacing the coal fired boiler plant

	CO_2	SO_2	N_2O	Particulate matter
t/a	7000	100	90	10

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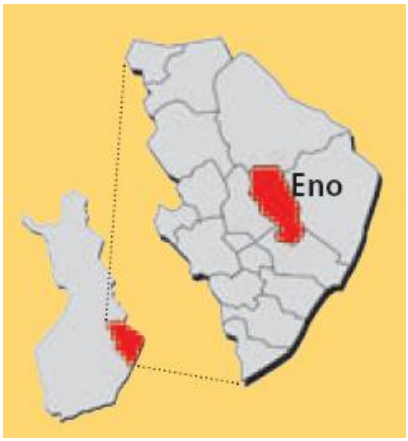
Eno, Finland

-Municipality of Eno (since 2009 part of Joensuu)

- Area 1100 km², 7000 inhabitants



Planning Phase:

Natural Resource Strategy of Eno Municipality 1997

Targets:

– Increase the use of wood as energy source

– Research into the profitability of the project has been aided by the Metka and ROIHU development projects (Carey 2005)

– Key factor for success was privatizing of the municipal heating systems

Eno, Finland

Implementation Phase

1. Building a heating plant owned by the municipality

- built in 1999
- based on wood chips from nearby forests
- heating of public buildings like municipal office buildings, health centres, gyms

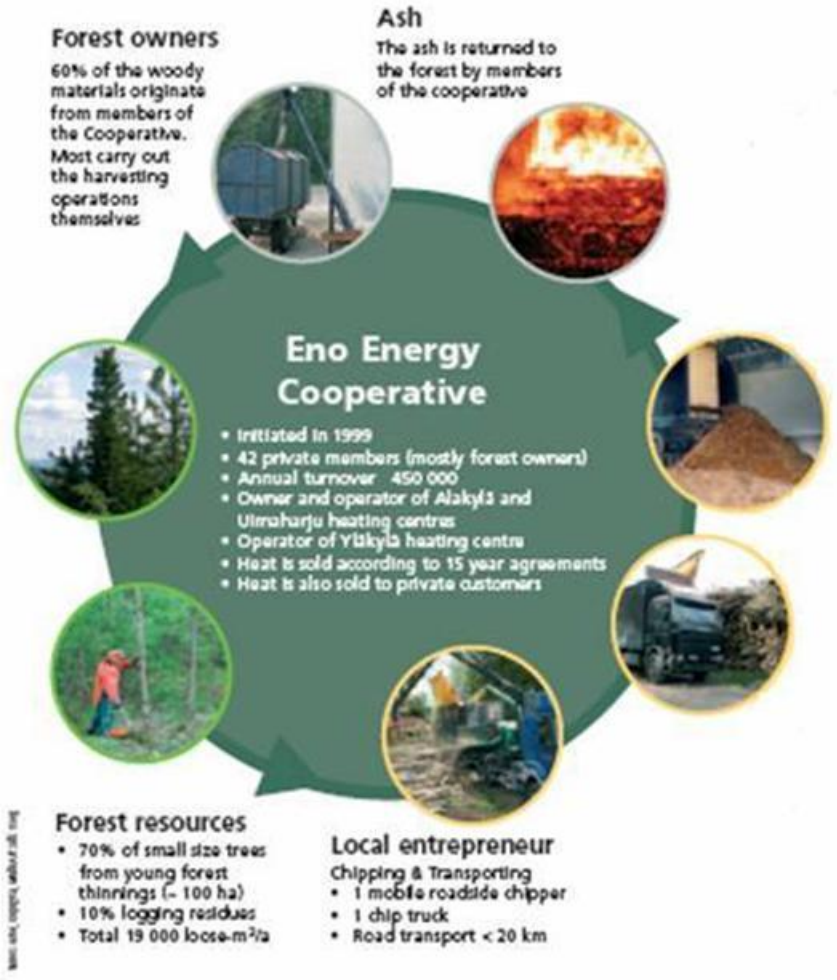
2. Foundation of the Eno Energy Cooperative

- Founded in 1999
- In the beginning 12 founder members, forest owners
- manage and utilize the own forests
- Contract between the municipality and the cooperative
  Cooperative = operator
  Municipality = buyer

Eno, Finland

Results:

- 2 more heating plants were built by the cooperative, 42 members today
- 4 million kilos CO_2 savings annually
- Wood energy heating replaces about 1.8 million liters of oil per year
- About 1.4 million Euros (2010) were saved by the local economy
- The switching to local energy sources has created jobs for 20 persons, totally 7-10 man-years
- A local energy source brings safety and independence in times of a possible energy crisis



Hadeland, Norway

- A region in Oppland County
- Consists of three municipalities (Gran, Lunner, Jevnaker)
- Population 28 000, area 1125 km²

<u>Planning Phase</u>:

Bioenergy Plan 1987

Project Plan Bioenergy Region of Hadeland 2003

Energy and Environmental Plan 2007

Targets:

- In 2020 the Hadeland region has increased its use of bioenergy so that the total use of energy in our society is in balance with sustainable use of nature
- Doubling the use of bioenergy in Hadeland from the year 2003 up to the year of 2015
- Develop further Hadeland's position as a leading region in knowledge and development of bioenergy in Norway

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Implementation Phase:

1. Networking and Clustering

– Bring togheter producers, suppliers and consumers of bioenergy

2. Employment of mutual climate advisor

– Covers all three municipalities

– Works towards the municipal authorities, the regional stakeholders and the public

– Three main focus areas:

  - Attitude forming work

  -"Environment certificates" (light house businesses)

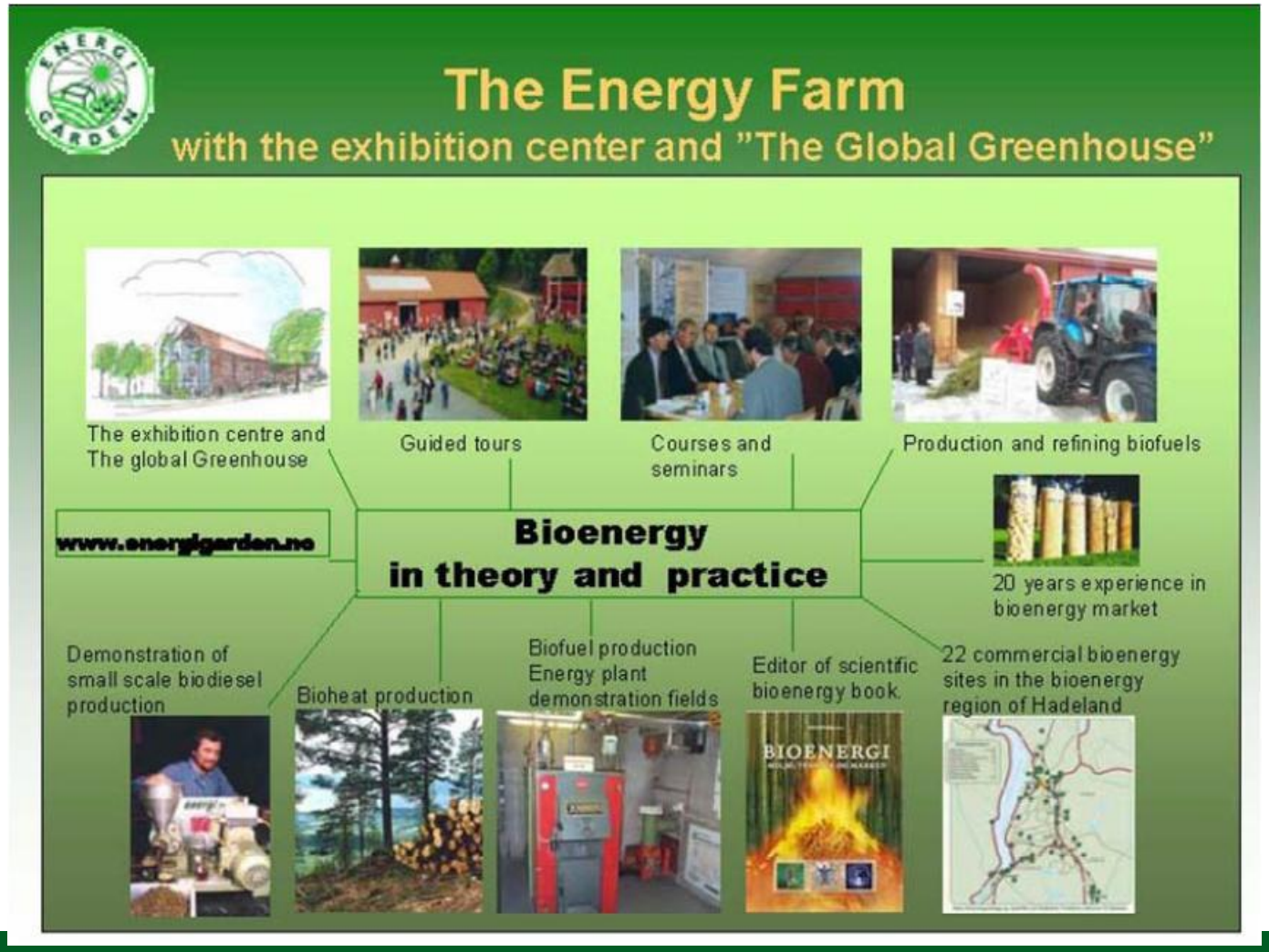
  - Initiator/initiative-taker

3. Demonstration and Education

– Use of biodiesel in cars owned by the muncipality

– The Energy Farm working with courses, education and production of all kinds of bioenergy as information centre for bioenergy producers, politicians, public

Hadeland, Norway



Results: What has the Hadeland Bio Region achieved in the years 2003 – 2010?

Bio Energy Plants

•Woodchip based Central Heating on farms	15
•Straw based Central Heating on farms	5
•Firewood based Central Heating in homes	35
•Commercial / Public Central Heating	10
•Wood producers, proffesional	10
•Wood stoves	> 10.000
•Pellet stoves	> 100
•Local Heating system	2
•District Heating system, under construction	2
•Biogas Combined Heat and Power Plant (HRA)	1
•Biodiesel - Company (Habiol)	1
•Biodiesel - cars	100

(Eid Hohle, 2010)

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Policy lessons

Contributing partners

Grazyna Rabczuk, Adam Ceniam,
Energy Cluster, Poland

Gunnhild Søgaard,
Norwegian Forest and Landscape Instiute, Norway

Pradipta Halder,
University of Eastern Finand, Joensuu, Finland

Sigitas Lazauskas,
Lithuanian Institute of Agriculture, Lithuania

Inge Roos,
Tallin University of Technology, Estonia

Andis Ladzins,
Latvian State Forestry Research Institute, Latvia

Sonja Ewerstein,
Swedish Energy Agency, Sweden

Baltic Sea Region Programme 2007-2013
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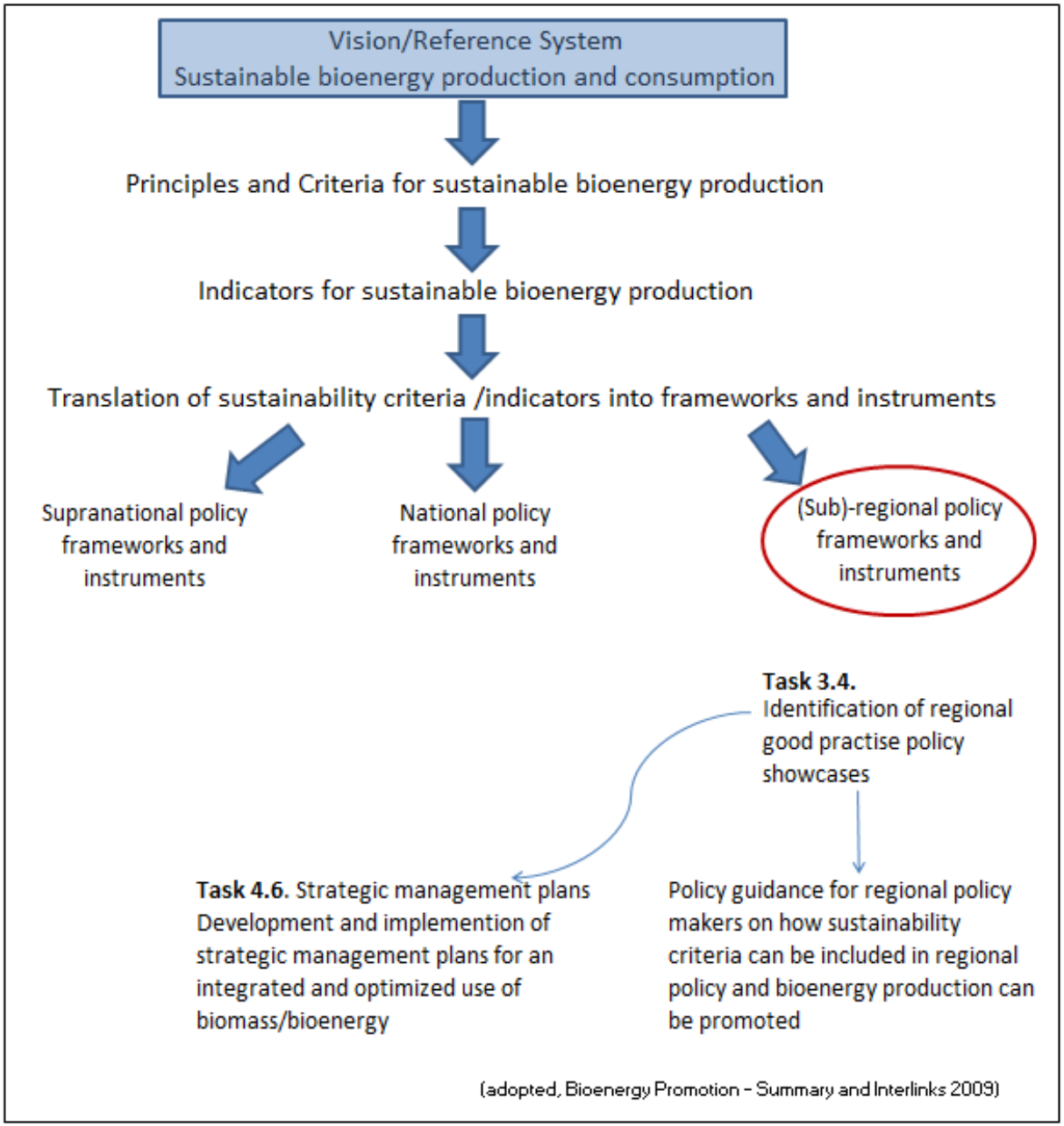
Funding Sources

Showcase	Funding
Hadeland, NO	Green Energy Municipalites Programme
Kaunas, LI	Funded by County and municipal means, environmental funds and EU structural funds
Muhu, EST	The initial investment in boiler plant was supported by soft loan from the World Bank secured by the Government.
Daugavpils District LV	Investment provided by national government
Rügen, GER	Supported by national government
Meckl. Seenplatte, GER	Supported by national government
Przechlewo, PL	co-financed by the Ekofundusz Foundation, Pomorskie Voivodeship Fund for Environmental Protection and Water Management, Agricultural Property Agency of the State Treasury and Municipality of Przechlewo


Vision/Reference System
Sustainable bioenergy production and consumption
Principles and Criteria for sustainable bioenergy production
Indicators for sustainable bioenergy production
Translation of sustainability criteria /indicators into frameworks and instruments
Supranational policy frameworks and instruments
National policy frameworks and instruments
(Sub)-regional policy frameworks and instruments
Task 3.4.
Identification of regional good practise policy showcases
Task 4.6. Strategic management plans
Development and implemention of strategic management plans for an integrated and optimized use of biomass/bioenergy
Policy guidance for regional policy makers on how sustainability criteria can be included in regional policy and bioenergy production can be promoted
(adopted, Bioenergy Promotion – Summary and Interlinks 2009)

Types of Biomass

Policy Showcase	Agricultural (plant biomass, residues)	Forest (woody biomass incl. SRC)	Municipal waste	other
Hadeland NO		XXX	X	
Kaunas LT	XX		X	
Muhu EST		XXX		
Przechlewo PL	XXX			
Nowa Deba PL		XXX		
Daugavpils District LV		XXX		
Eno District FIN		XXX		
Växjö SE	X	XX		
Rügen GER	X	X	XXX	X

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Policy lessons

- important is to have a driver
- local politicians take challenges serious
- include energy and climate in muncicipal plans
- it‘s hard to find both personal and financial resurces in the municipal administrations
- thing take time
- pay attention on involving small actors, peoble who work in practise
- strong involvement of local authorites and relevant stakeholders
- at local level bodies should be proactive and encourage the initiators
- networking between experts and organizations

References

[1] http://www.fotos-aus-der-luft.de/luftbild/534-3/Mecklenburgische_Seenplatte_02