

Erweiterung	1987				2003				2004				2005			
	Mittelklasse		Hochleistungs		Mittelklasse		Hochleistungs		Mittelklasse		Hochleistungs		Mittelklasse		Hochleistungs	
BEF	8,1	18,3	19,6	19,6	19,6	19,6	19,6	19,6	19,6	19,6	19,6	19,6	19,6	19,6	19,6	19,6
WV	10,1	10,1	10,1	10,1	10,1	10,1	10,1	10,1	10,1	10,1	10,1	10,1	10,1	10,1	10,1	10,1
AW	11,1	11,1	11,1	11,1	11,1	11,1	11,1	11,1	11,1	11,1	11,1	11,1	11,1	11,1	11,1	11,1
AW	12,1	12,1	12,1	12,1	12,1	12,1	12,1	12,1	12,1	12,1	12,1	12,1	12,1	12,1	12,1	12,1
AW	13,1	13,1	13,1	13,1	13,1	13,1	13,1	13,1	13,1	13,1	13,1	13,1	13,1	13,1	13,1	13,1
AW	14,1	14,1	14,1	14,1	14,1	14,1	14,1	14,1	14,1	14,1	14,1	14,1	14,1	14,1	14,1	14,1
AW	15,1	15,1	15,1	15,1	15,1	15,1	15,1	15,1	15,1	15,1	15,1	15,1	15,1	15,1	15,1	15,1
AW	16,1	16,1	16,1	16,1	16,1	16,1	16,1	16,1	16,1	16,1	16,1	16,1	16,1	16,1	16,1	16,1
AW	17,1	17,1	17,1	17,1	17,1	17,1	17,1	17,1	17,1	17,1	17,1	17,1	17,1	17,1	17,1	17,1
AW	18,1	18,1	18,1	18,1	18,1	18,1	18,1	18,1	18,1	18,1	18,1	18,1	18,1	18,1	18,1	18,1

1987 ... 2003 2004 2005

Empirical research to fill data gaps –
about field work, projections and courageous estimates

U+H
University of Hamburg
Department of Wood Science

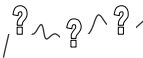
vTI
Johann Heinrich
von Thünen-Institut
Holger Weimar
von Thünen-Institute (vTI)
Institute of
Forest Based Sector Economics

Contents

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 - 1.1 Identification of sectors
 - 1.2 Data collection of new markets
 - 1.3 Market structures
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 - 2.1 Defining the sector
 - 2.2 Understanding the material flows
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 - 2.4 Development of questionnaire
 - 2.5 Dealing with non responses

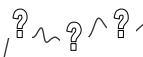
03.04.2008 Mantau / Weimar – Empirical research to fill data gaps slide 2

1.1 Identification of sectors



sources		uses		
[mio. m ³]	%	%	[mio. m ³]	
<p>What does the wood energy sector look like?</p> <p>Is this the solution? →</p>		1%	7	wood fuel industry
		6%	49	power and heat
		8%	65	industrial internal
		11%	92	private households
		16%	135	undifferentiated energy use

1.1 Identification of sectors



The wood energy sector

EU – wood resource balance

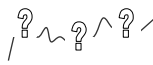
wood fuel industry
power and heat
industrial internal
private households
undifferentiated energy use

Germany – wood resource balance

power and heat > 1 MW
power and heat < 1 MW
private households

Standard structure of the energy sector

large Power & heat plants
small Power & heat plants
private households
wood fuel industry
biofuel-industry



1.2 Data collection in new markets

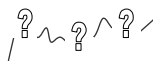
Different market structures lead to different survey methods:

Pulp industry plants (DE: 23 in 2005)

Power and heating plants > 1 MW (DE: 481 in 2004)

Power and heating plants > 1 MW (DE: 43.179 in 2006)

Private households (DE: 35.668.000 in 2005)



1.2 Data collection in new markets

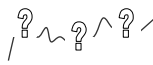
Different market structures lead to different approaches.

Pulp industry plants (DE: 23 in 2005)
should **definitely** be 100% identified by site.

Power and heating plants > 1 MW (DE: 481 in 2004)
PHP > 1 MW would be **worthwhile** to identify
„90% +“ by site.

Power and heating plants < 1 MW (DE: 43.179 in 2006)
could only be identified with **small** sample inquiries
combined with energy statistics.

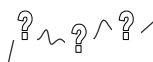
Private households (DE: 35.668.000 in 2005)
Private households could only be identified with **large**
sample inquiries combined with household statistics.



1.2 Data collection in new markets

Data Collection Method: multi-level surveys

- Address {
 - 1. Address enquiries
 - 2. Consolidation of address archive
- Identifying parent population {
 - 3. Development of questionnaire
 - 4. Mailed questionnaires \Rightarrow parent population
current market volumes
short questionnaire
 - 5. Telephone survey for completion
- Sample and projection {
 - 6. Detailed questionnaire \Rightarrow calculation coefficients
longer questionnaire
 - 7. Projection from partial sample on parent population

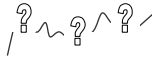


1.2 Data collection in new markets

Data collection method: example sawmill industry

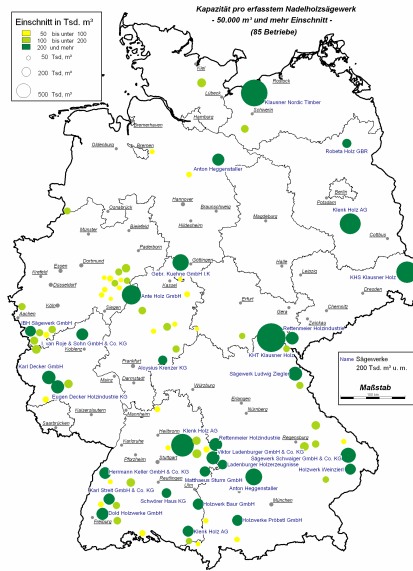
- Address {
 - 1. Address enquiries (8.000 addresses)
 - 2. Consolidation of address archive (5.000 addresses)
- Identifying parent population {
 - 3. Development of questionnaire (half page)
 - 4. Mailed questionnaires \Rightarrow (2.000 identified)
 - 5. Telephone survey for completion (3.000 identified)
- Sample and projection {
 - 6. Detailed questionnaire \Rightarrow (300 in detail)
 - 7. Projection from partial sample on parent population

1.2 Data collection in new markets



identified sawmills in Germany
above 50.000 m³ cutted sawlogs

- ▶ Location-oriented data survey
- ▶ Observation of parent population – Identification of individual participants of a certain business branch
- ▶ Structure of supply, distribution channels for assortments on basis of samples

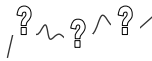


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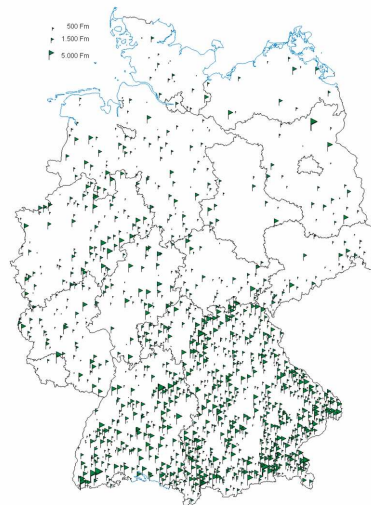
slide 9

1.2 Data collection in new markets



identified small
sawmills in Germany
under 5.000 m³
sawlog cuttings

1,813 mills

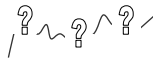


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1.2 Data collection in new markets

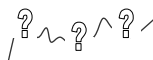


Detailed questionnaire: analysis of technical co-efficients for modelling

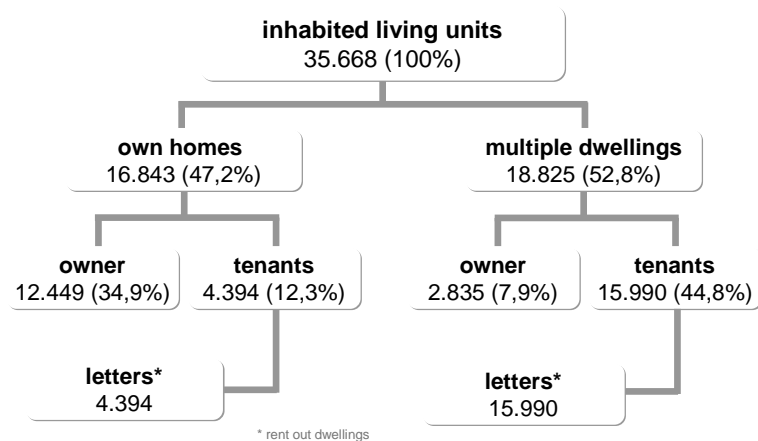
technical coefficients	Saw mill by products in %				
	dust	slabs	chips	other	
X-small sawmills	33,4	56,8	6,7	3,1	under 1.000 m ³
small sawmills 1	35,7	36,9	26,4	1,1	1.000 to 4.999 m ³
small sawmills 2	39,2	21,4	37,1	2,2	5.000 to 19.999 m ³
medium s. sawmills	32,7	3,4	58,5	5,4	20.000 to 99.999 m ³
large sawmills	34,2	0,1	62,8	2,9	100.000 to 499.999 m ³
X-large sawmills	31,0	0,0	67,4	1,5	above 500.000 m ³
Total	33,5	4,5	59,4	2,6	

SÖRGE, C.; MANTAU, U.; WEIMAR, H. (2006): Standorte der Holzwirtschaft – Aufkommen von Sägenebenprodukten und Hobelspänen.

1.3 Market structures

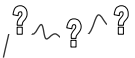


Segmentation of the wood energy consumption in inhabited living units in 1.000 units (2005)

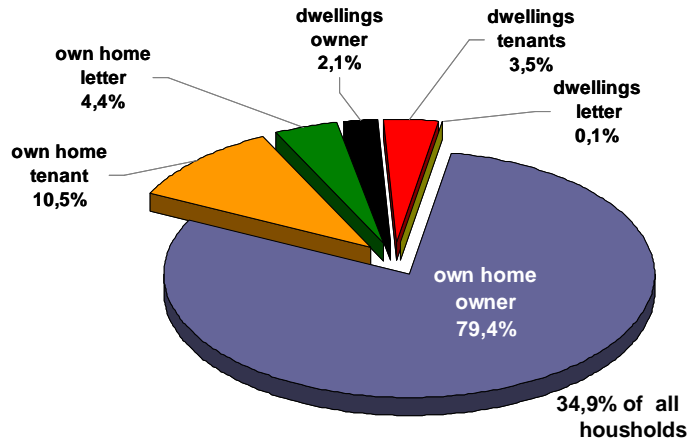


Source: Microcensus and own calculations

1.3 Market structures



Market shares of split logs from forests in private household groups



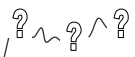
Source: MANTAU, U., SÖRGEL, C. (2006): Energieholzverwendung in privaten Haushalten. Hamburg 2006, 23 S.

03.04.2008

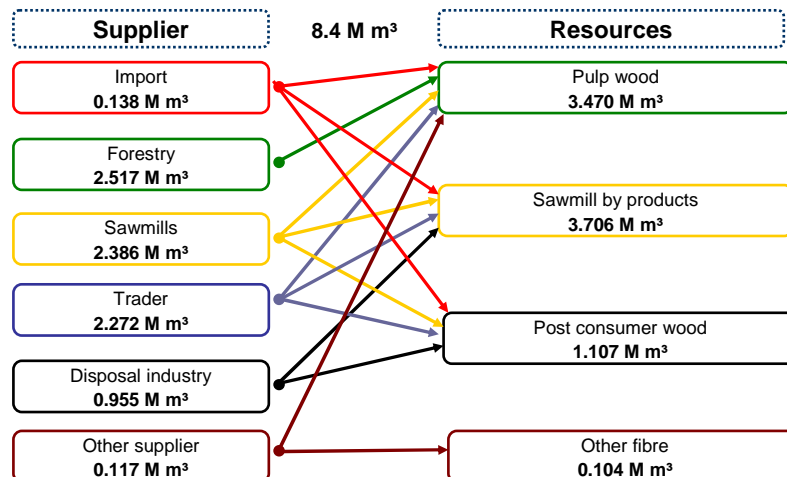
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1.3 Market structures



The distribution channels to the panel industry (particle board)



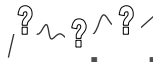
Source: SÖRGEL, C.; MANTAU, U.: Standorte der Holzwirtschaft – Holzwerkstoffindustrie. 2006

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1.4 Institutional aspects

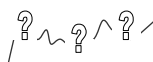


I. Joint working group of sawmill and paper industry on sawmill-by-products



1999 – ongoing resource monitoring motivation → post-consumer wood exports REA (EEG) research topics as a common interest

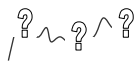
1.4 Institutional aspects



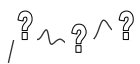
resource monitoring

studies in Germany 1999 to 2008

		year of data									
		99	00	01	02	03	04	05	06	07	08
No.	Markets	P = parent population; S = sample;									
	study layout	L = literature study or statistical analysis									
	consumption										
1	sawmill industry	P				S		P			P
2	pulp industry			P		P		P			P
3	panel industry			P		P		P			P
4	large Biom. Power and Heat. Plants					P		P			
6	medium s. BPHP appr. 30 kW - 1 MW					LS				PS	
7	households		S					S			S
8	pulp industry international				L		LS				
9	panel industry international				L	LS					
10	others					RI					



- Empirical studies are time and cost intensive but as long as official statistics cannot fill the gaps they are fundamental.
- On the other hand it helps to understand real market structures and commodity flows.
- Gaps will still remain, but with some useful tools they can be minimized.

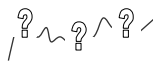


1. Framework of empirical research

- 1.1 Identification of sectors
- 1.2 Data collection in new markets
- 1.3 Market structures
- 1.4 Institutional aspects

2. Empirical research in data gaps

- 2.1 Defining the sector
- 2.2 Understanding the material flows
- 2.3 Address research
- 2.4 Developing a questionnaire
- 2.5 Dealing with the data

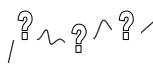


2.1 Defining the sector

Gathering Information of the unknown sector



- Empirical studies or surveys
- Statistics by government, associations, federations
- Interviews with stakeholders
- Regulations by law, ordinance, or directives



2.1 Defining the sector

e. g. in Germany: The Federal emission control act



Information

Facilities require authorization if firing thermal capacity is ≥ 1 MW

Further differentiation:
Production/Trade/
Service
and
Private Households

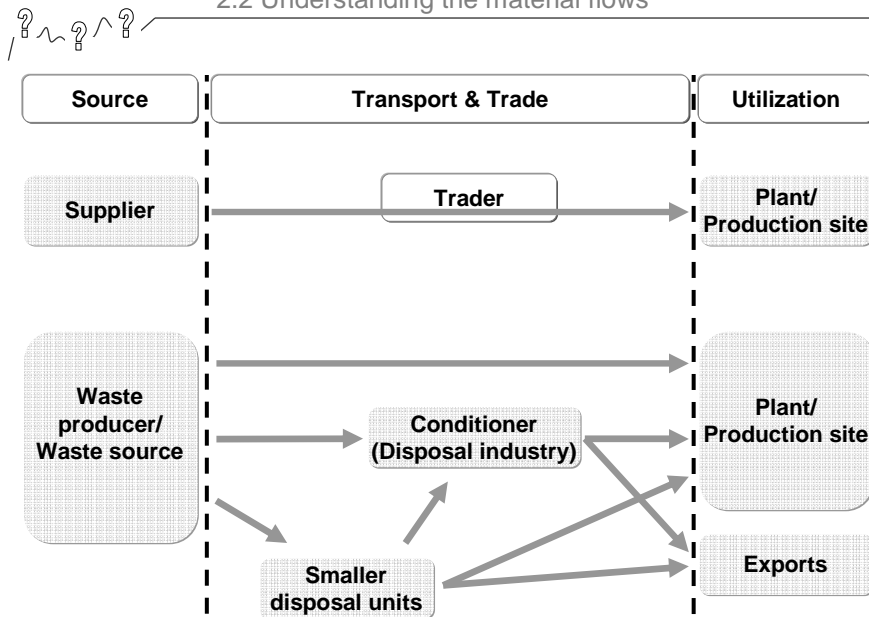
Sectoral differentiation

Large BPH-Plants
(≥ 1 MW)

Small BPH-Plants
(~ 30 kW to 1MW)

Private Households

2.2 Understanding the material flows



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2.3 Address research in new and/or dynamic sectors

Aim: Coverage of 100 %

Identification of address origin:

- Governmental, official sources
- Associations or federations
- References list of boiler producer
- Print and online media
- Online databases (e. g. yellow pages)

But: You will not get full addresses of all investigated locations

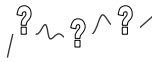
You will not be to find all addresses of a specific sector initially.

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2.3 Address research in new and/or dynamic sectors

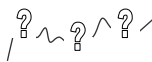


BPH-Plants



Source	Firm Name	Address	Postal Code	City	Contact Person	Operating Company
Q1	A-Company	A-Street	A-12345	A-City	Mr. A	Operator A
Q1	B-Company			B-City/ County		
Q2				County/ Region		Operator C
Q2	D-Company					Operator D
Q3				B-City		
Q4	E-Company	A-Street	A-12345	A-City		

2.4 Developing a questionnaire



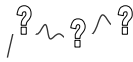
- Letter heading with research institution and accompanying association
- Update of address data
- Offering of incentives

	„Quantity of Recovered Wood and its Consumption“	BAV <small>Bundesverband der Altholzaufbereiter und -verwerter e.V.</small>
<small>Prof. Udo Mantau/Holger Weimar, University of Hamburg, Department of Wood Science, Leuschnerstr. 91, D - 21031 Hamburg</small>		<small>Please correct your address if necessary.</small>
«CompanyName1»	_____	
«CompanyName2»	_____	
«(Contactperson)»	_____	
«Address»	_____	
«Zipcode» «City»	_____	<input type="checkbox"/> Please send me a free report

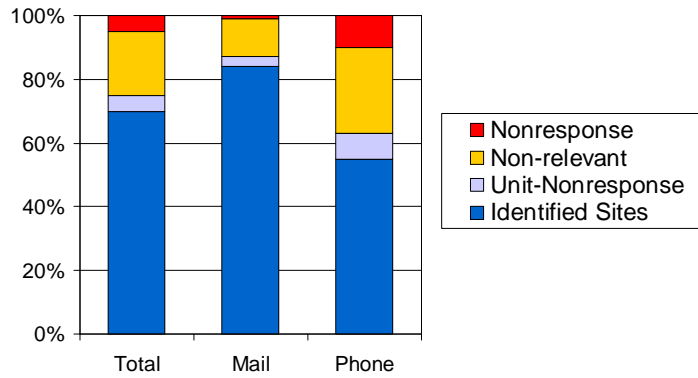
- Nested address research

<p>8. To complete our address stock: Please note the addresses of two or three waste wood disposers next to your business unit.</p> <p>Name _____ City _____</p> <p>Name _____ City _____</p> <p>Name _____ City _____</p>

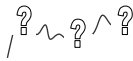
2.5 Dealing with non responses



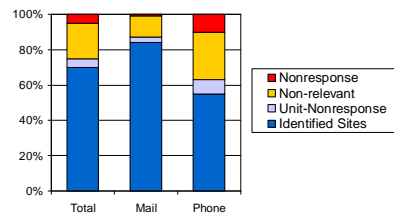
Response rates in mixed mode surveys

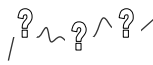


2.5 Dealing with non responses



- **Mixed-Mode survey provides a high rate of response**
- **The mean volume of used resources of identified sites is higher at mail-response**
- **Differentiated response-data can be used to optimize the calculation of the parent population**





Summing up

- **Gathering of information in a first step is crucial for understanding the unknown sector**
- **If possible, the unknown and heterogeneous sector has to be differentiated into more homogeneous parts**
- **The questionnaire has to be outlined according to the structure of the companies and the material flow**
- **A mixture-mode design leads to high response rates and a broader empirical basis to outline the parent population**

