

Learning from Past Experiences and Mistakes Made by Others as a Starting Point for the Development of Appropriate Case-Related Solutions



Dr. Christoph Hartebrodt*, Verena Quadt**, Yvonne Chtioui*

*Forest Research Institute Baden-Württemberg (Germany); FVA

** European Forest Institute Central European Regional Office, EFICENT



Outline

2

- Preface
- General Characteristics of Management of Natural Disturbances
- First Response Experiences
- Forest Policy Measures
- Long-Term Aspects of Natural Disturbances
- Small-Scale Forestry Issues
- Information Policy and Strategy
- Opportunity and Offers of the Pilot Project “European Forest Risk Facility” → FRISK
- **Questions and Discussion**

Preface I

Each catastrophic event has its own characteristics

Learning from past experiences is very, very valuable

however

Copying of strategies applied in other regions without critical reflection and without regional and case-related adaptation is dangerous and misleading!!!

Preface II

Germany



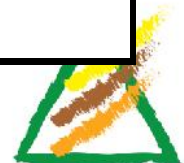
Baden-Württemberg



Slovenia



	Baden-Württemberg	Slovenia
Size country [km ²]	35.700	20.300
Share forest land	40 %	58 %
Forest land [ha]	1.35 Mio.	1.17 Mio.
Privat forest owners	about 200,000	about 314,000 (450,000)
Avg. Size privat forest	about 2 ha	about 3 ha

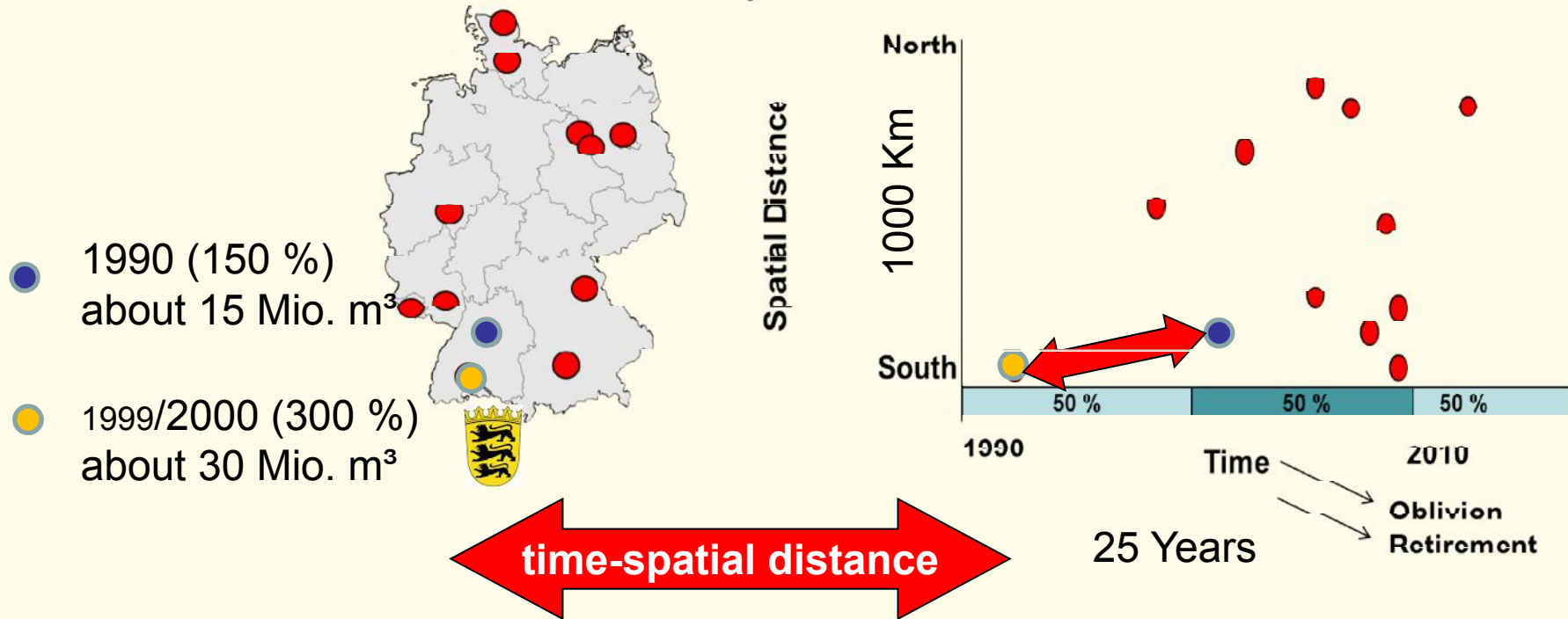


General Characteristics of Management of Natural Disturbances

General Characteristics of Management of Natural Disturbances I

Too often – too seldom

Storm events in Germany



Combination of time and spatial distribution:

Natural disturbances are expected to remain rare events at the local level → far from business as usual → experience is missing

General Characteristics of Management of Natural Disturbances II

Don't be happy, but don't worry (too much)

Natural disturbances: A hell a lot of work, but not the end of all days

Look at the smiling crisis experts from different states in Germany



General Characteristics of Management of Natural Disturbances III

Crises as a part of forestal normality

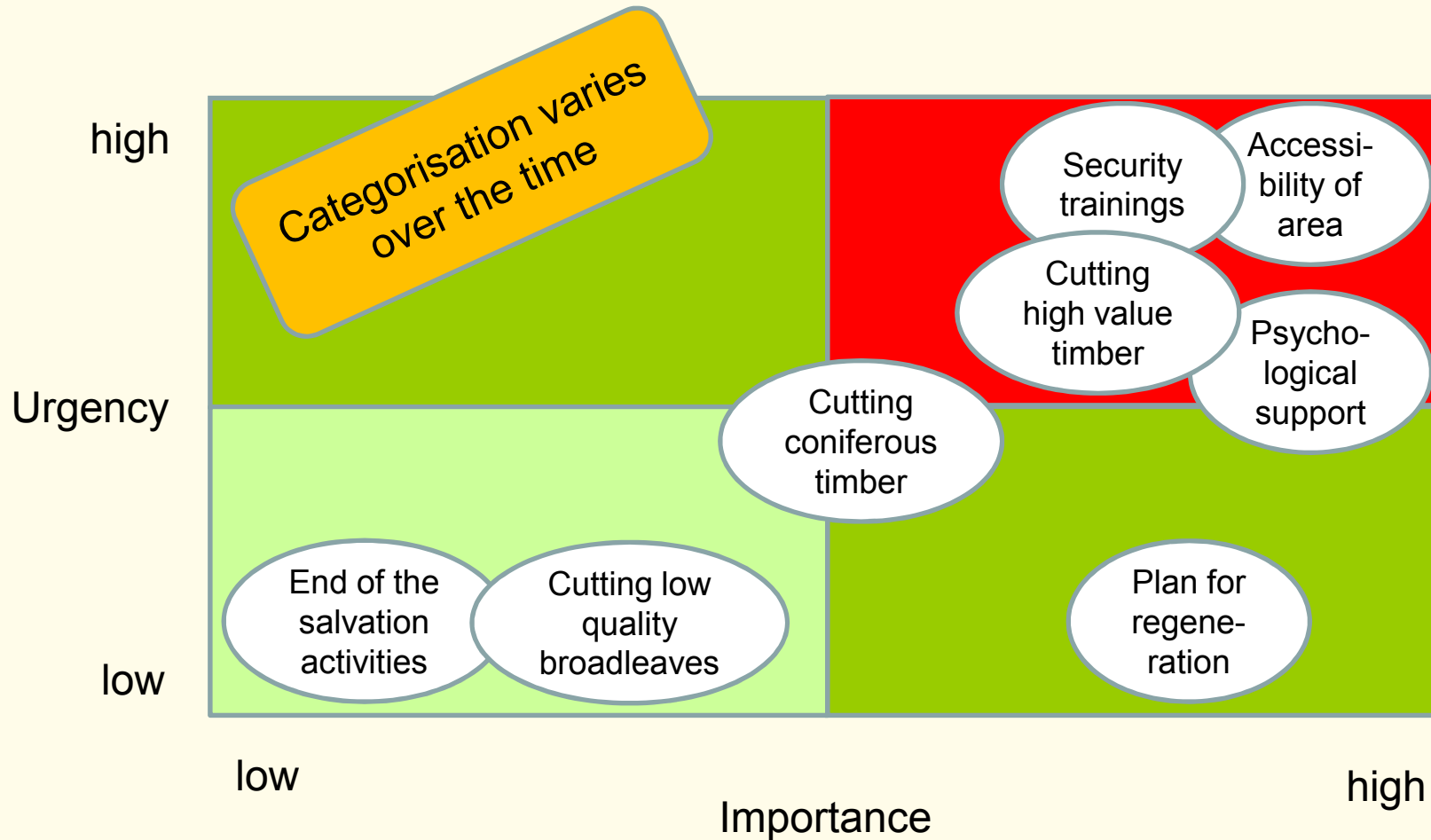
- Tendency to act too fast → following the idea of “back to normality”
- Hurrying is not recommended
- Natural Disturbances are part of our job!
- A clear prioritisation e. g. using urgency / importance matrices (next slide) can even help to **discharge** everybody involved
- Not everything is urgent !!!

- People involved react differently to crisis-phenomena
 - Lone warriors
 - → exposed to overload
 - → can result in intraorganisational competition
 - Help seekers → searching for guidance and advice

Psychological support for affected people was heavily missing



Urgency / Importance



General Characteristics of Management of Natural Disturbances IV

10

Well-known processes but tremendous “dynexity”

- **Dynexity = Dynamics + Complexity**

Dynamics:

- More processes at the same time, occurrence is unexpected
- External expectation to solve the problem quickly
- Clear external communication needed:
 - We are active! We have a plan of what to do!
 - But as well: It takes time!
 - Vision of what happens when, including schedule for further communicative activities

Complexity:

- All processes (cutting, forwarding, grading, forest protection) are known, but more difficult, worse framework conditions etc.

The more dynexity, the more coordination and communication is needed !!!

First Response Experiences

First Response Experiences I

Strategic approach

Attempt to avoid “as fast as possible-approach ” and thus competitive course of action

Definition of core objectives

- Level concept: What is organised centralised, what is regional
- “Safety first” policy
- Sequence of salvage logging
 - Save high value timber
 - Avoid secondary damages (especially bark beetle)
- Clarification of priority of private / public forests
 - Priority of timber sales from private and communal forests
- Nature / soil protection remains important

Development of an operational sanitation plan

- local level

Only partial
success



First Response Experiences II

13

Bottleneck identification

The whole process is not better than the weakest link in the chain

Before 1990:

Bottleneck: Often sawmilling capacity

1990: Mainly work with chainsaw

→ Bottleneck: Manpower

2000: Mainly processing with harvesters

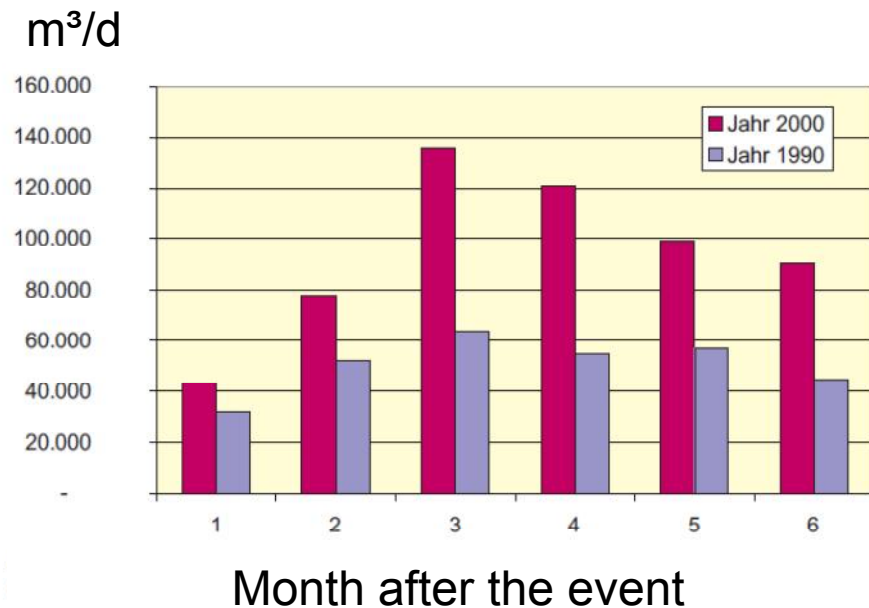
→ Bottleneck: Transportation capacity

2014: Slovenia: To be analysed

Bottlenecks are extremely case-related

→ Systems analysis approach needed

→ Bottlenecks will change over time



In 2000 we were
drowned in processed
timber along roadside

→ Devaluation



First Response Experiences III

14

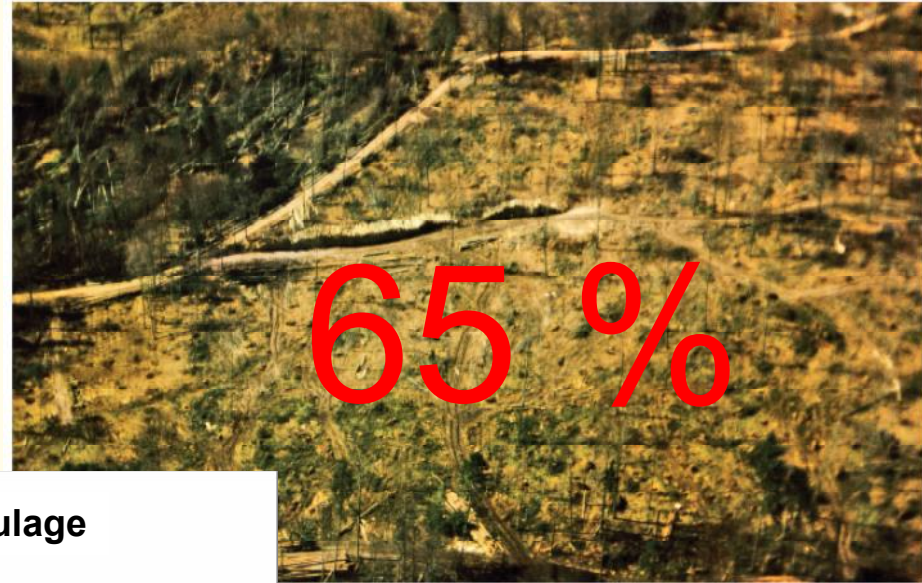
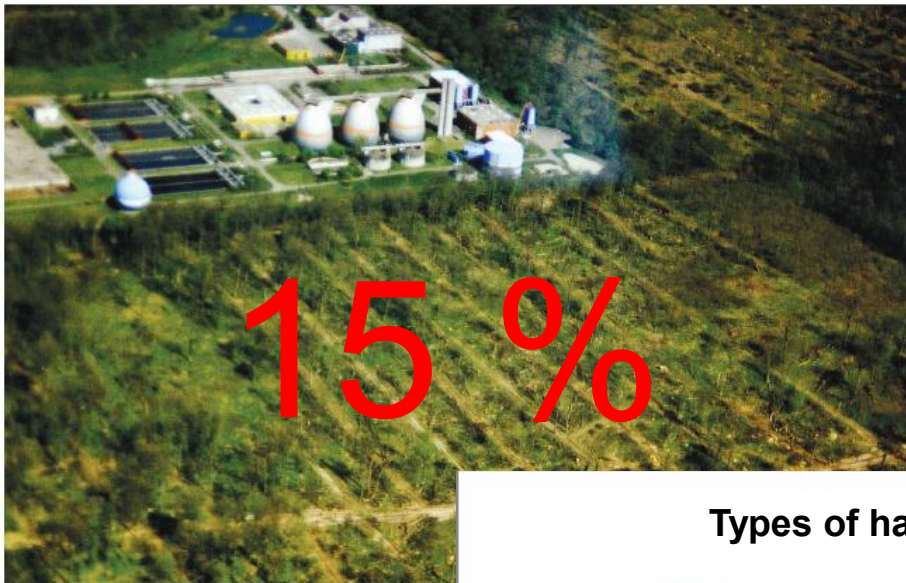
Nature protection issues

The pressure perceived was partially too high to guarantee these aspects:

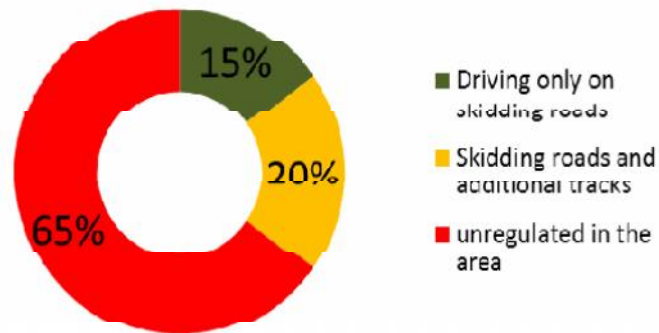
- **New contractors, no experiences about their work-performance**
- **Contractors want to make money**
- **Contractors were not familiar with the local situation**
- **External expectation to show fast progress in salvage logging**
- **Problems to identify skidding roads and sensitive areas in damaged stands**

There was criticism from the environmental NGO's

First Response Experiences IV



Types of haulage



Good job!

But partially competition with OSH issues e. g. excavators have smaller range

Result of exaggerated hurrying and a „the end justifies the means“ policy

Weak performance in soil protection where planning failed



Forest Policy Measures

Forest Policy Measures I

17

Role of State Forest and Forest Administration

- Extreme institutional support by State forest administration for communal and private owners in particular
- Almost no administrative acts → Management by offers for support in private forestry
- Far reaching priority of timber sales from private properties
- High amount of extension- and support- offers for private owners

	State	Municipalities	Private
	[% of sold timber processed]		
After 3 months	18	29	44
After 13 months	71	72	92

A success story!

Highly appreciated by municipalities and private forest owners.

Almost no administrative acts needed.

However:

Field foresters regionally absolutely overcharged.



Forest Policy Measures II

18

Subsidies and their success

Fiscal Measures

- Partial remission of income tax for severely affected enterprises §34b EStG (EStG =Income Tax Act)
- Reduced tax rates for processing storm damaged timber in future financial years
- Possibility to subtract expenses of afforestation from current working expenses
- Commencement of an ordinance to the forest damage compensation law

Other Measures

- Direct subsidies for private forests in monetary form (€17.4 Mio.)
- Establishment of wet storages in small scale private forests (Total €9,2 Mio.)
- Engagement of service companies, reassignment of foresters from other federal states
- Set up of wet storages in state forests (€5,1 Mio.)

In total €153 Mio.

But partially for operations in state forests

Max. 200 ha size of enterprise at the beginning

Forest Policy Measures III

19

Fixed amount subsidies

Pre-carriage and stack aid

Subsidy for intermediary transportation to wet or dry storage

5.10 €/m³

Wet storage aid

Annual subsidy to cover current storage costs

3.10 €/ m³ (in 1st year
8.20 €/ m³ incl. pre-
carriage)

Debarking aid (once at dry storage)

2,56 €/ m³

Ground clearing flat rate

for throw/break of stands/wind-slash without usable wood

1,022.60 €/ha resp. 80%
of the effective costs

Extensive storage strategy
for stabilisation of timber
market

Cost share programs

Investments of timber conservation equipment for wet or dry storages

40% of costs (approved); set up of dry stacks according to instructions

Repair of forest roads: only for private forests < 200 ha area.

Costs up to €25,565 or 40%, above 50% eligible for financing.

Natural regeneration, under planting or afforestation: All kinds of forest ownership.

Only coniferous trees – no subsidy

Deciduous tree plantation: 4,090 €/ha

Mixed plantation (share of deciduous trees min. 40 %):

2,556 €/ha

Natural regeneration: 767 €/ha

Forest Policy Measures IV

20

Others:

- Special loan programs with reduced interest rate for investments
- Recovery subsidy for larger private forest properties
 - Size of forest estate (20 – 200 ha)
 - Damage > 40 m³ / ha (on average)
 - Total (taxed) family income up to 92.000 €
 - 102 – 256 €/ha (under forest management)
 - Paid for the first 10 years after the storm
- Avoidance of all subsidies that could be transferred easily to timber buyers or contractors. They are making their money in times of natural disturbances.

Subsidy – Policy met expectations of most affected owners

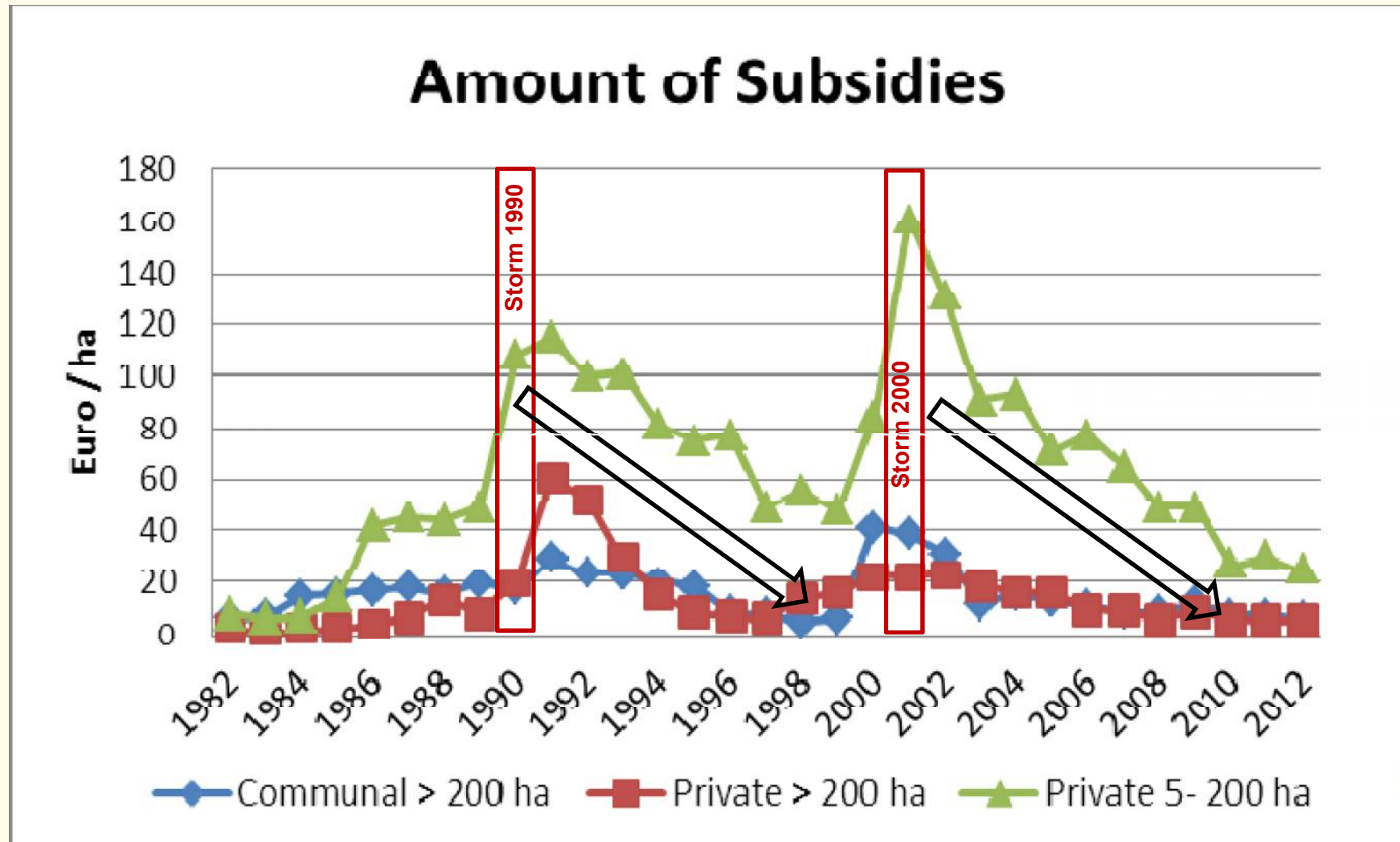
Storage Policy: Exact evaluation of success almost impossible, mixed experiences



Forest Policy Measures V

	2000		2001		2002	
	Private	Communal	Private	Communal	Private	Communal
	[Mio. €]					
Immediate Response Subsidies						
Transportation to Wet Lumber Yards	10,0	10,9	2,6	6,6	2,1	4,4
Repairs of Forest Roads						
Clearing of the damaged areas						
Investment in Wet Lumber Yards	1,0	1,3	0,1	0,1		
Silvicultural Measures						
Reforestation ...	4,6	7,0	6,1	12,3	6,3	14,3
Recovery Subsidy	1,8		1,8		1,8	
Sum [per year]	17,4	19,2	10,6	19,0	10,2	18,7
2000-2002	38,2	56,9				

Forest Policy Measures VI



Long-Term Aspects of Natural Disturbances

Long-Term Aspects of Natural disturbances I

Economic Issues I

Standard pattern:

First year after event:

Revenues can mostly compensate the direct costs of salvage logging

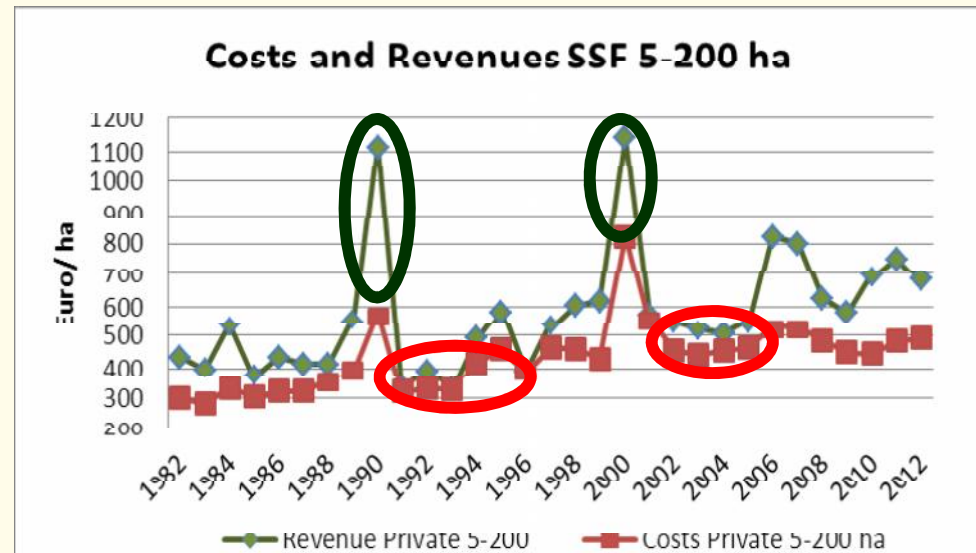
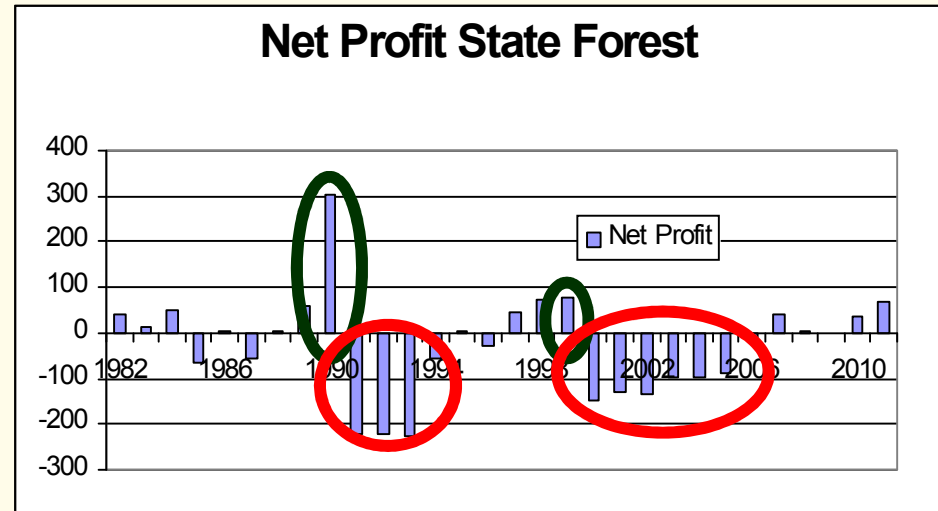


2 to 3-5 years after event:

Reduced timber prices, reduced harvest in order to stabilise timber markets and sell damaged timber plus creating additional costs for regeneration, repair of forest infrastructure etc.
→ Liquidity is missing



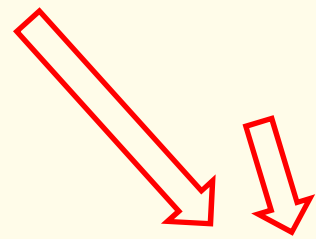
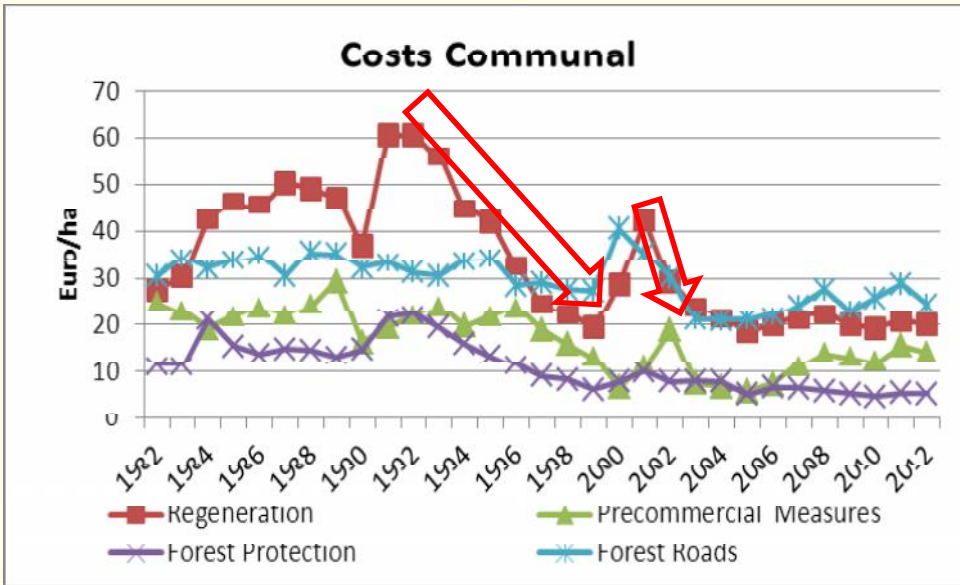
Consolidation starts mostly after the last timber from the catastrophic event is sold.



Prohibition of deficits only as a result of subsidies !!!

Long-Term Aspects of Natural Disturbances II

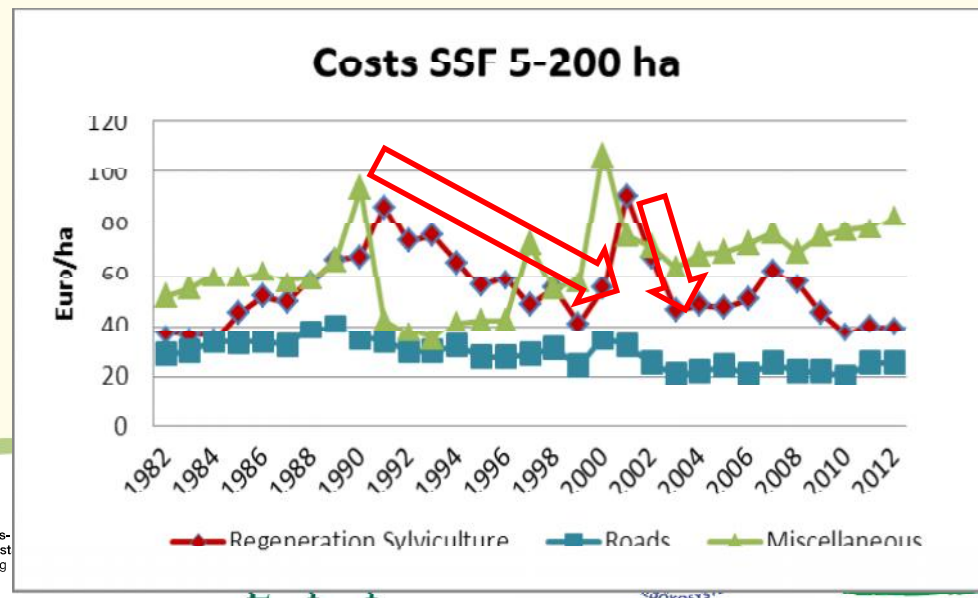
Economic Issues II



Lower costs for regeneration and its faster decrease is mainly explicable by a higher share of natural regeneration

Increasing costs after natural disturbances

However: Loss of income mostly more severe.



Long-Term Aspects of Natural disturbances III

Mio. Euro	1999	2000	2001	2002	2003
Felling volume	2,5	7,8	3,1	1,8	2,3
Harvesting cost	63,5	178,0	77,5	49,8	56,6
Other operational costs	30,4	29,7	43,5	42,8	28,6
Administrative expense	39,1	41,9	40,9	42,8	Change in Booking System

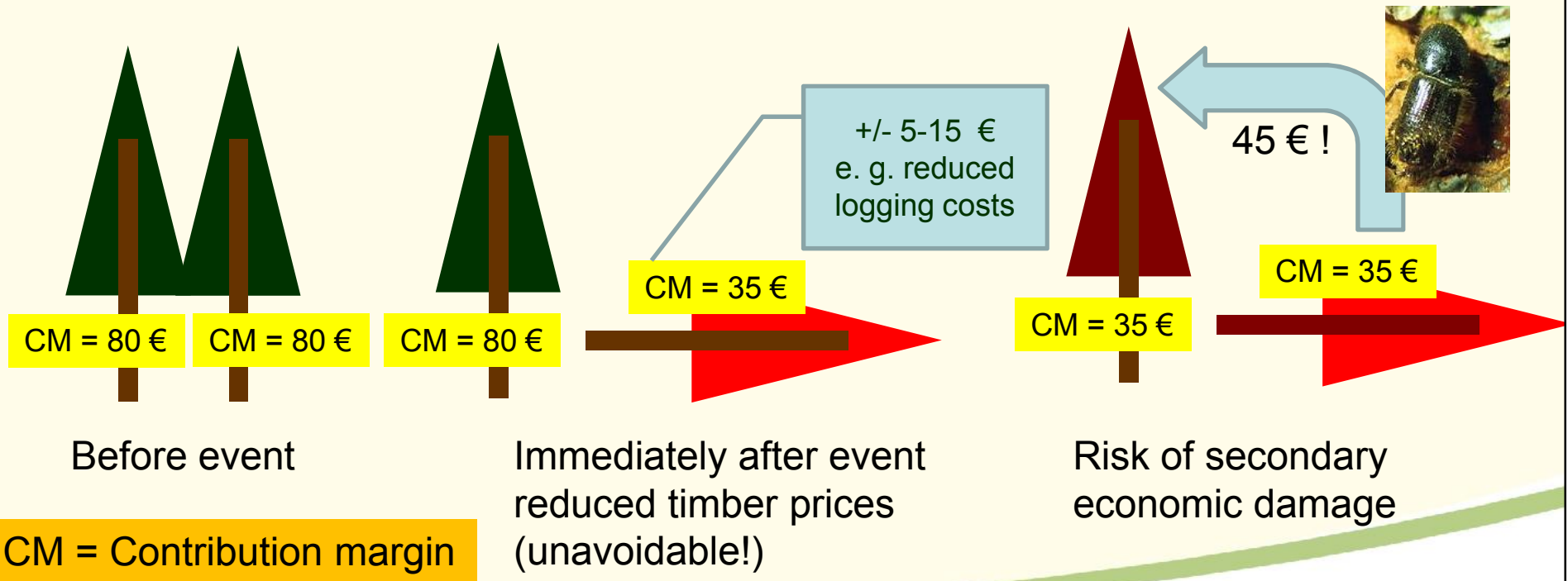
Additional costs in years 2001 and 2002 15 Mio. Euro / a
 Reforestations
 Road infrastructure
 Monitoring inspections bark beetle

Long-Term Aspects of Natural Disturbances IV

Forest Protection Issues I

The remaining possibilities to reduce the (economic) damage in the destroyed areas are limited

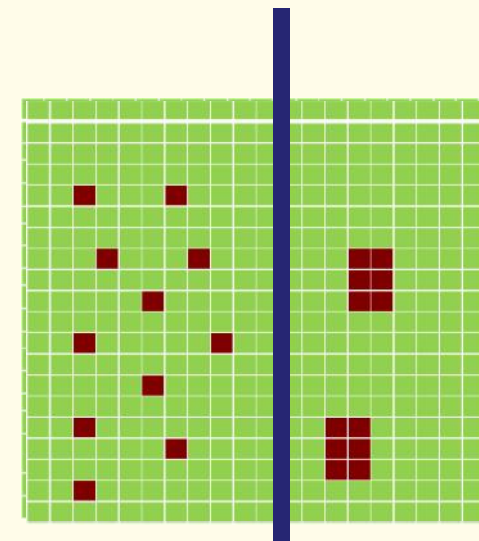
The larger (monetary) risks are secondary damages (only partially unavoidable) !!!



Long Term Aspects of Natural Disturbances V

Forest Protection Issues II

Objective	Strategies
The damaged high value hardwood has to be harvested as fast as possible conserve the value of the timber.	Valuable timber of hardwoods is harvested before the timber of conifers.
Secondary damages to standing forest stands by insects are minimised.	Storm broken trees are preferentially harvested. Scattered damaged trees are processed before large storm areas. Broken trees are preferably processed. Ongoing control of live-conserved forest stands for insect attacks. The harvesting strategy is adapted to the actual situation of forest protection.



Directly damaged area

12

12

Secondarily affected area

81

28

Small-Scale Forestry Issues

Small Scale Forestry Issues I

30

Work (Operational) health and safety (OSH)

	State Forest	Private	Communal	Contractors
Volume processed	7.400.000	4.230.000	10.560.000	
Minus share contractors	2.738.000	2.749.500	3.801.600	12.900.900,00
Accidents	409	2742	953	505
Persons killed	1	17		
m ³ / accident	6694	1003	3989	25546

- Unexperienced
- Not trained
- No use of supportive machinery (e. g. excavators)
- Overestimation of one's own capabilities

- Experienced
- Trained
- High share of mechanised processing with harvesters

One of the weakest point in the whole strategy of salvation logging after storm Lothar 2000

Small-Scale Forestry Issues II

31

Beneficial role of joint salvage logging activities I

- Professional management of the disastrous situation → Mechanisation
- Bundling of the marketable timber volume → better prices (hopefully)
- Reducing the risk of accidents

Challenge: Prefinancing of the harvesting (potentially storage) costs

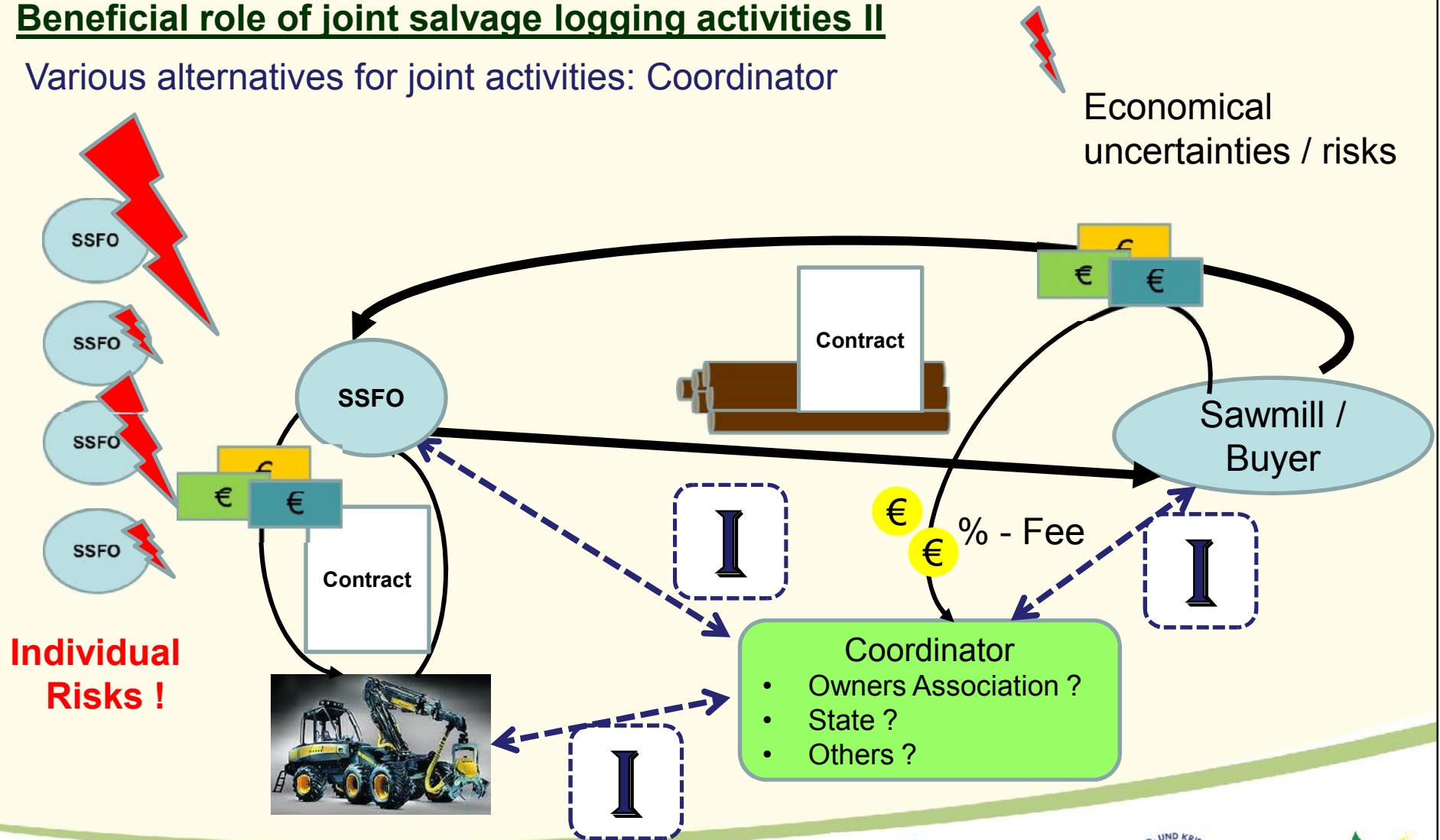
Advantages

- Prevention of unprofessional overhasty timber sales
- Help for overchallenged forest owners
- Equal treatment for all forest owners involved
- Value of timber is only determined by volume and normal timber grade, but not from devaluation due to delayed processing date
- All forest owners (state and communal can be included)
- One large owner takes the responsibility
- Participation is voluntary
- The largest partner overtakes the prefinancing of the measures (surety bond possible)
- Establishment of a board of the local & regional caring society

Small Scale Forestry Issues III

Beneficial role of joint salvage logging activities II

Various alternatives for joint activities: Coordinator



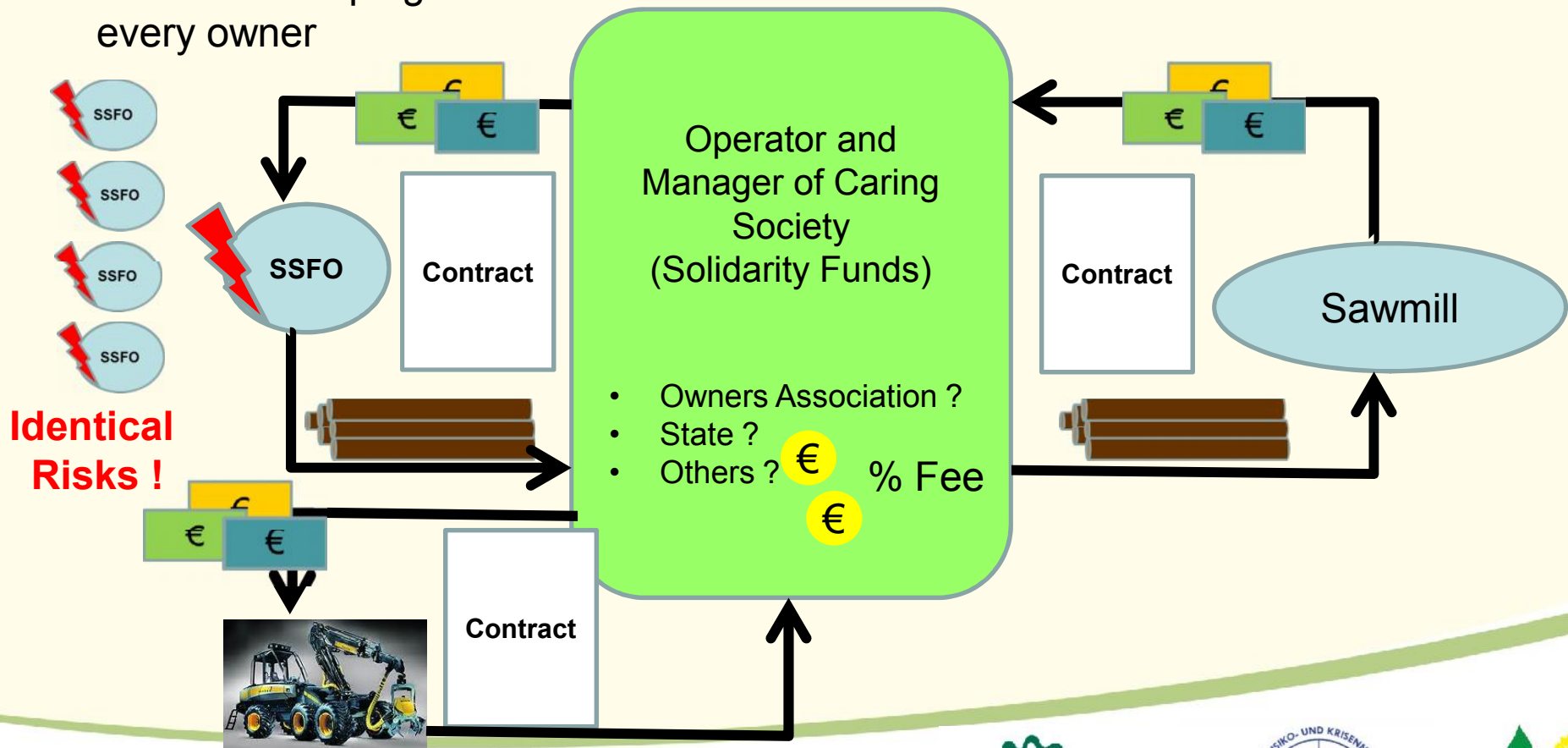
Small Scale Forestry Issues IV

Beneficial role of joint salvage logging activities III

Various alternatives for joint activities: Operator and Manager of a “Caring Society”

Average contribution margin
for whole campaign and
every owner

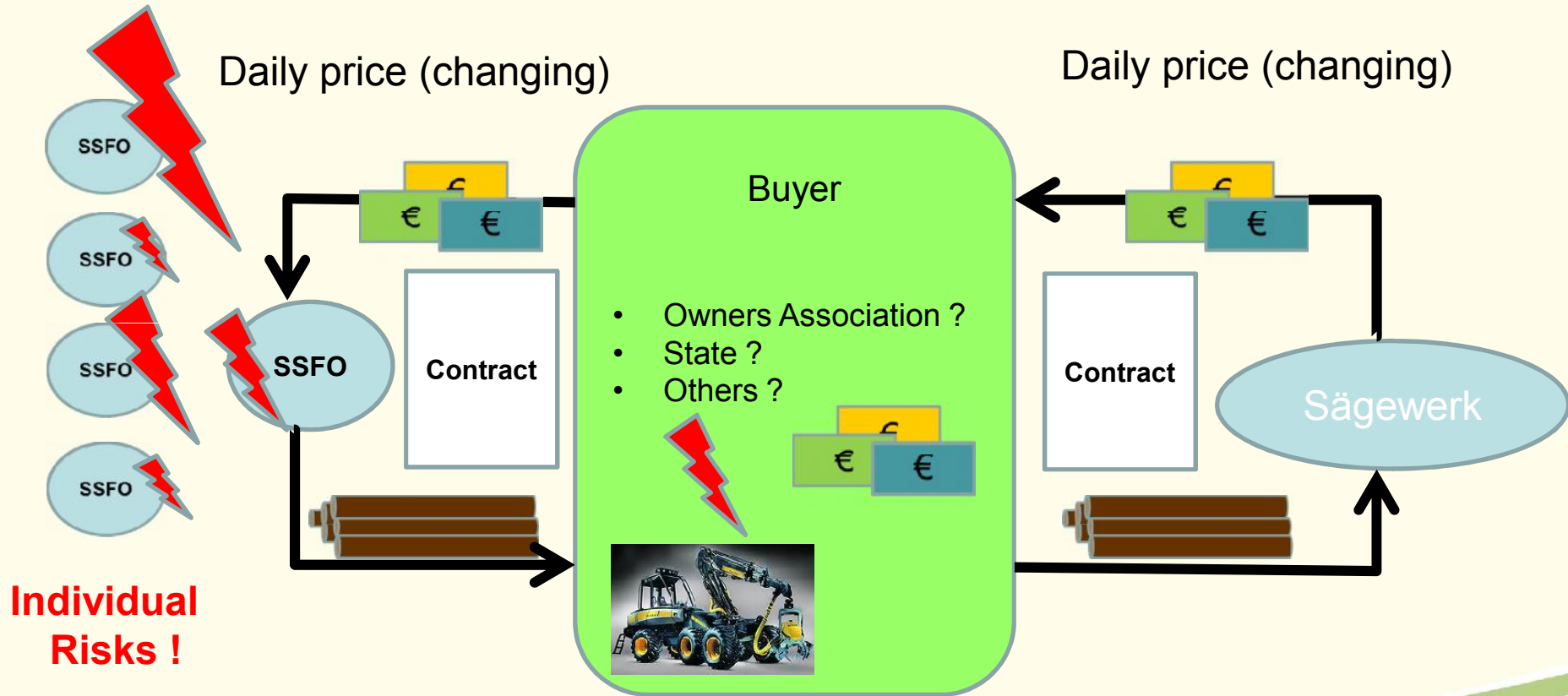
Daily price (changing)



Small Scale Forestry Issues V

Beneficial role of joint salvage logging activities IV

Various alternatives for joint activities: Buyer (transfer of ownership of timber)



Individual Risks !


Small Scale Forestry Issues V

Beneficial role of joint salvage logging activities V

Mixed models are possible (case and framework related)

Voluntariness and acceptance of the participants play a key role

Joint salvage logging activities have been successful in almost all cases.



Great efforts by the State Forest Administration and voluntary representatives from owner (and / or their associations) needed.

Similar findings in other states in 2007

Small Scale Forestry Issues VI

Support of private forests by forest administration

Private forest owners are overchallenged
They are seeking help from professionals
Opportunity to show that the State Forest Administration is needed

However:

They are dealing with their problems outside the business hours
They are too many → overload of forest staff

Risk of overload and disappointment when not every problem can be solved immediately

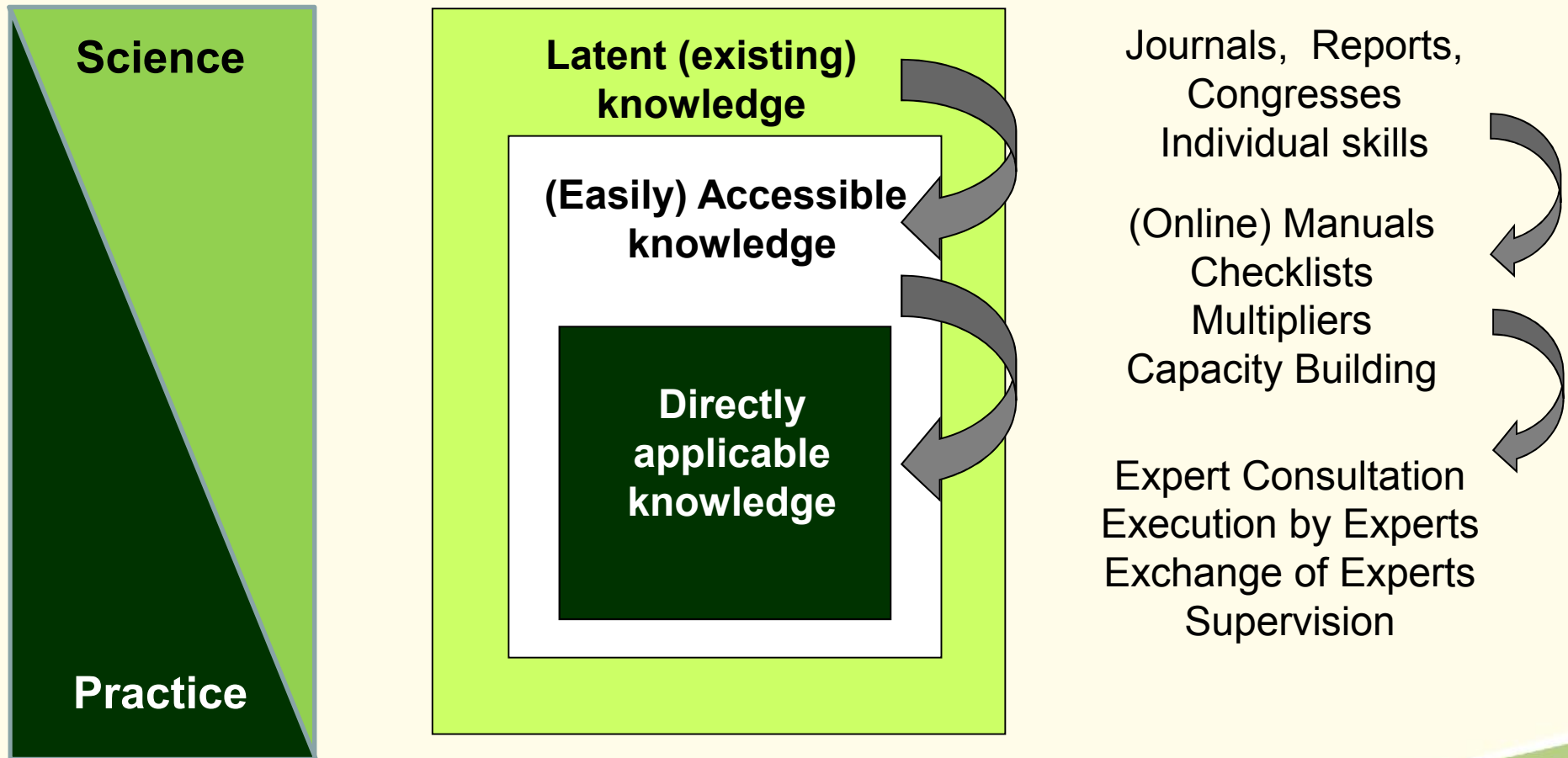
- Relevant problems** with regard to care for own staff
Heads of regional units and field foresters suffered from:
- State of exhaustion
 - Sleeplessness
 - Fear of failor



Information Policy and Strategy

Information Policy and Strategy I

Accessibility and applicability of informations



Information Policy and Strategy II

New information policy after storm "Lothar"

History:

Before 1990 almost no structured documentation → verbal communication

1990: Text Book "Fairy tales about the Storms

Vivian and Wiebke"

2000: Breaking all the rules !!!

From sectoral information policy towards case related information policy - The Storm Manual

One folder contains all !!!



2004: **Structured Textbook** Summary about experiences gathered after Lothar highly accepted, but not practical.

Starting from 2005: **Online Advisory Guide Forest Crises Management**
Focussing on directly applicable knowledge about different kinds of natural disturbances

"Forest Crises Management" Advisory Guide



Storms like "Lothar" or "Kyrill", long periods of drought, insect outbreaks, wildfires and various other factors can have devastating consequences on forests. Climate change is on everyone's lips along with predictions about an increase in extreme weather events. Exactly when and where the next extreme weather event will occur can not be foreseen, but that it will happen is certain.

After the "Lothar" storm in 1999 it was recognized that there was a huge need for practice orientated guidance on how to deal with the storm's aftermath. The Storm Handbook, prepared in 2004 and 2005, helped many forest owners deal with storm damages in subsequent years.

Due to the great demand for practice orientated knowledge, the increase in extreme weather events and the diversity of damage causing factors, the collaborative "Prevention and Management of Forest Crises" (PuMs) project was initiated in 2008.

Information Policy and Strategy III

40

This change in information policy was highly welcomed by all members of the state forest administration

One folder on the manager's desk answered most parts of the questions

The advisory guide is the largest collection of information related to natural disturbances in German → First Stop Shop

If you enter „advisory guide crisis management“ (without forest/forestal) it's position one in Google

English version is expanding, first pages in Spanish.

Open source: Further translations in other languages are welcome
Cooperation is welcome



Management by perception: Provide accessible information and a lot of people will follow your recommendations! → Today easier because of Internet

Opportunity and Offers of the Pilot Project “European Forest Risk Facility” → FRISK

European Forest Risk Facility

Start-up project

FRISK-GO project, 10/2013-03/2015, coordinated by the European Forest Institute

Why?

Prevention and Mitigation of disturbances

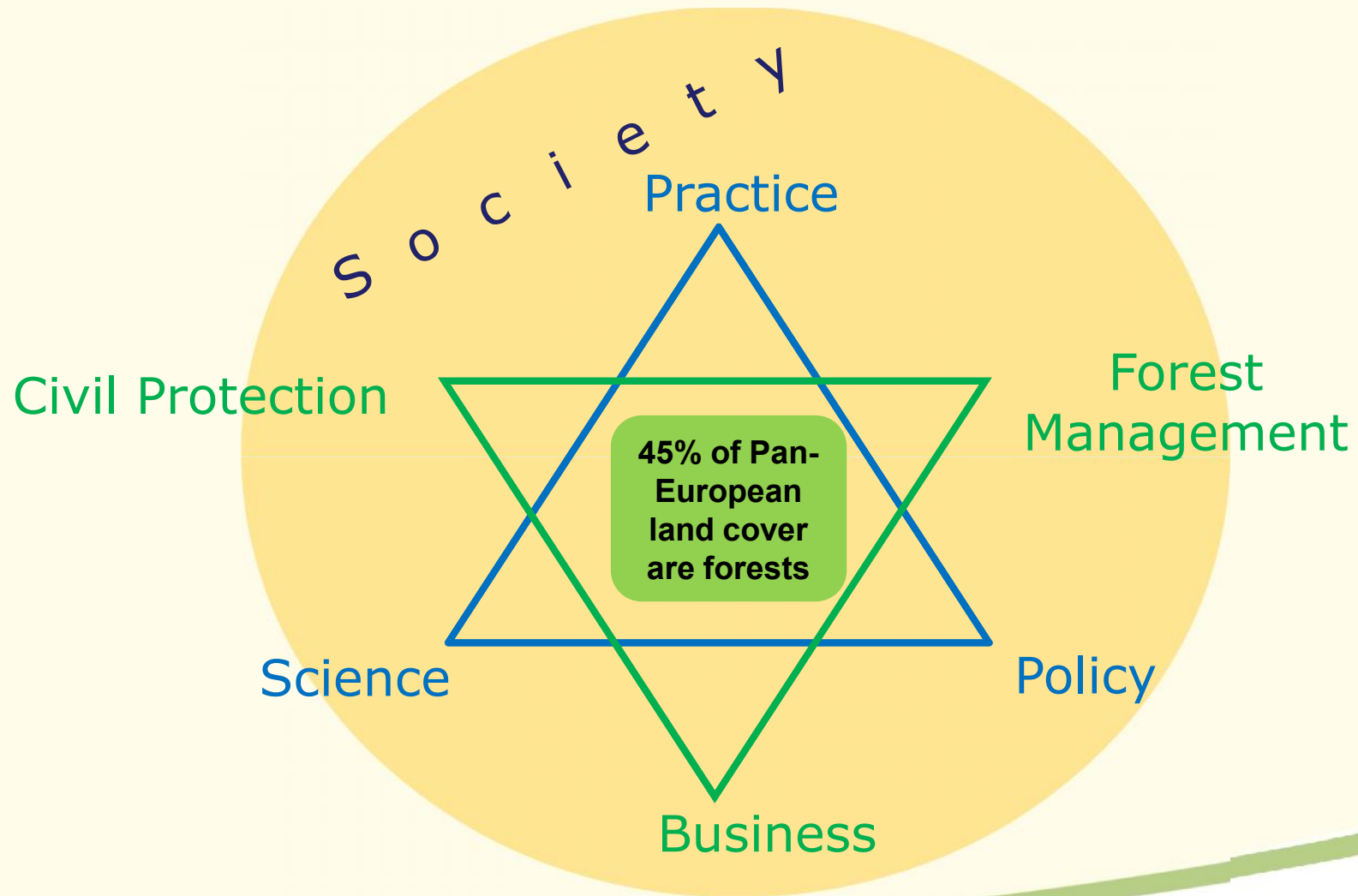
Where we are

Existing expertise needs to be coordinated

Where we want to go

A forest centered platform that cooperates with civil protection institutions, forest administrations and owners.

European Forest Risk Facility „FRISK“II



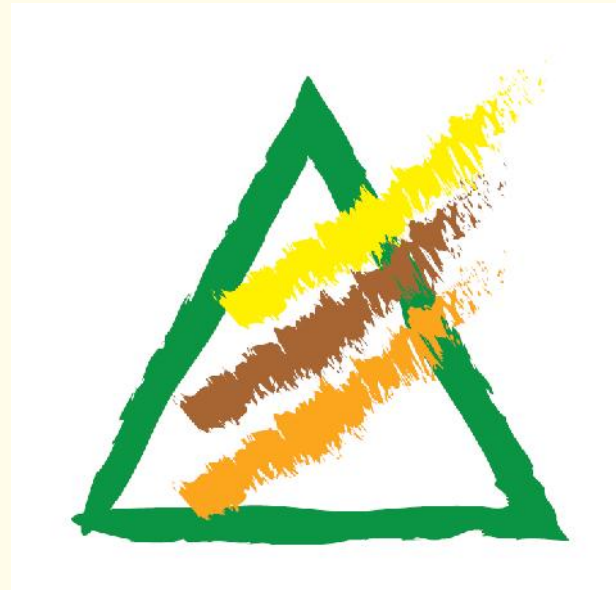
What a Risk Facility can offer

- **Providing information and knowledge**
- **Providing the link to experts**
- **Support to find funding instruments**
- **Support and coordination of Training and Exchange**
- **Support in building up liaison units**

Exchange of Experts

- **Training for risk and crisis managers**
- **8-10 people are invited to join a study tour to Southern Germany**
- **Getting inspired how others are dealing with desasters (learn from their mistakes and their solutions)**
- **Organisation has to start soon!**

FRISK-GO



<http://www.eficent.efi.int/portal/projects/frisk-go/>

Summary

47

Learn from past experiences but do not copy them
Safety first, provide training offers for salvage logging
Ask for support and information

Talk about your personal problems
Provide psychological support

Do not rush, there is mostly more time to deal with it than expected

Use machinery

Keep private forest owners out of dangerous situations in damaged stands
Joint salvage logging activities are beneficial, especially for SSFO
Subsidies can effectively support private and communal forest owners

Make information easily accessible → management by perception

Check whether you can profit from the FRISK-GO and KoNeKKTiW - Project

**Thank you very much
for your attention!**

Questions? Discussion!