



Forestry, Urban Forest and Greening Ethics and Educational Needs in the Future

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26 September 2012

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REVIEW PAPERS

Sustainable Forestry in Latvia: Building Bridges between Forest Science, Policy and Practice

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Oslejs, J. and Gamborg, Ch. 2007. Sustainable Forestry in Latvia: Building Bridges between Forest Science, Policy and Practice. *Baltic Forestry*, 13 (2): 229–236.

Abstract

In this paper we suggest and critically discuss new ways in which the gap between forest science, policy making and practice can be spanned – using the lessons from a just completed four-year Latvian-Danish project as a case for working towards better transfer of scientifically based knowledge into forestry. Forest covers nearly 50% of the Latvian total land area. Forests in Latvia contribute increasingly to the national economy, play an important amenity role and are internationally recognised as harbouring a wide array of European threatened plant and animal species, securing a high level of biodiversity. At the same time, forest legislation is in place and the forest science has been well-established in Latvia. Thus, the resource is in place, is more or less intact and, seemingly well protected in a legal sense, and has been the subject of scientific study. However, there is a severe lack of interaction between forest science and practice and policy making. In the paper, the current situation in the forestry sector and some of the underlying barriers to a successful interface between science, practitioners, decision makers and other forest professionals are characterised. A thematic analysis of the problems encountered during the project phase in relation to bridging the gap between science and policy is carried out. Finally, three main types of suggestion are given as how to improve the dialogue and knowledge link between science and practice and policy making in Latvia.

Key words: environment, forest management, Latvia, policy, science, stakeholders, sustainability

Introduction

The aim of this paper is to suggest and critically discuss ways in which the gap between forest science, policy making and practice can be spanned. Some of the underlying barriers to a successful interface are identified and the needs and interests of key forest stakeholders are examined.

Latvian forests cover nearly half of the total land area, and the forests generally possess a high structural variety – securing biodiversity. Moreover, the forests, of which most are semi-natural, are home to several species, which are endangered or threatened in Europe or in a global context (Ozols 1995). Although extensive forest legislation is in place there are no specific provisions concerning the involvement of the public in decision-making, and the current science financing system lacks initiatives to promote the extension of practical knowledge generated by research and use of this knowledge within policy making. Promoting sustainable forest management practices relies on the trans-

fer of scientific knowledge to forestry practitioners, decision makers and other forest professionals.

Moreover, in spite of a high level of the environmental and silvicultural sciences in countries in transition, such as Latvia (Baumanis 1995), it is also recognized that the implementation at more practical levels and into decision-making systems is insufficient (Lazdins 2002).

Latvia regained real independence in 1991 and a fundamental transformation of the political system implied a radical change in the institutional set-up in all sectors with changes still ongoing (Lazdins *et al.* 2005). In January 2000, the State forest sector underwent crucial administrative reorganisation, when, instead of the former integrated State Forest Service, two new major units were established and subordinated to the Ministry of Agriculture: "Līvijas Valsts Meži" (LVM, the Stock Company) and the State Forest Service (SFS). As a result, regulatory, supervisory, and normative functions of state authority were separated from managing and ownership of state forests. LVM carries out the

УСТОЙЧИВОЕ ЛЕСНОЕ ХОЗЯЙСТВО В ЛАТВИИ: УКРЕПЛЕНИЕ СВЯЗЕЙ МЕЖДУ ЛЕСНОЙ НАУКОЙ, ПОЛИТИКОЙ И ПРАКТИКОЙ

Ю. Ошлейс и Х. Гамборг

Резюме

В настоящей статье предлагаются и критически обсуждаются новые способы устранения недостатков взаимосвязи между лесной наукой, политикой и практикой, используя опыт, полученный в течении разработки латвийско-датского проекта, целью которого было разработать наилучшие способы передачи научных знаний в практику лесного хозяйства. Леса занимают около 50% территории Латвии, и удельный вес лесного хозяйства в экономике страны постоянно растет. В Латвии леса играют важную эстетическую роль, а также содержат широкий спектр видов растений и животных, которым в Европе грозит исчезновение, и тем самым обеспечивают высокий уровень биологической разнообразности. Латвийское законодательство в области леса и лесная наука развиты хорошо. Поэтому можно сказать, что в Латвии леса находятся в более или менее хорошем состоянии, хорошо защищены в юридическом смысле и являются предметом научного исследования. Однако, ощущаются серьезные недостатки во взаимодействии между наукой, практикой и принятием политических решений. В статье описывается ситуация в секторе лесного хозяйства в настоящее время и дается характеристика основным препятствиям на пути сотрудничества между исследователями, практиками, лицами, принимающими решения и другими профессионалами в области леса. Проводится тематический анализ проблем, с которыми участники проекта столкнулись, работая над устранением недостатка взаимодействия между лесной наукой и политикой в области лесного хозяйства. Предлагаются три главных способа, как улучшить диалог и обмен информацией между сферами лесной науки, практики и принятия решений в области лесного хозяйства в Латвии.

Ключевые слова: окружающая среда, лесное хозяйство, Латвия, политика, наука, заинтересованные организации и лица, долгосрочное сбалансированное развитие



OUTLINE

1. **Problem** – what is the issue at hand?
2. **Analysis** – why this situation?
3. **Discussion** – what to do?
4. **Educational needs** – how to teach?



1. PROBLEM





DOING THE RIGHT THING?

WHAT IS THE RIGHT OR THE BEST MANAGEMENT/LAND USE?

WHO DECIDES?

HOW DO WE MAKE IT HAPPEN?



DEPENDS ON HOW DO WE LOOK AT THE NATURAL ENVIRONMENT – OUR ETHICAL OUTLOOK



As a resource?

■ As something unique?



NATURE AS A RESOURCE



NATURE AS UNIQUE

Hill went to university, then dropped out and was doing well in restaurant management. She moved out for California. She had always been used to dealing with strangers because her father had never stopped in one place long enough for the family to make friends.

Hill laughs at the suggestion that her childhood was perfect training for life on a platform, up a tree and under siege by rough-hewn men in plaid shirts. She agrees, but looks shocked when I suggest that it also sounds as if she might have inherited her father's nature.

"One day, I was talking to my dad from Luna, and he suddenly said that my voice had changed," she says. "And then he said he could tell from my voice that I had found what I had been looking for, that my soul was content.

"He told me that all his life he had been on a quest to fulfil his soul, and had never found the answer, and that now he was coming out to join me in the forest."

Amazingly, that is what he did. So, as Hill finds herself

**'In my tree
I learnt
how magical
and precious
life is'**

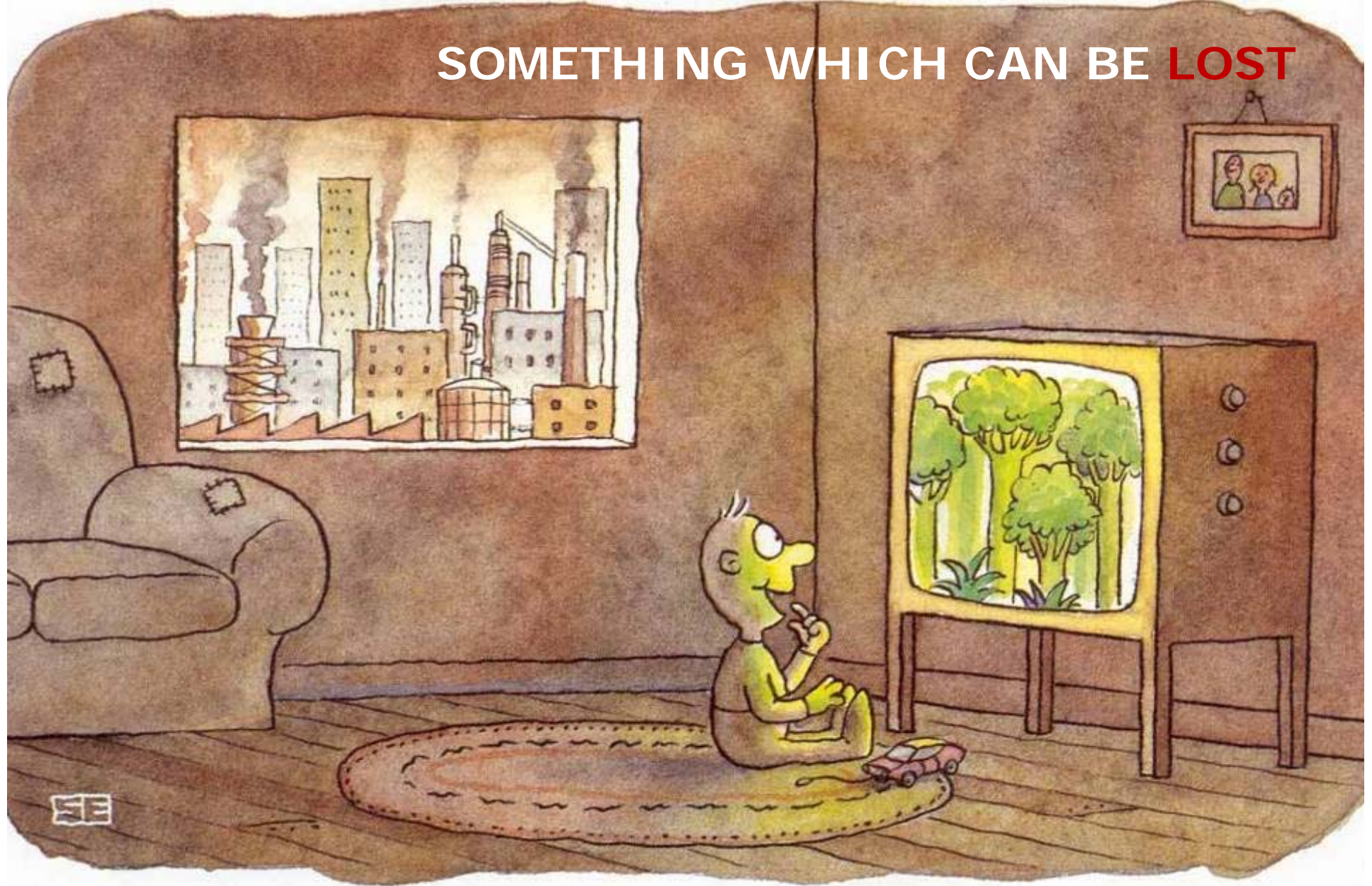
preaching "a different truth" in the city, her father has disappeared into the redwood forests to join the environmentalists.

"Our entire family gave up everything so my father could spread the message of love and truth, and I guess that in a way I am doing the

SOMETHING WHICH CAN **CONVERTED**



SOMETHING WHICH CAN BE **LOST**



2. ANALYSIS – WHY THIS SITUATION?



ETHICS OF FORESTRY

As we think – so we manage

Concerns fundamental views:

- View of what nature (a forest) is
- View of what our role in nature is



'GROUP A' AND 'GROUP B' FORESTERS

A: Trees like cabbages

”[G]roup A is quite content to grow trees like cabbages, with cellulose as the basic forest commodity. It feels no inhibition against violence; its ideology is agronomic.”

B: Trees as natural environment

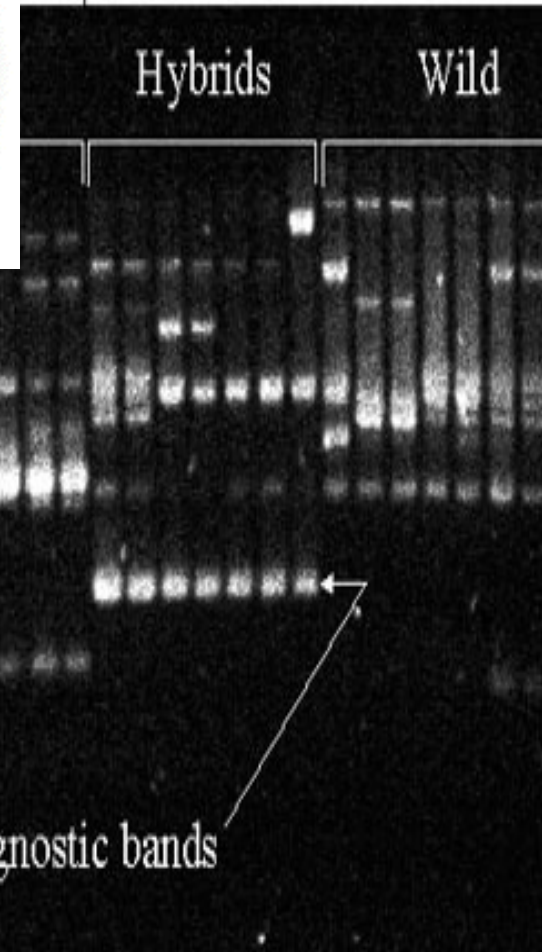
”Group B, on the other hand, sees forestry as fundamentally different from agronomy because it employs natural species and manages a natural environment rather than creating an artificial one. Group B prefers natural reproduction on principle ... It worries about a whole series of secondary forest functions: wildlife, recreation, watersheds, wilderness areas. To my mind, Group B feels the stirrings of an ecological conscience.”

Leopold, A. 1949. *A Sand County Almanac and sketches here and there*





UBC105



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gm poplars china

Søg

[Avanceret søgning](#)
[Indstillinger](#)Søg: på nettet sider på dansk sider fra Danmark**Nettet**

Søgeresultaterne 1 - 10 ud af ca. 878 for gm poplars china. (0,04 sel

Tip: Det er lettere at trykke på enter, i stedet for at klikke på "Google-søgning".

[GM Trees Lost in China's Forests](#)

GM Trees Lost in China's Forests. GM poplars released and unregulated are hard to trace, GM trees are a potential ecological disaster and should be banned. ...

www.i-sis.org.uk/GMTGL.php - 33k - 15 okt 2005 - [Cached](#) - [Lignende sider](#)

[Chris Lang](#)

Ewald's photographs of the 33 hectare GM poplar plantation at Huairou show ... "Poplar trees are so widely planted in northern China that pollen and seed ...

chrislang.blogspot.com/2004_08_27_chrislang_archive.html - 15k - [Cached](#) - [Lignende sider](#)

[rhizosophy: Frankentrees in China](#)

insect resistant GM poplars have now been planted in China. Also two years ago, China launched the world's largest tree planting project. ...

truffula.net/~e/rhizosophy/archives/000031.html - 458k - [Cached](#) - [Lignende sider](#)

[China: Genetically modified madness](#)

Well over one million insect resistant GM poplars have now been planted in China. ...

"Poplar trees are so widely planted in northern China that pollen and ...

www.wrm.org.uy/bulletin/85/China.html - 13k - [Cached](#) - [Lignende sider](#)

[WRM Bulletin N° 85 - Asia / August 2004](#)

However, China has no regulations specifically covering GM trees. ... A GM poplar tree looks much the same as any other poplar tree. ...

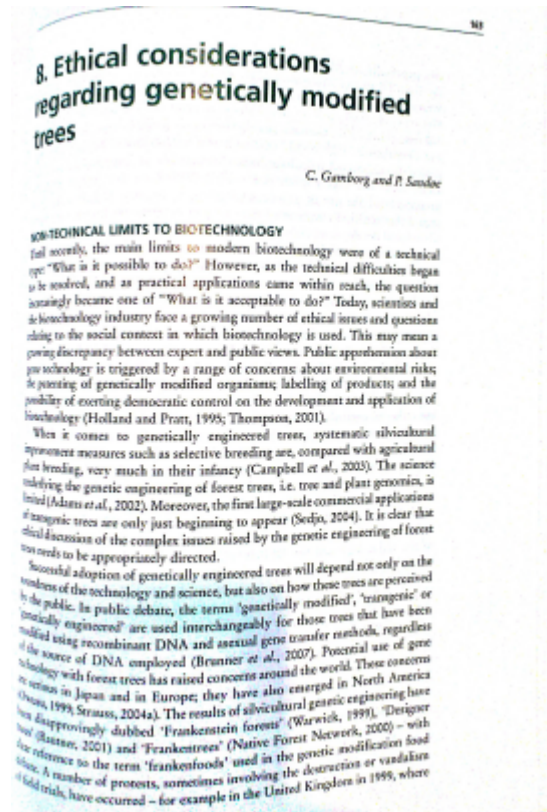
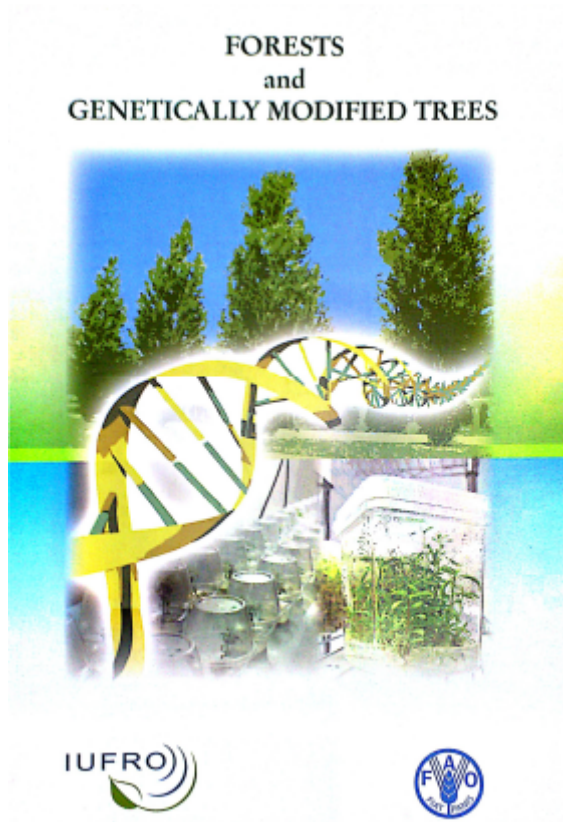
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Sponsorerede links

[Made-in-China.com](#)

China products, manufacturers exporters, factories directory.

[Made-in-China.com](#)



Juletræer sviner naturen til

Der bruges så meget sprøjtegift til at gøre juletræerne pæne, at fauna, flora og grundvand er truet. Folk bør finde et økologisk juletræ, mener Danmarks Naturfredningsforening. Branchen selv siger, at den har gjort meget for at løse problemet.

Julepatuljen



Af Thom
Hundsba

»Juletræet på besøg hilser på os fra eg og bøg«, synger vi, når vi danser om juletræet. Men det er ikke kun de naturlige slægtninge i skoven, juletræet skul-



se fra. Der kommer også en skovbunden at genetablere



ge vege-
forsvin-
iger bio-
fra for-
n opfor-
ne til at
juletræ-
l 50 pct.
dt mere
ønne:
stor for-
nventio-
hård be-
og man

skal huske på, at et juletræ er et luksusprodukt. Juletræet symboliserer naturen, og der er noget absurd i, at vi så køber noget, der skader naturen kraftigt.

Foreningens bekymring skyldes ikke mindst, at juletræsproduktionen i Danmark er vokset markant de seneste år. I 2011 blev det anslået, at der blev brugt omkring 100 tons sprøjtegift til at gøre juletræerne pæne. Det er en meget høj mængde, og det betyder, at juletræer er et miljøproblem. Derfor foreslår foreningen, at man skal vælge et økologisk juletræ, der er dyrket uden brug af pesticider.

mark til verdens næststørste producent af juletræer. Og branchen tjener over en milliard kroner på eksporten af de ensartede træer.

Juletræsbranchen erkender, at der er et problem med brugen af pesticider omkring

danske juletræsproducenter ikke kunne konkurrere på eksportmarkedet», siger seniorforsker Lars Bo Pedersen, fra Skov & Landskab på Landbohøjskolen.

På Danmarks og Grønlands Geologiske Undersøgelse (GEUS) undersøger Pedersen, om pesticider fra juletræsproduktionen lækker ned i grundvandet. En undersøgelse viser, at af de små vandboringer ligger ved skove, er det rimeligt at formode, at det kommer fra juletræsproduktion», siger han.

thomas.hundsbaek@pol

TION side 6



VIEW OF FORESTS

Table 2. Characteristics traditionally ascribed to foresters and environmentalists

Foresters (as resource conservationists)	Environmentalists (as nature conservationists)
Imperialists Materialists Reductionistic Control, order	Arcadians Idealists Holistic Freedom
Standard attitude: A forest is a natural resource and should accordingly be under some form of resource management	Standard attitude: a forest is a particular kind of nature and should be left unmanaged (but in some cases, management for nature conservation is acceptable)

Source: based on Peterken (1996).



VIEW OF FORESTRY

Table 1. Three 'archetypes' of forest management and their objectives and concerns

'Archetype'	Management objectives	Basis of objectives	Dominant concerns
Production forest	To yield an economically feasible or optimal quantity of timber and non-timber forest products	(Economic) rationality and utility	Healthy, resistant stands of trees High volume production High wood quality
Park forest	To provide recreational opportunities	Aesthetic, romantic and amenity values	Adequate opportunities connected with aesthetic ideals and demand
(Semi-)natural forest	To maintain structures and processes characteristic of the forest in a particular region	Ecological considerations	Deadwood Key habitats Biodiversity



EUROBAROMETER 2008

Special EUROBAROMETER 295 "ATTITUDES OF EUROPEAN CITIZENS TOWARDS THE ENVIRONMENT"

" ... [But] Europeans are not likely to take actions that are directly related to their lifestyles and consumption habits such as using their cars less or purchasing green products ... Europeans rarely see their consumption habits as an environmental concern."

"Therefore the main challenge revealed by this survey appears to be how to ...encourage them to act on their environmental convictions"



CHANGES IN FORESTRY AGENDA

“Past”	“Now”
Hunting, multiple use	Biodiversity
“Rational” forestry	“Good health”
Secured supply	Recreation
Efficient production and increased productivity	Environmental protection (e.g. clean water, CO ₂ sequestration)
Profitability	Environmental valuation
Sustained yield	Sustainability



Sustainability

**Sustainable
development**

**Sustained
yield**



Consideration
of biodiversity, working
environment, animal
welfare, food safety
farmer profitability, ...

Distribution
between generations
and between rich and poor

Preservation
of species and ecosystems

Wise use
of resources

Procurement
of goods

Time

WHAT IS CHARACTERISTIC OF THESE FOREST RELATED CONTROVERSIES?

- **Different degrees of knowledge about effects and consequences**
- **Different opinions about what is a hazard**
- **Different conceptions of what is "true"/"good"/"right"/"genuine" nature**
- **Different preferences – interests - values**
- ...



Top 10 environmental concerns for teachers

No.	Item	Score	Ethic
1	Future generations	6,18	Altruistic
2	Children	5,94	Altruistic
3	My children/my future children	5,82	Altruistic
4	The global ecosystem	5,82	Ecocentric
5	Humans	5,71	Altruistic
6	People in developing countries	5,47	Altruistic
7	Global biodiversity	5,47	Ecocentric
8	My family	5,41	Altruistic
9	Nature as a whole	5,38	Ecocentric
10	Forests and woodlands	5,35	Ecocentric



Top 10 environmental concerns for EME students 2012

No.	Item	Score	Ethic
1	The global ecosystem	6.61	Ecocentric
2	Nature as a whole	6.61	Ecocentric
3	Planet earth	6.48	Ecocentric
4	Global biodiversity	6.44	Ecocentric
5	Future generations	6.31	Altruistic
6	My children/my future children	6.07	Altruistic
7	Lakes and rivers	6.05	Ecocentric
8	Forests and woodlands	6.01	Ecocentric
9	Plants	5.97	Biocentric
10	Children	5.91	Altruistic



Human-centered items

Non-human-centered items

<p><u>Egoistic</u> Myself My future My health My survival My quality of life My well-being My happiness My pleasure</p>	<p><u>Biocentric</u> Mammals Birds Fish Amphibians and reptiles Invertebrates Plants Fungi Bacteria</p>
<p><u>Altruistic</u> My children/my future children My family My friends My community Humans Children People in developing countries Future generations</p>	<p><u>Ecocentric</u> Forests and woodlands Grasslands and deserts Lakes and rivers Mountains and valleys The global ecosystem Global biodiversity Nature as a whole Planet earth</p>





ENVIRONMENTALISM SINCE 1945

MAKING OF THE CONTEMPORARY WORLD

GARY HAQ AND ALISTAIR PAUL

"Call it conservation, the environment, ecological balance, or what you will, it is a cause more permanent, more far-reaching, than any issue of the era – Vietnam and Black Power included"

R. Bendiner, 'Man – The Most Endangered Species', *New York Times*, Editorial, 20 October 1969 – cited in *Environmentalism since 1945*



ETHICS AND VALUES

Behaviour

What we do

Attitudes

What we think (more specific and more numerous than values)

Values

Enduring (core) beliefs, personally held – underlying reason for attitudes

Ethics

Critically examining current attitudes and values (consistency, defensibility, applicability)

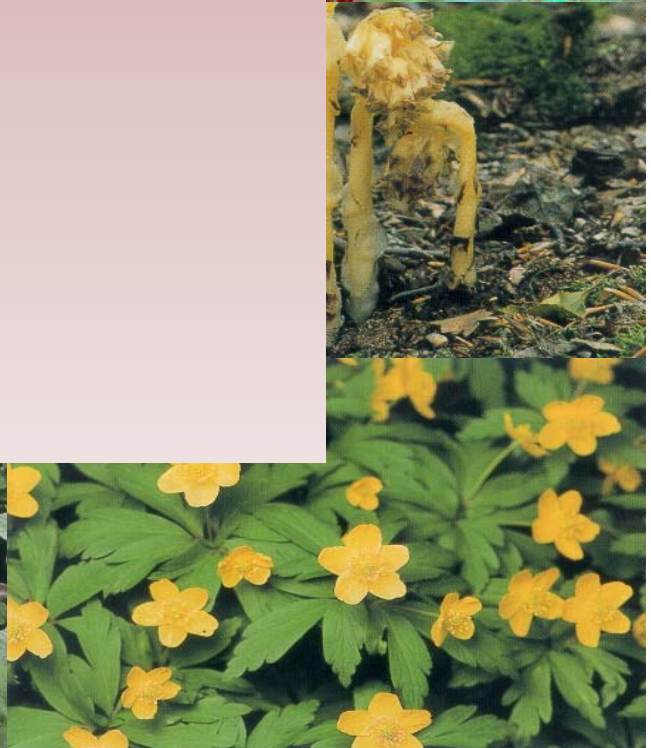
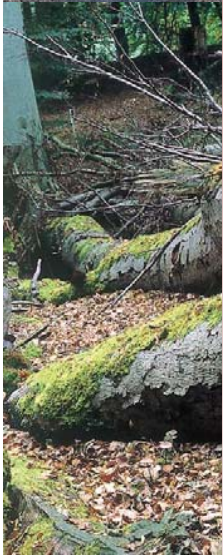


3. DISCUSSION – WHAT TO DO?





- Agenda is expanding
- Society is becoming more pluralistic
- Situation where aims and functions lead to dilemmas and potential conflict





DOING THE RIGHT THING?

WHAT IS THE RIGHT OR THE BEST MANAGEMENT/LAND USE?

WHO DECIDES?

HOW DO WE MAKE IT HAPPEN?

- Professional resource managers need to be able to deal with:
 - How to handle conflicts?
 - How to handle stakeholders?



3. EDUCATIONAL NEEDS – HOW TO TEACH?



**Example 1 – dedicated courses:
ENVIRONMENTAL CONFLICT MANAGEMENT**

7.5 ECTS, MSc course

84 students

Approx. 50% international students

Course Coordinators

Jens Emborg

Christian Gamborg

<http://www.life.ku.dk/sitecore/content/Units/Study/Kurser/400023.aspx>



TWO KEY UNDERLYING ASSUMPTIONS

1. **Conflict is inevitable**
2. **Conflict is irresolvable, but manageable**

(Daniels & Walker, Working through environmental conflict, p. 16)



CONFLICT MANAGEMENT

- **Conflict management is “the generation and implementation of tangible improvements in a conflict situation**
[It] ... can be thought of as ‘making progress’ ... on the three fundamental dimensions of a conflict situation: substantive, procedural and relationship”
(Daniels & Walker, 2001: 156)
- **Teaching based on combined knowledge from natural and social sciences**
- **Teaching addresses the ‘human dimension’ in conflict situations**





Faculty of Science

GETTING STARTED: COURSE OVERVIEW, **CONFLICT BASICS**, PROJECT LAUNCH, NEGOTIATION

CONFLICT **ASSESSMENT**: STAKEHOLDERS, INTERESTS, POWER, PROGRESS TRIANGLE

CONFLICT **ASSESSMENT**: STRATEGIC CHOICES, COMPLEXITY, SYSTEMS THINKING

CONFLICT **UNDERSTANDING**: COMMUNICATION AND TRUST

CONFLICT **HANDLING**: INTRACTABILITY, (RE)FRAMING AND CONFLICT DYNAMICS

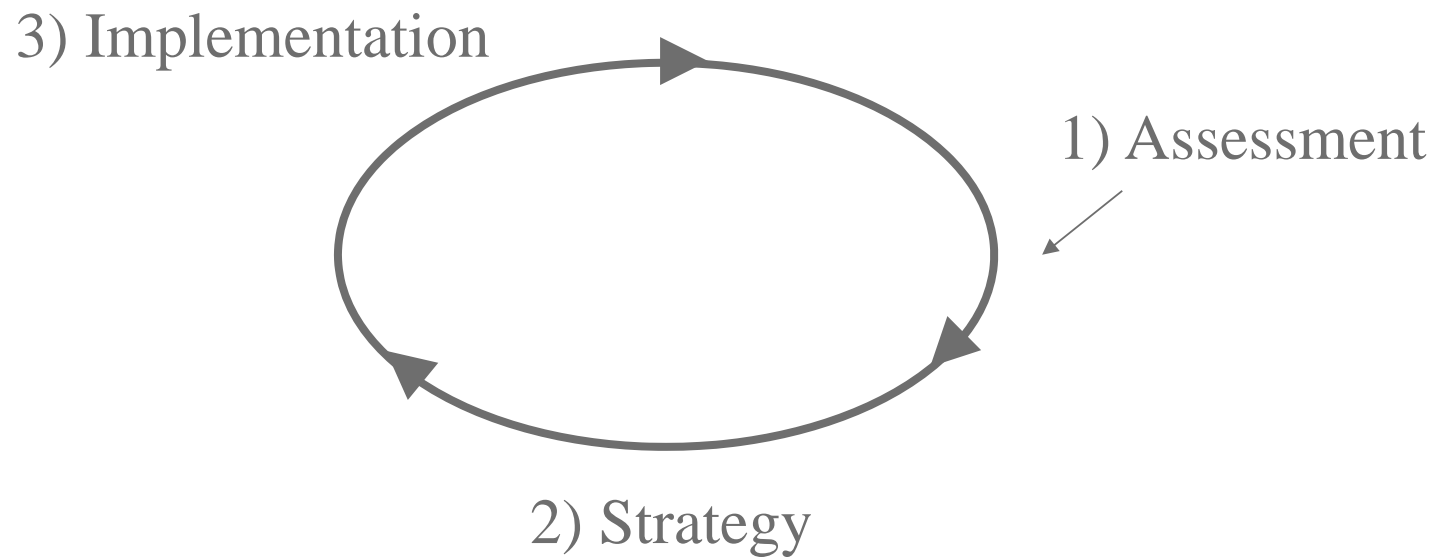
CONFLICT **MANAGEMENT STRATEGY**: COOPERATION AND COMPETION, NEGOTIATION

CONFLICT **MANAGEMENT STRATEGY**: DIALOGUE AND MUTUAL LEARNING

CONFLICT **PROCESS DESIGN AND IMPLEMENTATION**: COLLABORATIVE LEARNING APPROACH

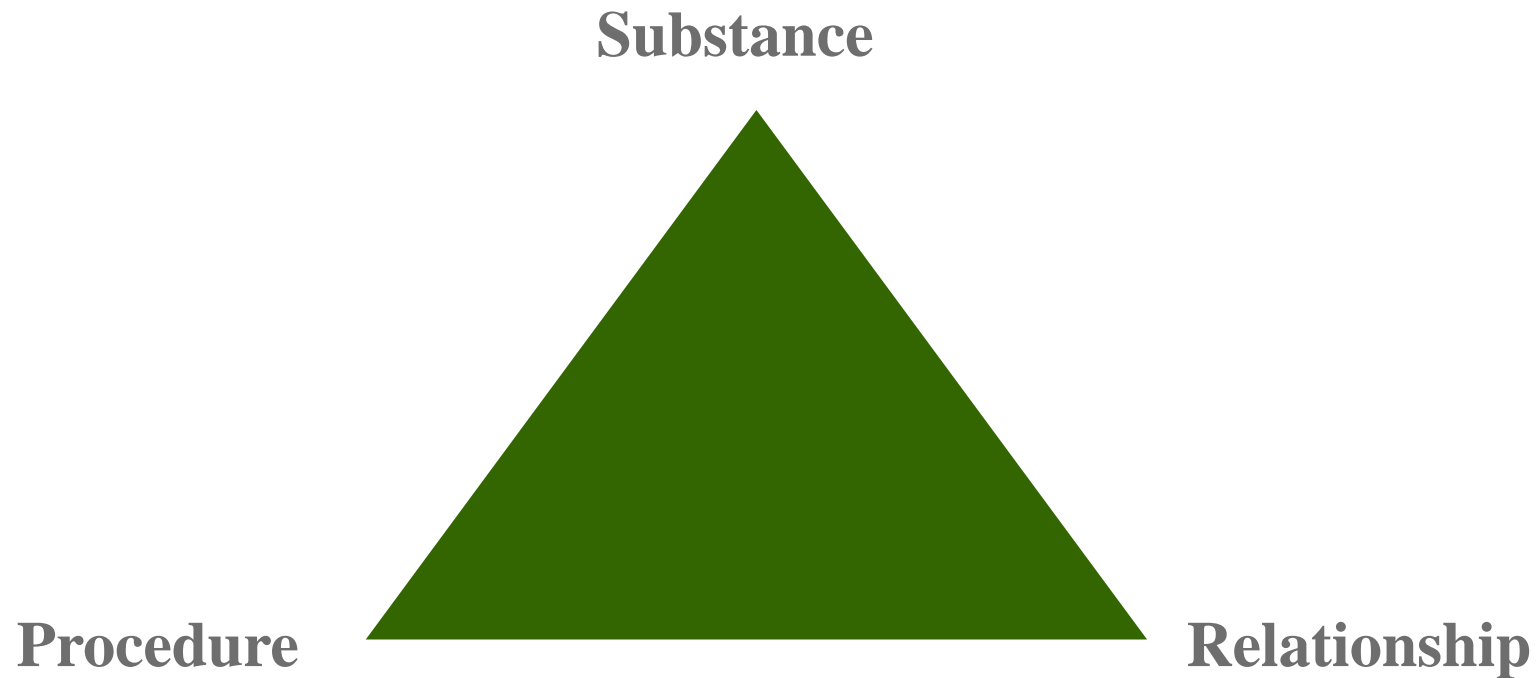
THE CONFLICT SITUATION

- Competent conflict management begins with a thorough appraisal of the conflict situation



WHAT IS THE CONFLICT ABOUT – TO WHOM?

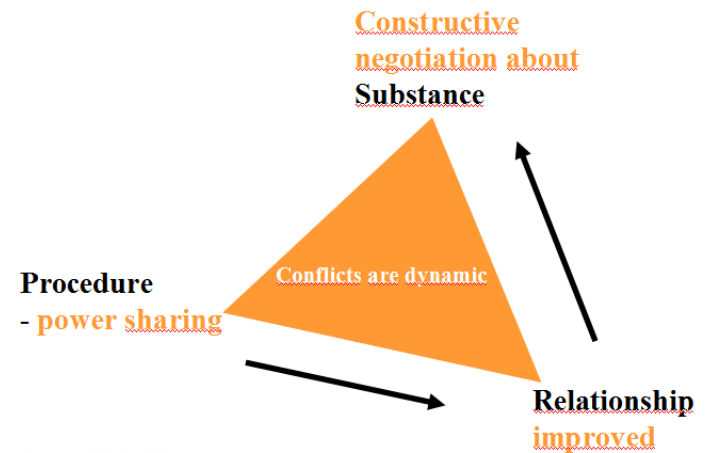
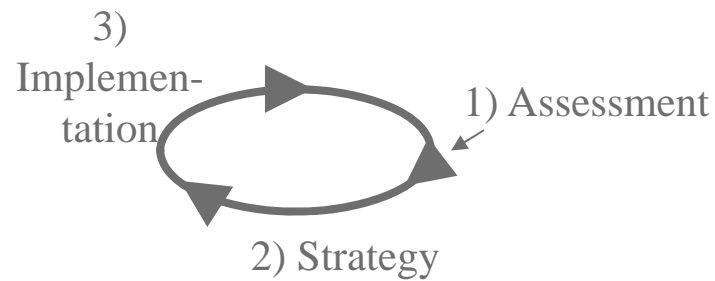
- THE PROGRESS TRIANGLE



APPLYING THEORY AND TOOLS ON OWN CASE WORK

**Case:
Conflict
situation**

**Case:
Conflict
management** **Collaborative
learning**



**Example 2 – integration into existing (traditional) courses:
STAKEHOLDER ANALYSIS IN MSC COURSE URBAN FORESTRY AND URBAN GREENING**

In a ideal world, all stakeholders would be completely satisfied

...but different issues, different objectives



3926.htm

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 Kontakt

UGENS ALBUM PÅ P4

DR RADIO P4

Ush: "Stuck"
 HØR P4
 Vælg andet distrikt

P4 i parcellen
 P4 København sætter i uge 37 fokus på 1950'erne og ikke mindst de forstæder, der for alvor fik sin udformning i perioden. Vi graver ned i de gamle visioner, ser nærmere på dagens virkelighed og indsamler personlige oplevelser. Og så flytter vi hjemmefra!
 Læs mere

P4 Københavns nyhedsbrev
 Her kan du til- og framelde dig P4 Københavns nyhedsbrev, der udkommer alle hverdage efter klokken 9.00. Nyhedsbrevet er gratis og indeholder et udsnit af nyhederne og links til vores historier.
 Læs mere

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At sætte farlige søm op i skoven er en overtrædelse af straffelovens § 252 om i grov kådhed at udsætte andre for fare.

Skrevet af: [Andreas Østergaard](#)

Slut med skarpe søm i skovbunden

24. sep. 2012 18.19 Nyheder

En ny og farlig skovvækst er heldigvis forsvundet fra at Hareskoven igen: Skarpe søm.

For et par uger siden fandt Naturstyrelsen søm, der stak op af trærødderne rundt omkring på skovens stier. Sømmene var sat op af en ukendt mand i protest mod mountainbike-ryttere. Han havde klippet det flade hoved af sømmene for at punktere deres dæk, så han kunne få fred.

Men efter at historien fik opmærksomhed fra medierne, er der ikke blevet hamret flere søm i skovbunden.

- Det kan være, at gerningsmanden har fået kolde fødder, siger skovridder Kim Søderlund til lokalavisen.dk.

Og det er der god grund til. Sømmene risikerede nemlig ikke kun at give mountainbikerytterne flade hjul.

- Der er meget større sandsynlighed for, at en kondiløber, et barn eller et dyr træder på et af sømmene og kommer alvorligt til skade, siger Kim Søderlund.

SEND ELLER ANBEFAL

Facebook Email
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 Messenger Gmail
 Flere muligheder...

LÆS OGSÅ

» Naturstyrelsen advarer: Søm i skovbunden kan sprede sig
 » Farlige søm i Hareskoven

TEACHING ANALYSIS OF AND INVOLVEMENT WITH STAKEHOLDERS

Government



Governance

Expert



Public

Consensus



Conflict



OUTCOME OF ANALYSIS OF STAKEHOLDERS

We can teach professional resource managers and UFUG planners to do it for:

1. **Empirical** reasons: Discover patterns of interactions
2. **Analytical** reasons: Improve interventions
3. **Managerial** reasons: Tool in policy making and to predict conflict



”... Range of tools for the identification and description of stakeholders on their basis of their attributes, interrelationships, and interests related to a given issue or resource”

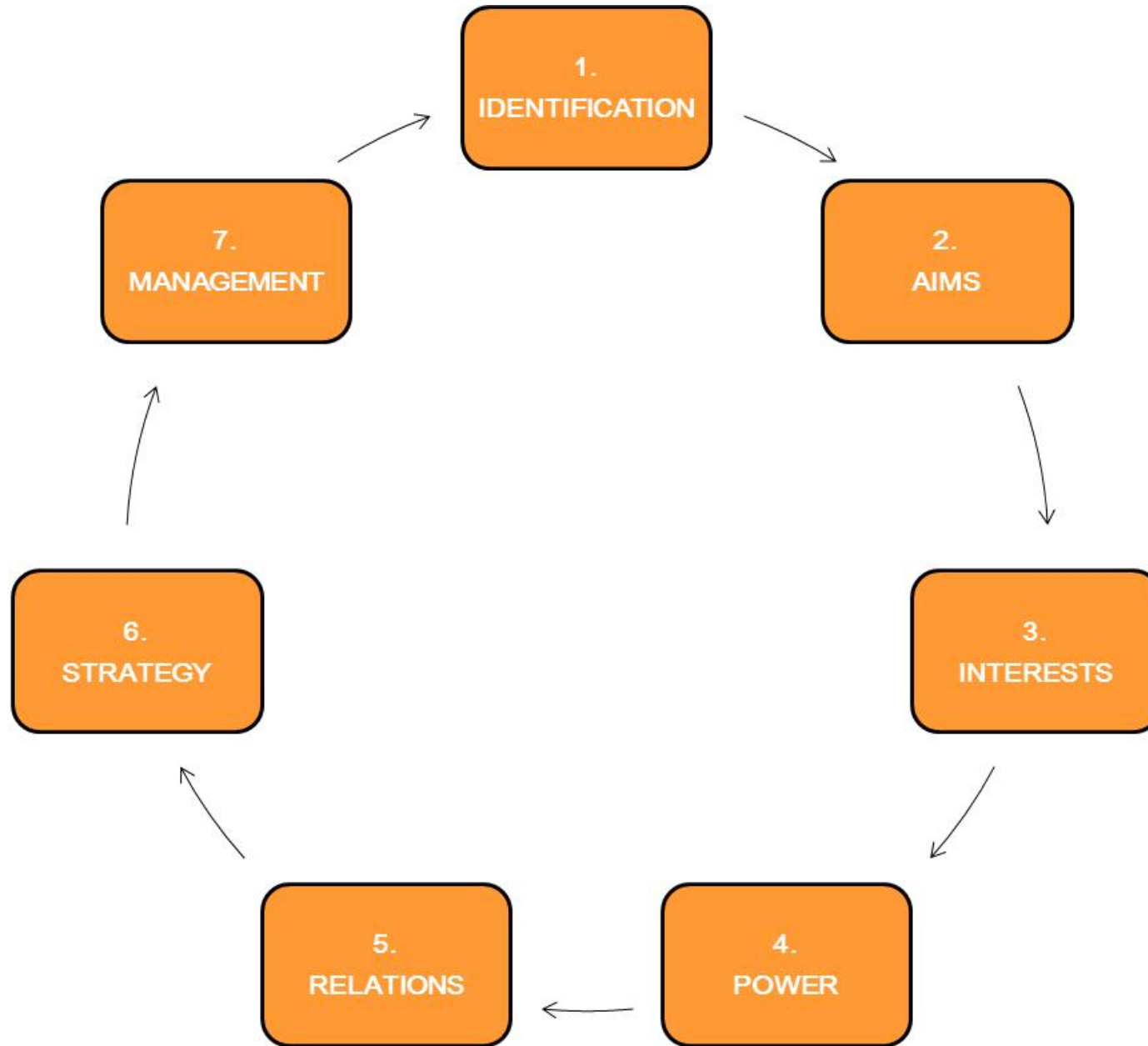
(Ramirez, R. 1999. Stakeholder analysis and conflict management. In: D. Buckles (ed.) *Cultivating Peace Conflict and Collaboration in Natural Resource Management*. International Development Research Centre/The World Bank, Ottawa/Washington)



”It is an approach for understanding a system and changes in it, by identifying key actors or stakeholders and assessing their respective interests in that system. It has been developed in response to the challenge of multiple objectives, and particularly the search for efficient, equitable and environmental sustainable development strategies”

Grimble, R. & Wellard, K. 1997. Stakeholder methodologies in natural resource management: a review of principles, contexts, experiences and opportunities. *Agricultural Systems* 55: 173-193





MACRO AND MICRO LEVEL

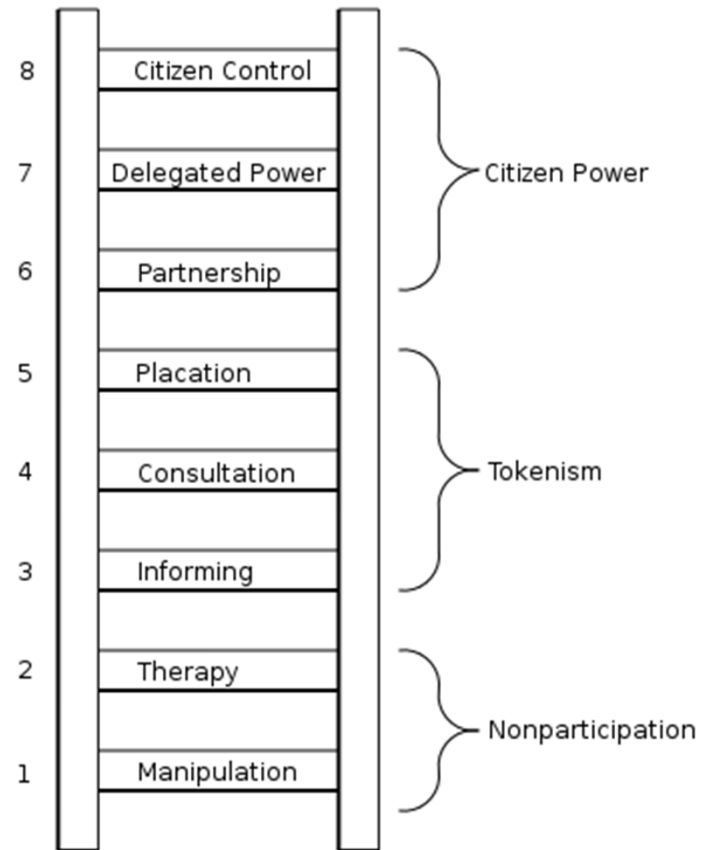
TABLE 1

A Typology of Tree Resource Stakeholders on a Macro-Micro Continuum

	<i>Institutional level</i>	<i>Examples of stakeholders</i>	<i>Issues of environmental interest</i>
<p>MACRO</p> <p>↑</p> <p>↓</p> <p>MICRO</p>	Global and international	International agencies Foreign governments Environmental lobbies Future generations	Biodiversity conservation Climatic regulation Global resource base
	National	National governments Macro planners Urban pressure groups NGOs	Timber extraction Tourism development Resource and catchment protection
	Regional	Forest departments Regional authorities Downstream communities	Forest productivity Water supply protection Soil loss and degradation
	Local off-site	Downstream communities Logging companies and sawmills Local officials	Protected water supply Access to timber supply Conflict avoidance
	Local on-site	Forest dwellers Forest-fringe farmers Livestock keepers Cottage industry Women fuel collectors	Land for cultivation Timber and non-timber forest products Grazing and fodder Cultural sites

Source: Grimble *et al.* (1994).

"LADDER OF PARTICIPATION"



■ Arnstein, S. R. 1969. "A ladder of citizen participation,"
Journal of the American Institute of Planners 35(4): 216-224





Stakeholder Engagement

Once full consultation had taken place, stakeholder engagement was key to retain the many various groups that had been involved in the consultation stage.

Workshops and training events followed to maintain the stakeholders in the project and to continue to reach diverse ages, backgrounds, and new audiences. Getting people involved through education and awareness raising was important to retain the level of initial participation.

Some of the ways in which groups were involved and engaged:

- Posters & leaflets
- Workshops and training events
- Conferences & open days
- Practical conservation task days
- Individual meeting with local groups
- Press releases in newspapers and local radio
- Public walks & talks
- Attendance at local fairs
- Presentations to groups



SUM UP

- **Pronounced shift in Europe and North America**
from resource conservation to nature conservation for scenic, recreational and cultural benefits
- **Growing number of forest stakeholders**
All are interested in doing "the right thing"
- **Leads to conflicts**
- **Professional natural resource managers**
 - have the responsibility for the long-term care of the land
 - need to:
 - be able to understand shifts,
 - handle conflicts and
 - enter dialogue
 - **Teaching/courses in conflict management, communication and ethical skills increasingly important**



Select articles

- Gamborg, C., Palmer, C. & Sandøe, P. 2012. Ethics of wildlife management and conservation: What should we try to protect? *Nature Education*. Accepted for publication
- Gamborg, C. & Sandøe, P. 2010. Ethical considerations of genetically modified trees. In: *Forests and genetically modified trees*. Rome: FAO, pp. 163-176.
- Oslejs, J. & Gamborg, C. 2007. Sustainable forestry in Latvia: Building bridges between forest science, policy and practice. *Baltic Forestry* 13(2): 229-236.
- Gamborg, C. and Sandøe, P. 2005. Applying the notion of sustainability – dilemmas and the need for dialogue. In: Holm, S. and Gunning, J. (eds.) *Ethics, Law & Society*. Hants: Ashgate, pp. 123-130.
- Gamborg, C. & Larsen, J.B. 2005. Towards more sustainable forestry? The ethics of close-to-nature forestry. *Silva Carelica* 49: 55-64.
- Gamborg, C. & Larsen, J.B. 2003. 'Back to nature' – a sustainable future for forestry? *Forest Ecology and Management* 179: 559-571.
- Gamborg, C. 2002. The acceptability of forest management practices: An analysis of ethical accounting and the ethical matrix. *Forest Policy and Economics* 4: 175-186.

