



## Green Forest Jobs

Exploring opportunities and increasing the capacity of UNECE member States

17-18 September 2018 Geneva, Switzerland

Green Forest Jobs – Addressing challenges related to the forest sector employment

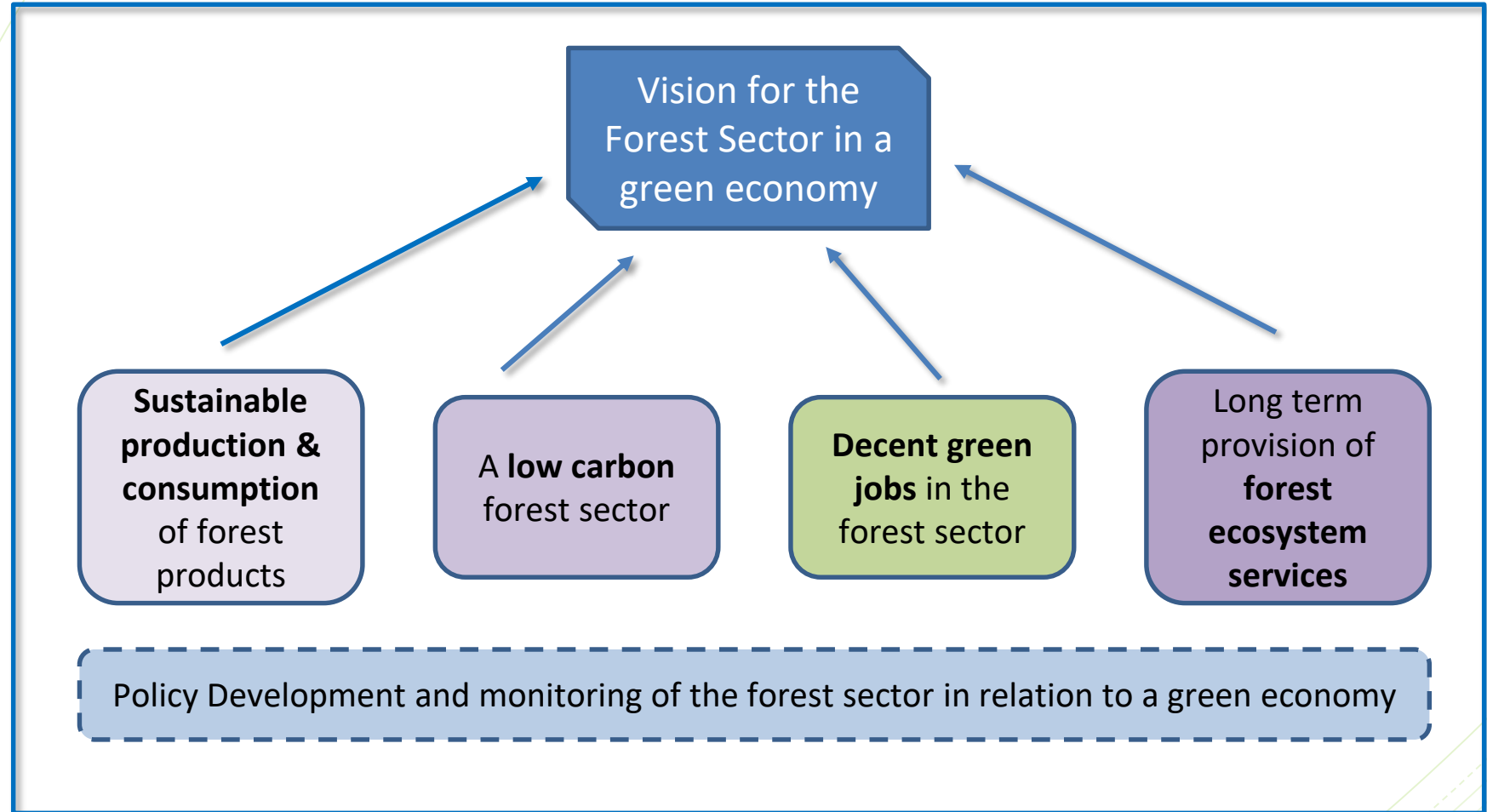
Andreas Bernasconi



# Rovaniemi Action Plan

for the Forest Sector in a Green Economy

## FORESTS



# ECE/FAO Team of Specialist on Green Jobs in the Forest Sector

## FORESTS

- **Task:** «Advise and support ... on employment-related issues such as: jobs, required competencies, education and training for the forest sector in the context of the green economy.»
- **Activities:** ...
  - ... identify and describe forest workforce-related trends //
  - ... analyse green jobs potential //
  - ... identify present and future skill requirements
  - ...

## Green Jobs in the Forest Sector



# Trends in the forest sector

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**Reported employment of  
traditional forestry jobs**



- Forest sector employment decreased throughout the ECE-regions by 21% from 2000 – 2010 (*UNECE and FAO 2015*)
- The contribution of the forest sector to GDP (gross domestic product) decreased from 1.2% to 0.8% from 2000 – 2011 (374 Bill. \$ to 286 Bill. \$) in ECE (*UNECE and FAO 2015*)
- The number of forest-related public employees reported in 2014 is around 14% lower than that reported in 2010. (*FOREST EUROPE 2015*)

# Towards a green economy

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**Estimated Potential of  
green economy in  
related sectors**



- Over the period 2002-2011, employment in the environmental goods and service sectors in the EU-28 increased by 40% from 3.0 to 4.2. This includes a growth of 20% during the recession years *European Commission (2014)*
- Further green jobs will be created in the future. (*European Commission 2014*).
- The importance of forests for recreation, cultural values and energy production is increasing (*FOREST EUROPE, UNECE and FAO 2011*).

# Forest Sector Outlook: Trends and challenges

and their implications on Forest jobs

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### Environment & SFM

- ↑ **Climate Change**
- ↑ Biodiversity, habitats
- ↑ Damage (Fire, Insects)
- ↑ Neobiota, dangerous pest organisms
- ↓ Forest Ownerships; Fusion of entities
- ? Regulations, Political Agendas
- ? ...

### Society

- ? Preferences life style fashion
- ↑ Demographic development
- ↑ **Urbanization**
- ↑ Recreation, Health, Forest Tourism, Remoteness
- ? ...

### Economy

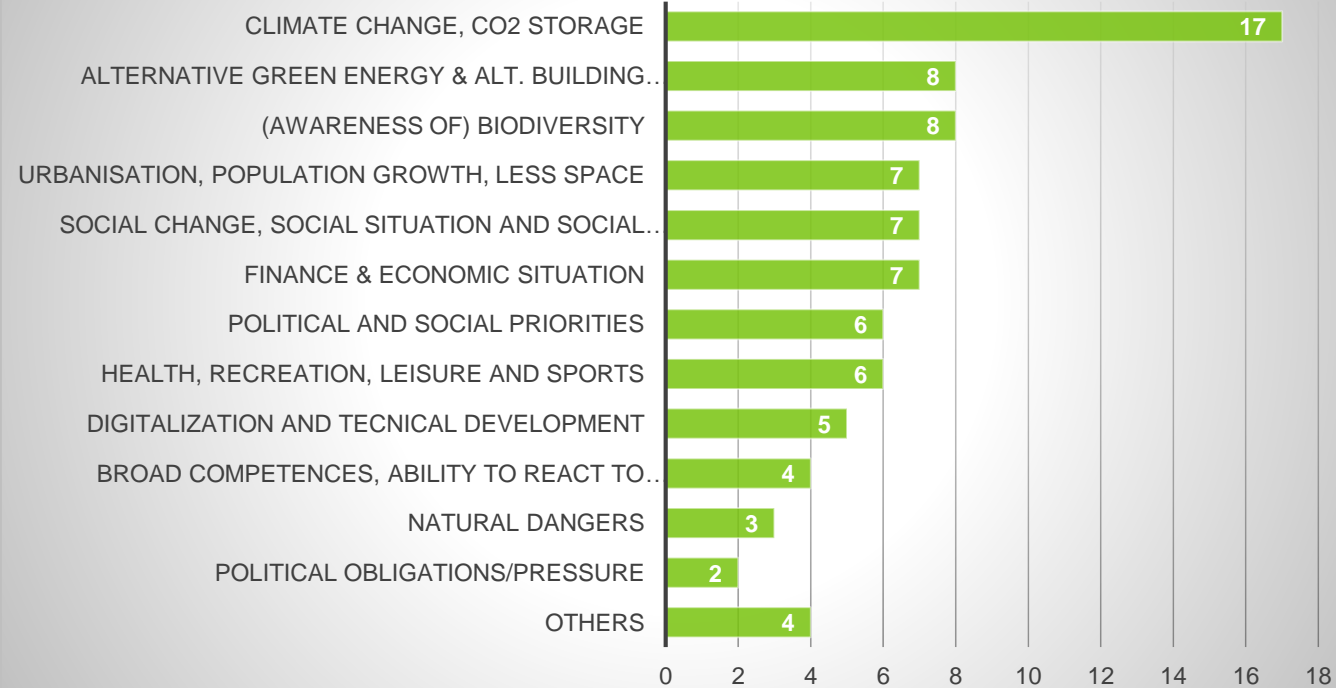
- ? ECE/World Economy
- ↓ **New Technologies; Industry 4.0**
- ↓ Digitization, Automation
- ↑ Bio-Economy
- ↑ Energy consumption
- ? Employment of elderly workforce
- ? Working Conditions
- ? Migration



# Estimation of factors and driving forces

## FORESTS

### Factors and driving forces



# Questions arising

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## FORESTS

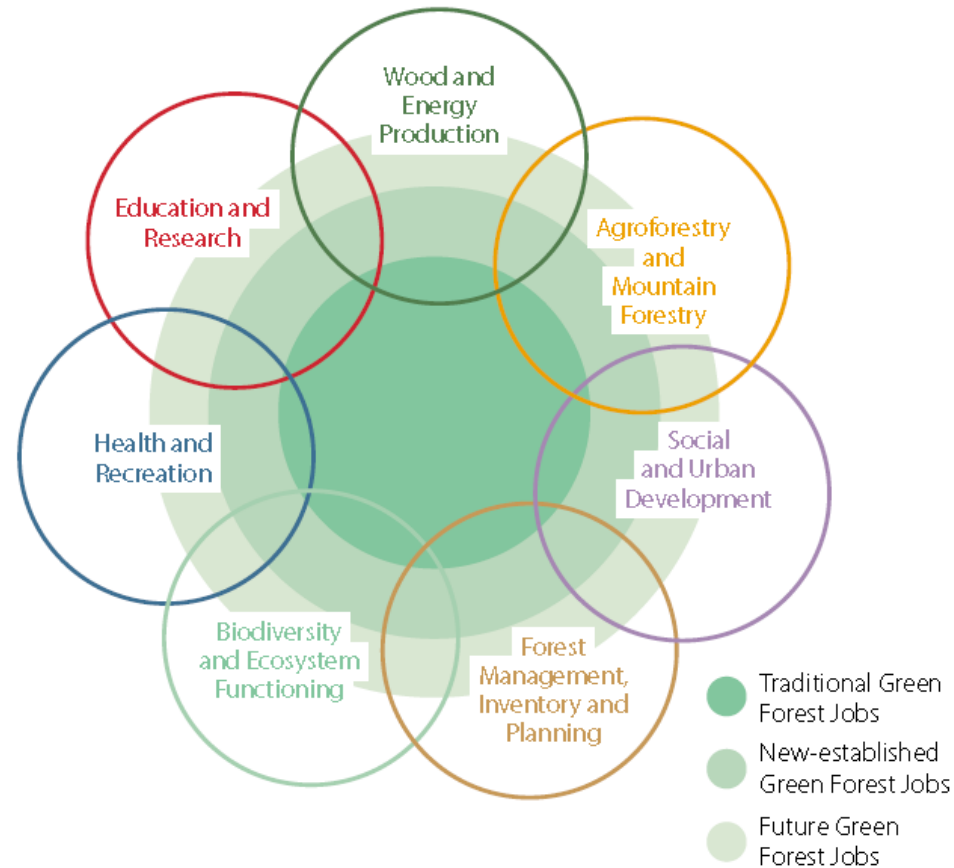
### Some crucial questions so far ...

- Will there be fewer, but more crucial workers in forestry? Or will there be even more workers with a broader field of activity?
- How will the technological change impact forest work?
- What will be future competencies and skills needed?
- How can skilled professionals be recruited and what are the implications on education?
- ...

# Green forest jobs: proposed outline

## FORESTS

FIGURE 1 The outline of green forest jobs proposed by the study



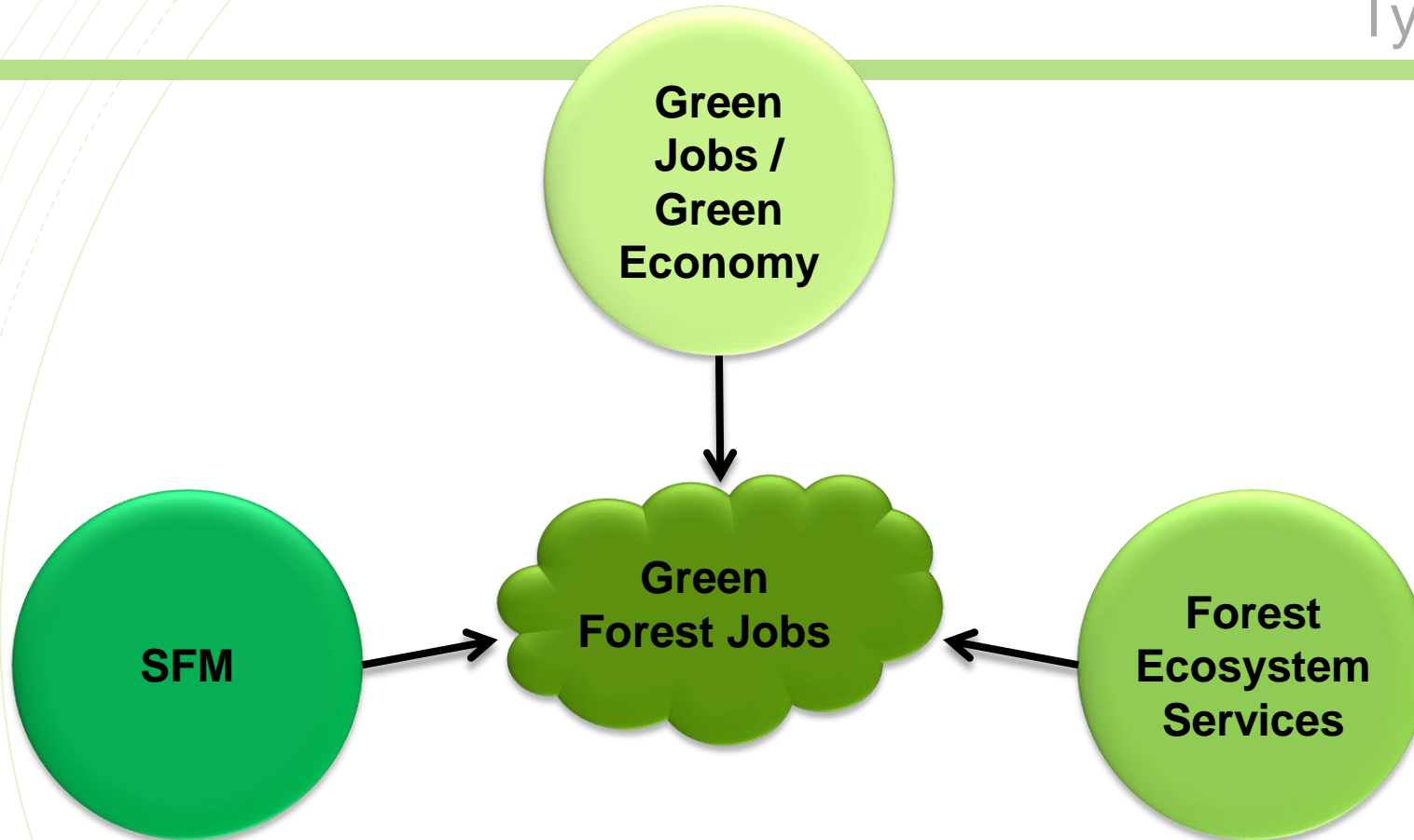
## 7 thematic areas

- traditional / current Green forest jobs
- current non-traditional Green forest jobs
- new Green forest jobs

# 3 concepts as baseline

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# Ecosystem Cascade

after Spangenberg et al. 2014

## FORESTS

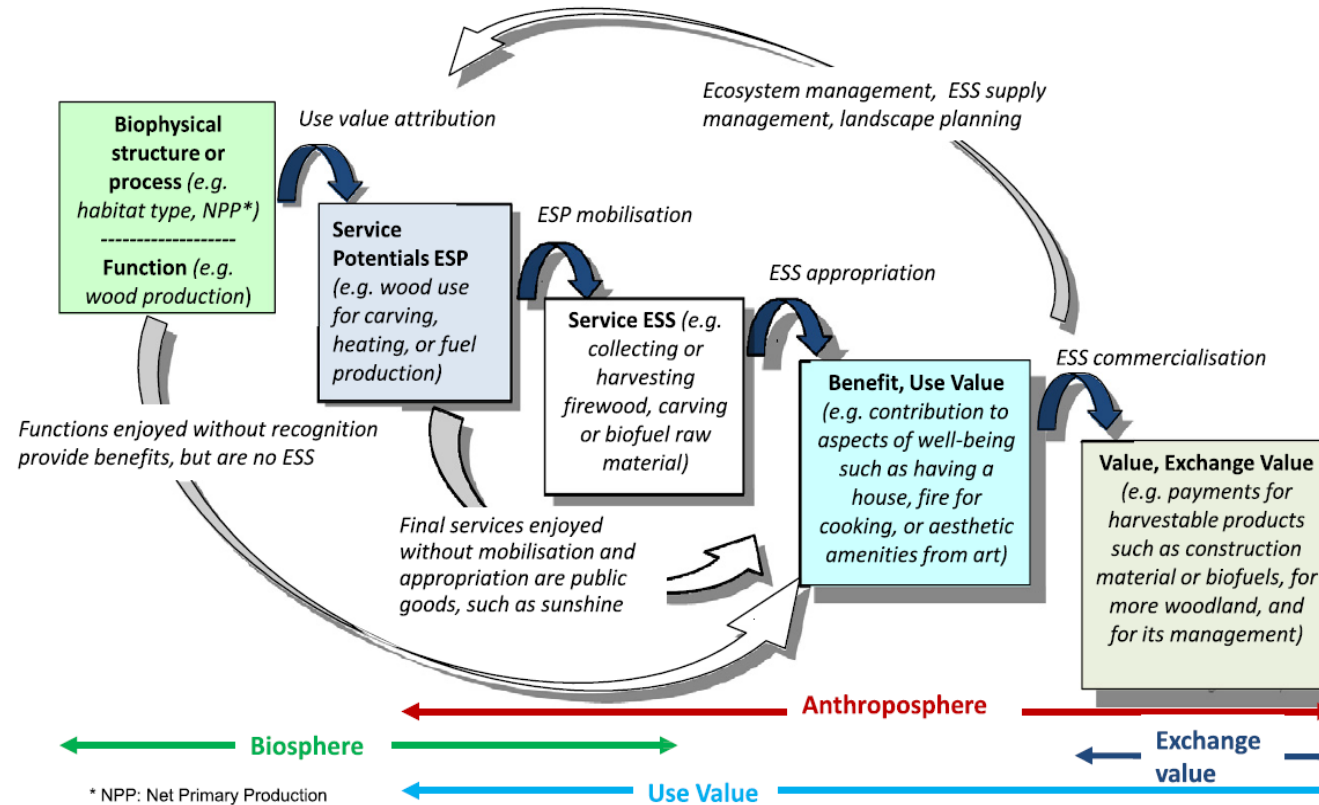


Fig. 3. Different flows exist between the ecosphere and the anthroposphere, not all of them ecosystem services as described here. Beneficial functions not recognised as such are no ESS, and final services without human co-production, usually providing public goods, are a different kind of ecosystem services. Within the anthroposphere the scheme allows locating the domains exchange value and use value (in classical terminology), and their overlap.

# What is a Green Forest Job?!

## FORESTS

### A green forest job ...

- ... complies with the principles of Sustainable Forest Management (SFM),
- ... contributes to the green economy,
- ... and is involved in the value chain of forest products and/or in the performance of forest services.

*Nothing is more empowering than having a job.*



# 19 Fields of Activity

Proposed outline

## FORESTS



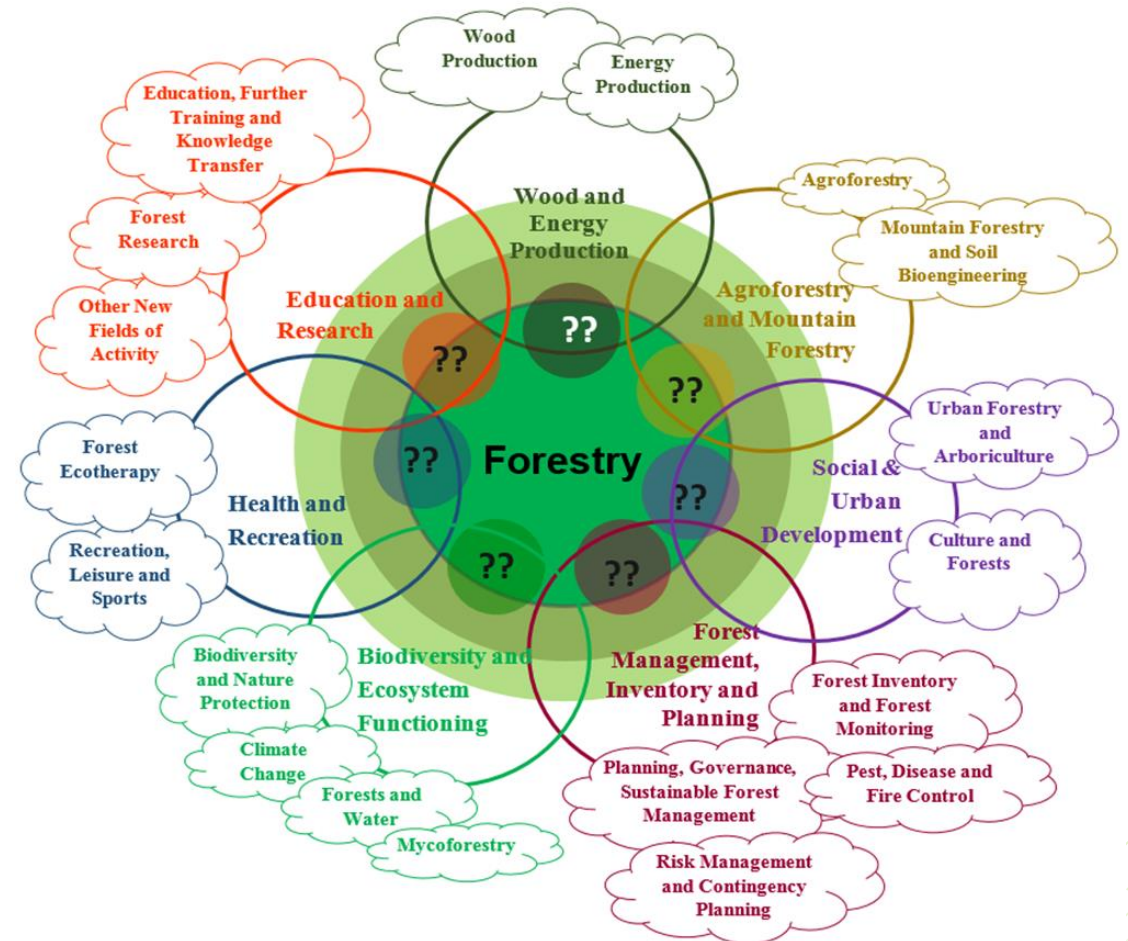
traditional / current  
Green forest jobs



current non-traditional  
Green forest jobs



new  
Green forest jobs



# Traditional, non-traditional and new Green Forest Jobs

Beispiel

## FORESTS

	Current traditional	Current non-traditional	New
<b>Wood &amp; Energy production</b>	Forest Machine Operator, UK Procuction of biomass/energy	Log salvager, British Columbia, CA Wood supply chain manager	Procurement forester, CA
<b>Regional &amp; landuse development</b>	Specialist Agroforestry	PM Forests and Natural Hazards, CH PM Forest and Protective Structures, CH Forest Soil bioengineer	urban permaculturist
<b>Social &amp; urban development</b>	Forest historian	Arboricultural officer	Urban forester, CA Adventure park forester, CH
<b>Management &amp; Planning</b>	Forest planner	Forest Policy Coordinator, UK	Local natural hazard advisors, CH Risk Manager ALB sniffer dog specialists
<b>Biodiversity &amp; Ecosystem functioning</b>	Forest wildlife manager	Forest fire fighter, CA	Forest Protection Advocate and grassroots organizer, US
<b>Health &amp; recreation</b>	Recreation forester	Forest rangers, CH	Forest therapy guide, US
<b>Education &amp; Knowledge Transfer</b>	Forest researcher	Marketing and communication manager, UK Forest pedagogs, CH	Knowledge transfer Civil science facilitator Community Forestry Advisor



# Wood and Energy Production

## Wood and Energy Production

- Forest machine operator
- Log salvager
- Wood supply chain manager
- Local energy procurers
- Procurement forester
- Short rotation plantation manager



# Mountain Forestry

An aerial photograph of a mountain landscape. The foreground and middle ground are dominated by dense forests. On the left, there is a large stand of tall, thin evergreen trees. To the right and in the center, there are areas of deciduous trees with vibrant autumn foliage in shades of yellow, orange, and red. A paved road winds through the forest, curving from the bottom center towards the right. In the background, more forested hills are visible under a clear sky.

## Agroforestry and Mountain Forestry

- Agro forester
- Project manager forests and natural hazards
- Project manager forest and protective structures
- Forest soil bioengineer
- Urban permaculturist
- Local natural hazard advisors

A photograph of a modern multi-story apartment building with colorful facades (red, white, and blue) and numerous windows. The building is partially obscured by several tall, slender trees with dark trunks and light-colored bark, likely birches, and lush green foliage in the foreground. The scene is brightly lit, suggesting a sunny day.

# Urban Forestry

## **Social and Urban Development**

- Forest historian
- Arboricultural officer
- Forest culture interpreter
- Funeral forest manager
- Urban forester
- Adventure park forester

# Bestmöglicher Bürgerservice

Tim Laumanns ist Leiter der Försterei Bergedorf vor den Toren der Metropole Hamburg. Die klassische Forstwirtschaft spielt eher eine untergeordnete Rolle, wesentlich ist die Pflege des Erholungswaldes.

mit unterschiedlichen Schwerpunkten gehören wie üblich Waldbau und Bewirtschaftung, Naturschutz, „Waldtierhege und -schutz“ (Jagd), die Unterhaltung von Wanderwegen und Naherholungseinrichtungen, Verkehrssicherung und besonders Öffentlichkeitsarbeit.

## Management öffentlicher Räume

„Wir sind nicht so die klassische Verwaltung, d. h. es gibt in Hamburg keinen forstlichen Überbau, kein staatliches Forstamt Hamburg mehr“, erläutert Tim Laumanns. Der Diplom-Forstwirt leitet seit dreieinhalb Jahren die Försterei Bergedorf. Wie seine Kollegen hat er daher für das operative Geschäft keinen vorgesetzten Amtsleiter, sondern die Förstereien sind eigentums- und verantwortungsmäßig den Bezirksämtern zugeordnet und werden durch sie geführt. Die fachliche Aufsicht erfolgt durch die Forstabteilung der Behörde für Wirtschaft. „Mein Vorgesetzter ist der Leiter Management öffentliche Räume. Der ist aber kein Förster und

Försterei hat gerade mal 200 ha, keine hat über 1.000 ha. Unsere Aufgabenschwerpunkte liegen ganz woanders. Wir gehören zum Aufgabenbereich öffentliche Räume, sind aber explizit nur zuständig für die als Wald ausgewiesenen Flächen. Außer wenn jagdlich etwas ist, habe ich mit dem öffentlichen Grün, sprich Parkanlagen oder Straßenbegleitgrün nichts zu tun“, erläutert Laumanns die Organisation.

Seine Revierförsterei in Wentorf liegt im Osten Hamburgs in der Nähe der B5. Das Revier umfasst 290 ha

Förster bislang wenig auseinandersetzen. „Wir haben hier sehr standortgerechte Bestände mit geringen Kalamitäten, allerdings 2017 auch ca. 1.000 Fm Sturmschäden“.

In dieser Gegend kann man weit ins Land sehen. Das Gelände in den Elbtälern ist überwiegend eben (Höhenlage zwei Meter über NN), im Norden befinden

sich hügelige Moränenausläufer. Der Niederschlag liegt zwischen 610 bis 640 mm im Elbtal und 730 bis 740 mm in der Geest. Die Böden bestehen aus Geschiebe-Sanden bzw. -Lehmen und -Mergel über einer Endmoräne als Ausgangssubstrat, bei Bonitäten zwischen null und drei.

Der Mischwald wird durch viele Wiesen und Freiflächen aufgelockert. Im Revierteil Bergedorfer Gehölz – ein altes Waldparkgelände – wachsen alte Buchen- und Eichenbestände. Mitten im Wald besteht seit langer Zeit eine Besonder-



*Quelle: AFZ-DerWald 9/18*

# Nur noch $\frac{1}{4}$ des Umsatzes hat mit Holz zu tun

**Walter Tschannen** | Das Forstrevier Angenstein umfasst insgesamt etwa 1400 ha Wald in den Gemeinden Aesch, Duggingen, Grellingen, Pfeffingen, Reinach und Therwil. Das Forstteam der Bürgergemeinde Aesch bewirtschaftet die Wälder als Kopfbetrieb. Betriebsleiter Christian Becker erläutert uns, wie wichtig in der dicht besiedelten Region die Inwertsetzung verschiedener Waldleistungen ist und wie sie funktionieren kann.

Recht zentral im Revier gelegen, aber inmitten von Industrie- und Gewerbebauten kaum zu finden, steht der stattliche Forstwerkhof. Die Bürgergemeinde Aesch hatte das landwirtschaftlich wenig ergiebige Land um den Andlauring schon vor 50 Jahren aufgekauft und darauf 1987 den Werkhof bauen lassen – damals noch auf weitgehend freiem Feld und mit Geld, das im Wald verdient worden war! Für die gerade mal 160 ha Aescher Bürgerwald war der moderne Forstwerkhof zwar überdimensioniert und mit 1,2 Mio. Fr. eigentlich auch zu teuer. «Aber die Bürger blickten mutig in die Zukunft und gingen davon aus, dass das Forstrevier wachsen werde», erzählt Forstbetriebsleiter Christian Becker. Und tatsächlich kamen bald die Wälder der Bürgergemeinden Pfeffingen, Duggingen,



*Forster Christian Becker leitet den Forstbetrieb der Bürgergemeinde Aesch BL.*

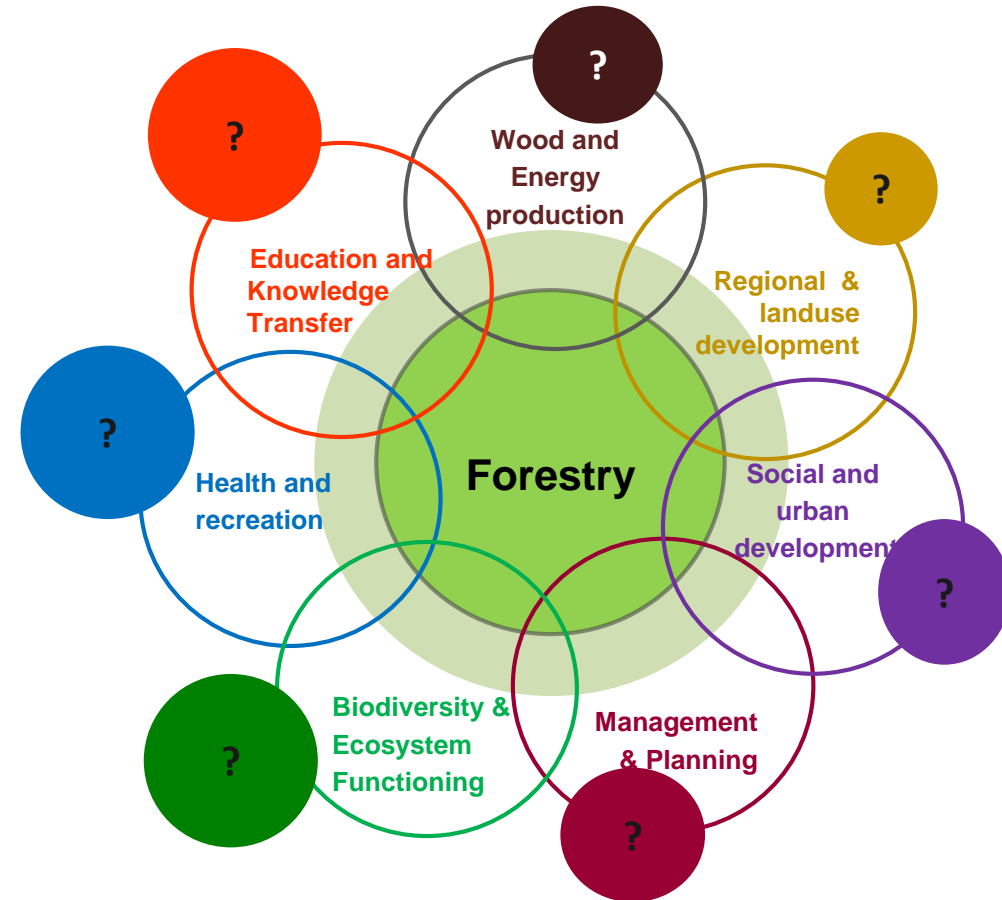
*Quelle:  
6/18\_Wald und Holz*

# How big is the potential?

And what are its consequences?

## FORESTS

Adapted strategies and actions needed



# Exchange and Exploration

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There are many networks exploring the future, e.g.

- Nature accelerator: [www.ecostarhub.com](http://www.ecostarhub.com)
- Innovation for Forest Ecosystem Services: [www.sincereforests.eu](http://www.sincereforests.eu)
- Research on European NonWoodProducts: [www.star-tree.eu](http://www.star-tree.eu)
- Research on urban forestry & sustainable cities: [www.greensurge.eu](http://www.greensurge.eu)



**ECOSTAR**  
NATURAL TALENTS

The first cohort of nature-based startups has graduated at the **ECOSTAR Nature-Accelerator** on July 19th, concluding with a Demo Day at which the startups pitch-presented their business ideas to private and public investors.



Find out how our young entrepreneurs are changing the future of sustainability through social innovation, new technologies, circular and bio economy!

# Forest Ecosystem Management = Pillar

Conclusions I

## FORESTS

- Management of Forest Ecosystem Services is the central pillar for Green Forest Jobs
- Forestry: “The science or practice of planting, managing and caring for forests.”
- Bridge between Forest Ecosystem Services & society/markets.
- *Need for continuous monitoring of trends, changes and new developments in the context of forestry (e.g. foresight analysis)*



# Skills & Education

## Conclusions II

### FORESTS

- “Skills are the knowledge, aptitude and competences necessary to perform a task. ... Skills development can promote innovation ...” (ILO 2010, draft guidelines)
- Major changes -> education, initial training, life-long learning and continuous re-training.
- *Initiation of pilote-projects, support of start-ups.*
- *Continuuos adaptation of existing education curricula; if needed establish new education programmes.*

# Cooperation, Policy & Communication

Conclusions III

## FORESTS

- Intensive collaboration between education/research institutions and practice needed; knowledge transfer in both directions is needed!
- Partnerships drawn from different sectors and disciplines should be encouraged.
- *Creation of innovative exchange-platforms, sharing knowledge, experiences and examples*
- *Adaptation of forest policy agendas.*
- *Communicate widely the contribution of Green Forest Jobs to sustainable development.*

# Thank you!

**«Green Forest Jobs  
have the potential to  
link the green  
economy with  
Sustainable Forest  
Management in a  
modern globalised  
world of continuous  
change!»**

Andreas Bernasconi  
ECE/FAO-ToS on Green Jobs in the Forest Sector  
18 September 2018, Geneva

