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Environmental Management in Peace Operations  
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# Forests and armed conflicts: a multifaceted problem



TESAF Dipartimento Territorio e Sistemi Agro-Forestali

UNIVERSITÀ DEGLI STUDI DI PADOVA

Daive Pettenella

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## Outline

1. The environmental and social role of forests
2. Armed conflicts and forests: the 3 dimensions of a complex relationship:
  - Forests as a direct target
  - Forest degradation as a spillover of armed conflicts
  - Forests as a tool for strengthening/weakening parties in conflict
3. Reducing negative impacts of armed conflicts on forest resources

These slides can be download from the web (search “pettenella”)

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## The key role of forests in environmental protection

- Forest: the richest natural environment for **biodiversity** (80% of land species – EC, 2019)
- Climate regulation: forest as drivers of **carbon emission** (14% of anthropogenic emissions from deforestation and forest degradation), but also a solution (29% of C **sequestration**)
- Forests → **land stability** and **water cycle** regulation

## The key role of forests in social and economic terms

- **1,7 billion** people living in rural areas directly depending on forest resources (frequently: ethnic minorities) (FAO, 2021)
- Forests: **cultural, religious values**
- Forest degradation → **health impacts**: zoonosis like AIDS, Nipah disease, SARS, Barmah Forest virus and Ebola (Di Marco *et al.*, 2020)
- Forestry sector: **2-3% of GDP**
- Int. wood trade: **3% of global trade value**
- Relevant role in **energy** production esp. in the global south (90% in African countries; wood biomass: the 1<sup>st</sup> renewable in Europe)

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## In the past

Forests as one of the main motivations for military occupation of foreign territories:

- Need of timber for the **shipbuilding industry** (see the history of the Republic of Venice)
- Need of **other raw materials** from the forests during the colonial period (rubber, teak, gum, ...)



Rubber tree plantations in Vietnam (Michelin)



Teak plantations in India

## Forests destroyed to eliminate enemies and to force migration

Vietnam: 72 M litres of herbicides used in the '60s: 10% of the mountain forest severely damaged and 36% of the mangroves destroyed

Aluoi Valley in 1995 still affected by the use of herbicides, after 20 years from the end of the war



The 15 herbicides used by US armed forces in Vietnam:

- PURPLE
- GREEN
- PINK
- ORANGE
- WHITE
- BLUE
- ORANGE II ("Super Orange")
- DINOXOL
- TRINOXOL
- BROMACIL
- DIQUAT
- TANDEX
- MONURON
- DIURON
- DALAPON

## In recent time, forest more frequently used as shelter and protective barriers



US camp in palm forest in Guadalcanal Island

## Forests as shelter and protective barriers



Marines quickly exit their landing craft directly in the palm tree line. Landing close to the trees gave the Marines cover from possible Japanese defenses.

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## B. Forest degradation as a spillover of armed conflicts

### Immediate impacts

- Need of timber and fuelwood by armed forces and local population: over-harvesting/ illegal logging
- Erosion, land degradation, landslides
- Forest fires
- Water pollution
- Illegal hunting

### Sometimes unexpected impact!

Use of logs to protect military vehicles of the Russia armed forces during Ukraine invasion (July 2022)





**Immediate impacts**

- Need of timber and fuelwood by armed forces and local population: over-harvesting/ illegal logging
- Illegal hunting
- Erosion, land degradation, landslides,
- Forest fires
- Water pollution

**Medium and long- term impacts**

- Human and animal health
- Biodiversity losses
- Destructuring of the public control systems: corruption
- Loss of forest productivity


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**De-mining in the Balkan (Slavonia oak forests) and now in Ukraine**






REPUBLIC OF CROATIA

**NATIONAL MINE ACTION STRATEGY OF THE REPUBLIC OF CROATIA**



Zagreb, September 2009

<https://www.gichd.org/fileadmin/GICHD-resources/rec-documents/NMAS-Croatia-2009-2019.pdf>


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## Energy needs by local population

### Siege of Sarajevo (1992-96)

No energy available → clearcut of all the urban trees (25 DM for 10 Kg of fuelwood)

Serbian snipers killing Sarajevo citizens while in the night they were trying to cut trees in the surrounding of the city



### Even larger negative impacts on forest from the Darfur conflict

(fuelwood but also wood for cooking bricks and for construction)



Destitution, distortion and deforestation

The impact of conflict on the timber and woodfuel trade in Darfur

November 2008



[https://postconflict.unep.ch/publications/darfur\\_timber.pdf](https://postconflict.unep.ch/publications/darfur_timber.pdf)

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## Forests as an instrument for ideological propaganda





Forest activities: land restoration, reinforcing traditional rural values (forest plantations by the Milizia Forestale in the '30s, the fascist military corp; the foundation of Arborea and Littoria – now named Latina, new forest cities)

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## “Conflict timber”

Official definition by the UN Security Council

The financing of violent conflict through the exploitation of natural resources: **timber**, diamond, oil → trade embargo

*“Timber that has been traded at some point in the chain of custody by armed groups, be they rebel factions or regular soldiers, or by a civilian administration, or its representatives, involved in armed conflict, either to perpetuate conflict or take advantage of conflict situations for personal gain»*  
(Global Witness)

Liberia  
Cambodia  
Burma  
DR Congo  
Ivory Cost  
...  
Russia and Belarus

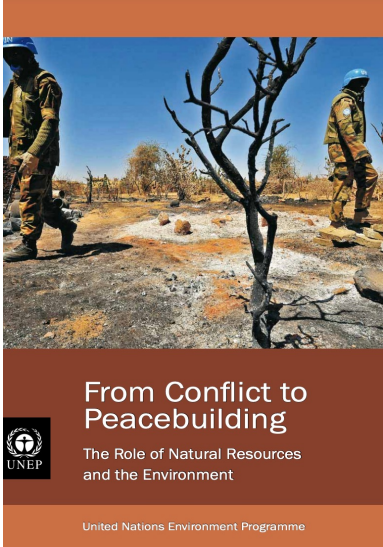
<https://unu.edu/publications/articles/united-nations-security-council-101.html>  
[http://web.worldbank.org/archive/website00661/WEB/PDF/LIBERIA\\_.PDF](http://web.worldbank.org/archive/website00661/WEB/PDF/LIBERIA_.PDF)

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<https://archive.globalpolicy.org/images/pdfs/07landgrabbingliberia.pdf>



**From Conflict to Peacebuilding**  
The Role of Natural Resources and the Environment  
United Nations Environment Programme

**Land Grabbing and Land Reform**  
Diamonds, Rubber and Forests in the New Liberia

"In Liberia, there is an immense territory rich with resources. Notwithstanding this, there are no improved or advanced methods of agriculture; the soil is scarcely tilled, there are no carts, wagons or other wheeled vehicles, no railways; the mineral wealth remains almost untouched and I am told on good authority that, in spite of all this wealth right at the very door steps of these people, even school teachers and ministers wear clothing manufactured in the United States or Europe, and eat canned goods that come from Chicago or Germany."  
—Baker's "Hushagga: The Negro in the South: His Economic Progress in Relation to His Moral and Religious Development, 1907"

"Liberian politics seem like a crap game played with loaded dice. There was a kind of convention law that the President could take two terms of office and then he had to let another man in to pick the spots."  
—Graham Greene, *Journey Without Maps*, 1936



"The war was a good thing. The way the government was always cheating. We had to fight that war."  
—Liberian diamond miner, Bonri County, 2007

**About this report**  
This report is a joint publication of Partnership Africa Canada (PAC) and the Association of Environmental Lawyers of Liberia (AELL). PAC has been a leader in the campaign to end conflict diamonds, in part by participating in the creation of the Kimberly Process Certification Scheme for rough diamonds. Green Advocates is Liberia's first and only public interest environmental law organization. A non-profit NGO, it is dedicated to protecting the environment, advancing human rights protection and advocacy through sound environmental practices, and giving voice to rural, indigenous, and tribal people. The paper was researched and written by Shawn Blore. The author, Partnership Africa Canada and Green Advocates would like to thank the many people who helped to make the report possible, especially Francis Cole of Green Advocates, who conducted extensive background research and analysis on natural resources occupation and revenue tracking. Numerous government officials provided generous of their time. They include: Joseph Nwankwo of the Public Procurement and Concessions Commission, Dr. Ames Sawyer and Walker E. Toppe, both of the Governance Reform Commission, John T. Woods, Charles K. Miller, Lawrence Y. Greene and Alfred Koko of the Forest Development Authority, A. Kpandell, Peter, Gabriel E. Manu, Kenneth F. Robinson, and Lawrence Y. Steward of the Ministry of Lands, Mine and Energy. Also the AC, thanks go to Andrea Taniguchi, Zaidi Hava Burqaya and Joseph San Saigy of UNAMIL, Arthur G. Buzball of the UN Panel of Experts, and Steve Stone and Luigi Testone of INPI. In Liberia, our many thanks go to Central Hub of CDDO, and a special thanks to Monrovia Bankers of the Gold and Diamond Miners and Workers Union of Liberia.

Any errors or omissions are the responsibility of the author and the publishers of the study.

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[https://postconflict.unep.ch/publications/pcdmb\\_policy\\_01.pdf](https://postconflict.unep.ch/publications/pcdmb_policy_01.pdf)







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## Cambodia

Throughout 1995, Global Witness conducted ground breaking undercover investigations along the Thai/Cambodia border which produced a wealth of information relating to the illegal multi-million dollar log trade between the Khmer Rouge and Thai logging companies. International pressure following the release of this information forced the Thai government to close the border.

Starved of funds, the Khmer Rouge began to disintegrate as groups started defecting to the government side in late 1996



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## Positive impacts of armed conflicts?

War can be a **blessing** in disguise or a **curse** to the rainforest depending on the course of events that surrounds the war, and the situation prior to the outbreak of the war (<http://www.mongabay.com/home.htm>)

Some cases of «blessing»:

Less pressure on the forests abandoned by local population (refugees): natural regeneration on farmland in the Balkan after the “ethnic cleansing”

Outcomes of military research: plywood, IR detection systems (forest fire monitoring), GIS and GPS technology, drones technology, ...

Bombing creating new three-dimensional spaces for aquaculture



<https://www.ediblegeography.com/the-harvests-of-war/>

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## Priorities

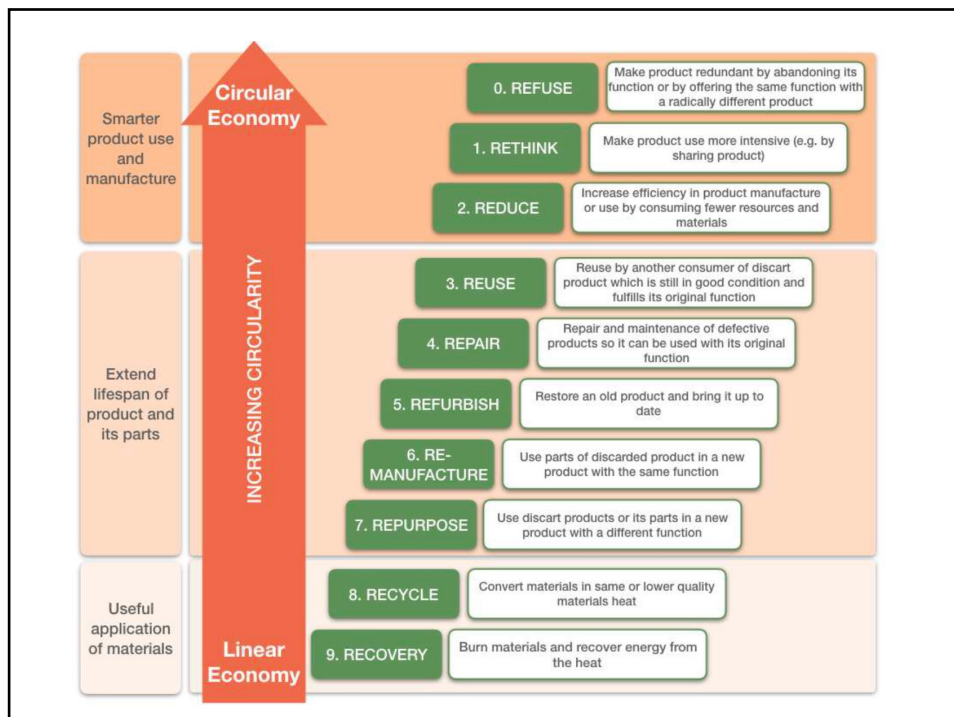
- Answering the **basic needs** of the local population: fuelwood, food (NWFP), shelter
- (Re)building **social capital** in the forest communities: self-regulating systems of control
- **Financial and technical support**: improved cooking equipment, tree nurseries and forest gardens, agroforestry systems, green building technologies, ...
- **Law enforcement**
- Public institutions as **reference models** of responsible use of forest resources



## Public institutions as reference models

- Land restoration
- Responsible use of renewable resources

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## Public institutions as reference models

- Land restoration
- Responsible use of renewable resources
- Supporting civil society initiatives, like the use of certified wood
  - FSC (Forest Stewardship Council),
  - PEFC (Programme for the Endorsement of Forest Certification)



## An important decision: keep the FSC certification system working in Ukraine to allow companies to manage responsibly their forests

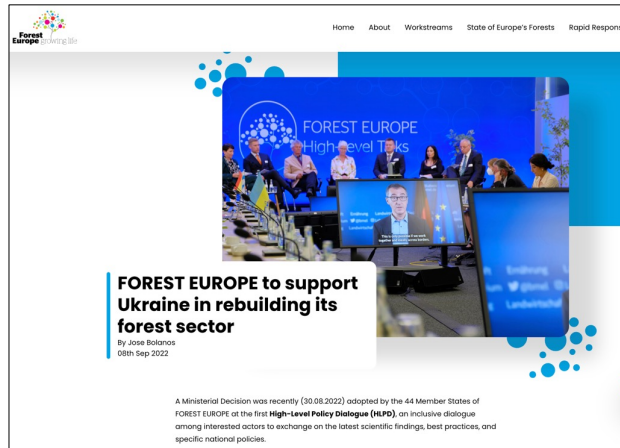


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Conducting FM 'hybrid' audits in Ukraine
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<https://connect.fsc.org/forest-management-certification/fsc-requirements-updated-enforce-decision-reject-fsc-material-conflict-areas>

## A relevant recent intergovernmental experience for forest restoration in Ukraine



<https://foresteurope.org/forest-europe-to-support-ukraine-in-rebuilding-its-forest-sector/>