

EDITORIAL

FOREST, WATER AND LIVELIHOODS

By Meine van Noordwijk

Forest and water issues have hit the news headlines over the past months. “Down with Trees” became one of the slogans after the release of the DFID report “From the Mountain to the Tap” and the FAO/CIFOR publication “Forests and Floods”. The excitement may be brought back to the simple observations that trees use water and that heavy rainfall causes floods.

The balance of public perceptions is swinging back and forth – from exaggerated expectations of what trees and reforestation can achieve (actively promoted as part of a ‘conservation’ agenda) and from false attribution of any downstream problem with water flows to the ‘deforestation’ activities by upland land users, we may go to the other extreme of ignoring the positive values of maintaining forested landscapes and well-buffered river systems with riparian forests and wetlands. Beyond the probably necessary shock effect of ‘debunking myths’, we get valid concerns over not throwing away baby trees with the bathwater. In this newsletter the different positions in this public debate are reflected.

The ‘forest and water’ debate is full of valid observations that are used to make generalizations at the wrong level, ignoring the effects of scale on many of the ‘truths’. “Not seeing the forest for the trees” is a well recognized problem, but “not seeing the

landscape for the forests” is equally problematic: the water flows at landscape scale are influenced by the patchwork of land cover plus the drainage system, in direct response to the spatial and temporal pattern of rainfall and conditioned by geology, slopes and subsurface flow conditions. However, it is boring if flooding can only be blamed on heavy rainfall and not on logging or deforestation.

Paragraph 23 of the Millennium Declaration calls **“To intensify our collective efforts for the management, conservation and sustainable development of all types of forests.”** Because clean water is essential for meeting health-related Millennium Development Goals, and Goal 7 (‘Ensure environmental sustainability’) clearly links environment and poverty issues; the **management of upper water catchments** deserves full attention. Poverty in the more remote upper catchments can be substantial, and part of the poverty is linked to existing rules and perceptions about what land use is and what is not compatible with the environmental service functions. Equitable systems for capture and distribution of benefit (values) resulting from good upstream forest and land management need to start from an analysis of critical thresholds in the forest – agroforestry – agriculture continuum.

The articles in this newsletter are grouped under four headings:

- 1 Perception gaps around forest and water, and multistakeholder negotiations
- 2 Highlights in forest hydrology
- 3 Livelihood issues and payments for environmental services
- 4 Case studies, including the special cases of peat swamp forests and riparian forests interacting with fish production

Section 1 starts with a summary of DFID's synthesis 'From the mountain to the tap' by John Palmer and a 'rebuttal' by Nick Chappell, who lists the arguments for a re-valuation of what reforestation can achieve for water flows on the longer run. More nuances in the debate and distinctions between areas where water demand exceeds the supply (and additional water use by trees is a problem) and wetter zones (where supply exceeds demand) is needed. For the wetter part of the world, however, the 'floods' issue is important. Thomas Enters and Patrick Durst summarize the evidence that changes in forest cover matter less than we have all been taught at school. Peter Walpole reflects on the issue from a Philippines perspective; Vu Tan Phuong reviews the evidence for Vietnam. Bruno Verbist and colleagues describe how the perception of 'essential' forests lead to conflicts in the past and how data on actual river flows help to negotiate agreements. David Thomas describes how measurement and evidence is starting to play a role in basin management in northern Thailand, replacing a 'forest' centered dialogue.

The second group of articles provides some highlights of current hydrology: Nick Chappell reviews modelling approaches, Kurniatun Hairiah and colleagues describe the importance of the litter layer as primary control over water flows and Catherine Muthuri explains how the phenology of the tree determines the net effect on storm and base flows. Roland Koeck and colleagues describe the special importance of limestone soils and the influence of tree cover on snowmelt that influences 'regularity of flow'. The approach may be transferable to the tropics, the conclusions as such definitely not... Water and nutrients interact

in many ways: rainfall brings nutrients along, while water outflows lead to transfers of nutrients downstream. Tellez and colleagues provide fresh data on nutrient loading of rainfall in the Amazon, and its sources.

The third block of articles describes current thinking and progress on various forms of 'payments for environmental services' related to forests and water. Bob Hope reviews lessons from Costa Rica, Ivan Bond gives an overview of lessons learnt in the IED network; Horst Weyerhauser relates the challenges faced by the 'sloping land rehabilitation' program in China, that was initiated after the Yangtze floods. Daniel Murdiyarto and Ulrik Ilstedt focus on the role of forests in the provision of drinking water. In a contribution from the RUPES program the emphasis is on the various steps that are needed to bridge the different perceptions, illustrated with the case of Lake Singkarak. Brent Swallow describes the 'forests, flowers or flamingo' choices that are only now beginning to be understood in Kenya. Rowena Sorriaga reviews watershed governance in the Philippines and Bogliotti the re-focus on 'demand' issues in the Mediterranean region, as there isn't much that can be done about 'supply'.

The 'case studies' group provides further local context for the issues. Peter Gerritsen describes the Ayuquila watershed in Mexico, Eric Flores discusses reforestation in Panama, Elke Verbeeten analyzes the situation in Burkina Faso, Olavi Luukkanen and Ping Zhou the Yangtze river and Wim Douven the Mekong river in Yunnan close to its origin. Further downstream, the Mekong river feeds the Tonle Sap in Cambodia, where the primary concern is, however, over the disappearance of floodplain forests and

its effects on fisheries, as described by Patrick Evans. Forest roles in sustaining fish is also the focus in Colombia. One step further into wetlands, three articles describe the peat swamp forests as special case: Jack Rieley provides an overview, Henk Wösten describes the situation in Berbak (Sumatra) and Jolanda van den Berg provides a socio-economic context for the approaches to conserve such wetland forests while enhancing livelihoods.

Throughout this newsletter pleas are made to go back to the collection and interpretation of data. The public debate on forests and water in many countries is highly charged with expectations of public benefits of forests and attributions of blame to upland farmers using the landscape that are not based on analysis of facts and measurements. There is a need for 'new hydrology', but also for approaches that facilitate multi-stakeholder negotiations on what combinations of restrictions and 'rewards' will lead to the continued provision of water flows of desirable quality together with land use that allows 'uplanders' to make a living. There will certainly be an important role for forests and trees in this respect, once we get the 'myth-perceptions' sorted out.

Beyond these articles, the newsletter contains information on recent publications and upcoming events in the usual way. Happy reading.

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"FROM THE MOUNTAIN TO THE TAP", AN INTRODUCTION

By John Palmer

Every day we read, watch and listen to reports of environmental, human and economic disasters, which appear to have been caused by uncontrolled deforestation and unsupervised forest degradation. Floods and landslides, sedimentation of irrigation systems and silting of hydropower dam reservoirs are often attributed to the felling of trees. But is such simple association correct?

Some national agencies, with international co-funding, are spending immense sums of money on tree planting, soil and water conservation structures and allied measures, in the belief that they are attracting rainfall and/or facilitating recharge of groundwater. These huge schemes are found especially in the watershed development programmes in states of India and in the "environmental forestry" programmes of China. Many other countries have smaller schemes, but are impelled by the same belief, which originated in the eighteenth and nineteenth centuries when there was limited understanding of global weather patterns, cycles and variation.

The advent of improved instrumentation and data-logging, plus much more powerful computer modelling and geographic information systems, now enables these beliefs to be tested. Process hydrology enables the components of the water cycle, from atmosphere through vegetation to soil and streams, and back to the atmosphere,