

Can foresters better cope with severe drought episodes?

Bernard Roman-Amat

Faced with more frequent episodes of severe drought, forest managers have to improve their knowledge and their practices.

In forests that went recently through such an episode, reaction involves (i) appropriate methods to decide which trees have to be harvested, (ii) efficient commercial ways to sell those trees, (iii) development of treatments that will limit epidemic-size pest invasions, (iv) replanting damaged young stands.

On a broader scale, more emphasis certainly has to be put on preventing the foreseeable effects of severe drought episodes. This implies primarily the replacement of stands stocked with non-adapted species, and a greater attention put on favouring on each site the species that are well adapted to it. As a result, the area of sites on which the production of timber is not the first priority could increase. Specific silvicultural treatments aimed at increasing the resistance of forest stands to drought also have to be extended; for instance growing high forests with lower than usual LAI (Leaf Area Index), and on shorter periods of time.

Reducing the impact of severe drought episodes seems to be compatible with some other aims of forest management, such as increasing resistance to wind, preventing forest fires or improving the flow of water downstream. However, the techniques used might also result in lowering the per-area timber production, and in increasing the year-to-year heterogeneity of wood, thus possibly modifying the parameters of economic profitability of forestry.

Overall, the foresters seem to have the right techniques to cope with the emerging new situation of more frequent episodes of drought. However, some large scale consequences of their likely reactions look important. The area of productive forests could be reduced; forests where timber sales are limited or absent, and where foresters have to rely on other sources of income, will expand. In productive stands, a possible reduction of income would have to be matched by a lowering of management costs.