

## Abstract template for the conference “A century of national forest inventories – informing past, present and future decisions”

Dear author. This is a two-page template that in the first page will ask for information on presenter name, topic, and preferred presentation form.

On page two, you are asked to fill in your abstract in the format and font size indicated. Please remember to include authors affiliation information in the footer section of page two. The length of the abstract may not be more than one page including references.

<b>Abstract title:</b>		Using consecutive National Forest Inventories to validate StandsSIM regional forest simulator – a Portuguese application. Susana Barreiro
<b>Take-home message:</b>		<i>Please provide a short take-home message from your study and your results' implications.</i>
<b>Presenter name:</b>		Susana Barreiro
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<b>General topic, see website:</b> <small>(please double click on the check box and activate the relevant one)</small>	<input type="checkbox"/>	Improving future NFIs by learning from the past
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	<input type="checkbox"/>	Cutting edge and futuristic inventory techniques and technologies
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<i>Abstracts will be reviewed by members of our scientific committee and you will be given information on decisions in due time after the submission deadline has passed.</i>		

# Using consecutive National Forest Inventories to validate StandsSIM regional forest simulator – a Portuguese application.

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**Introduction:** The losses caused by severe forest fires in conjunction with the increase of wood demand for the pulp and paper industries lead to the development of StandsSIM regional simulator, a market demand driven NFI-based tool designed to simulate forest condition under different scenarios (e.g. fire occurrence, land use changes and changes in management). This work proposes to use NIF data to validate the performance of this large-scale scenario simulator.

**Materials and methods:** The NFI4 (1995-1997) data was used to initialize StandsSIM and predict the evolution of forest condition for a period of 20 years. Simulations were validated with historic data from NFI5 and NFI6. A business-as-usual scenario based on official statistics reflecting market demands, burnt areas, land-use-changes and forest management for the period of 1997-2015 was prepared. Simulations were run and standing volume and forest area by age classes/stand structure estimates compared with NFI5 and NFI6 published values.

**Results:** Preliminary results of validation showed that StandsSIM is capable of making reliable large scale projections for standing volume. In terms of the distribution of forest areas by age classes, simulation results were reasonable for all stand types except for the uneven-aged ones for which simulated areas were under-estimated. Work is still in progress to contour this limitation.

**Conclusion:** StandsSIM's module responsible for implementing percentual changes between different FMA needs to be improved by coupling an even-to-uneven-aged transition algorithm that will be responsible for simulating the events, such as sanitary thinning or incomplete final harvest that can originate uneven-aged stands.

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