

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

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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.

Abstract title:		Forest Resources Monitoring using Permanent Sample Plots from the National Forest Inventory in South Korea
Take-home message:		<i>Since the 5th NFI system (2006 Year), a systematic cluster sampling with permanent sample plots (PSP) has been applied. The information with the PSPs could be provided the status and change on forest variables.</i>
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General topic, see website: (please double click on the check box and activate the relevant one)	<input checked="" type="checkbox"/>	Improving future NFIs by learning from the past
	<input checked="" type="checkbox"/>	NFIs today and in the future
	<input type="checkbox"/>	Cutting edge and futuristic inventory techniques and technologies
Preferred presentation form:	<input type="checkbox"/>	Oral presentation
	<input checked="" type="checkbox"/>	Poster
<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>		

Forest Resources Monitoring using Permanent Sample Plot from the National Forest Inventory in South-Korea

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Introduction: Nowadays, the role of forest is gradually increased from timber production to carbon sink and several ecosystem services including forest welfare. Since 2006, a new national forest inventory in Korea, which adopted a systematic cluster sampling with a 5-years panel (KFRI, 2009; Kim et al., 2010), has been restructured to assess status and and monitor the changes in forest resources based on permanent sample plots. The NFI implemented to provide forest resources information which are to support forest policy at different levels. The PSPs can produce more detail and valuable information (Kangas and Maltamo, 2006). The objective of this study is to assess the possibility of PSPs for estimating forest stand variables such as forest cover types, dominant tree species, growing stock volumes and ingrowth and for monitoring land-use changes in forest lands over time.

Materials and methods: Permanent sample plot (PSP) data with a 5-year interval were collected between 2006-2010 and 2011-2015 in Chungcheongbuk-do, respectively. In order to produce land use/cover change matrix which is used as an activity data for estimating Greenhouse Gas inventory of LULUCF sector, the PSPs were classified into six land use/cover categories (IPCC, 2006). Additionally, matrixes for assessing the changes in age class and dominant tree species can provide more detailed information. And the changes on forest stand variables, such as growing stock volumes, mortality, mean DBH and tree height were assessed.

Results: For forest stand variables (tree density, basal area, growing stock, mean diameter at breast height, and mean height), their growth and change were assessed. The periodic annual growth ratios for tree density and basal area were slightly declined whereas that of growing stock volume was estimated to be about 3.7%. The uncertainty of changes in forest stand variables was less than 5%, except for tree density (RSE: 58%). The variation of tree density was relatively high compared to the other variables.

Conclusion: With increasing the role of forests, the demanded forest resource information is increasing over time. Additionally, many international institutes and conventions require forest information at the national level for monitoring deforestation, carbon stocks and biodiversity as well (FAO, 2018). The overall objective of NFI is to provide forest information for supporting forest policy and national reporting. The NFI with PSPs is possible to provide consistent and transparent forest resources information.

References:

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