

## INTRODUCTION

The Democratic Republic of Congo has the greatest extent of tropical rainforests in Africa, covering over 100 million hectares. The country has been exposed to industrial logging since the 1920s, which gradually developed until the majority of DRCs forests were under large-scale logging concessions. The DRC government launched a priority reform agenda in 2002, encapsulated in a new Forest Code to promote sustainable forest management.

However, illegal logging remains a significant concern within DRC. From 1990 to 2005, forest cover in DRC fell by nearly 3%. The UN estimates that at the present rate of exploitation more than two thirds of the Congo Basin forest could be lost by 2040.

The Illegal Timber Logging Service may provide users with relevant service information to contribute to focused reactions during conflicts and to evaluate the nature and extent of illegal logging in selected areas.

## CORE PRODUCTS GEOGRAPHIC REFERENCE MAP, TIMBER LOGGING MAP AND INFORMATION DOSSIER

The product consists of three components:

- > A geographic reference map providing basic geo-information of the study area
- > A map indicating those areas where timber logging activities may take place
- > An information dossier describing briefly how to interpret the map summarising the major results of the analysis

The final products focus on the indication of illegal timber logging areas but also include additional features that are important within the overall context

such as road network, settlements and rivers. Together with the background information provided with the information dossier the maps summarize a comprehensive overview about the situation in eastern DRC to be integrated into policy recommendations.

The latter are the main objectives of reports generated by the end user community mainly based on socio-economic analyses. Thus, the major issues that will be addressed are:

- > Supporting political decision making
- > Bridging the gap between Peace and Conflict Research and GIS/Remote Sensing Community



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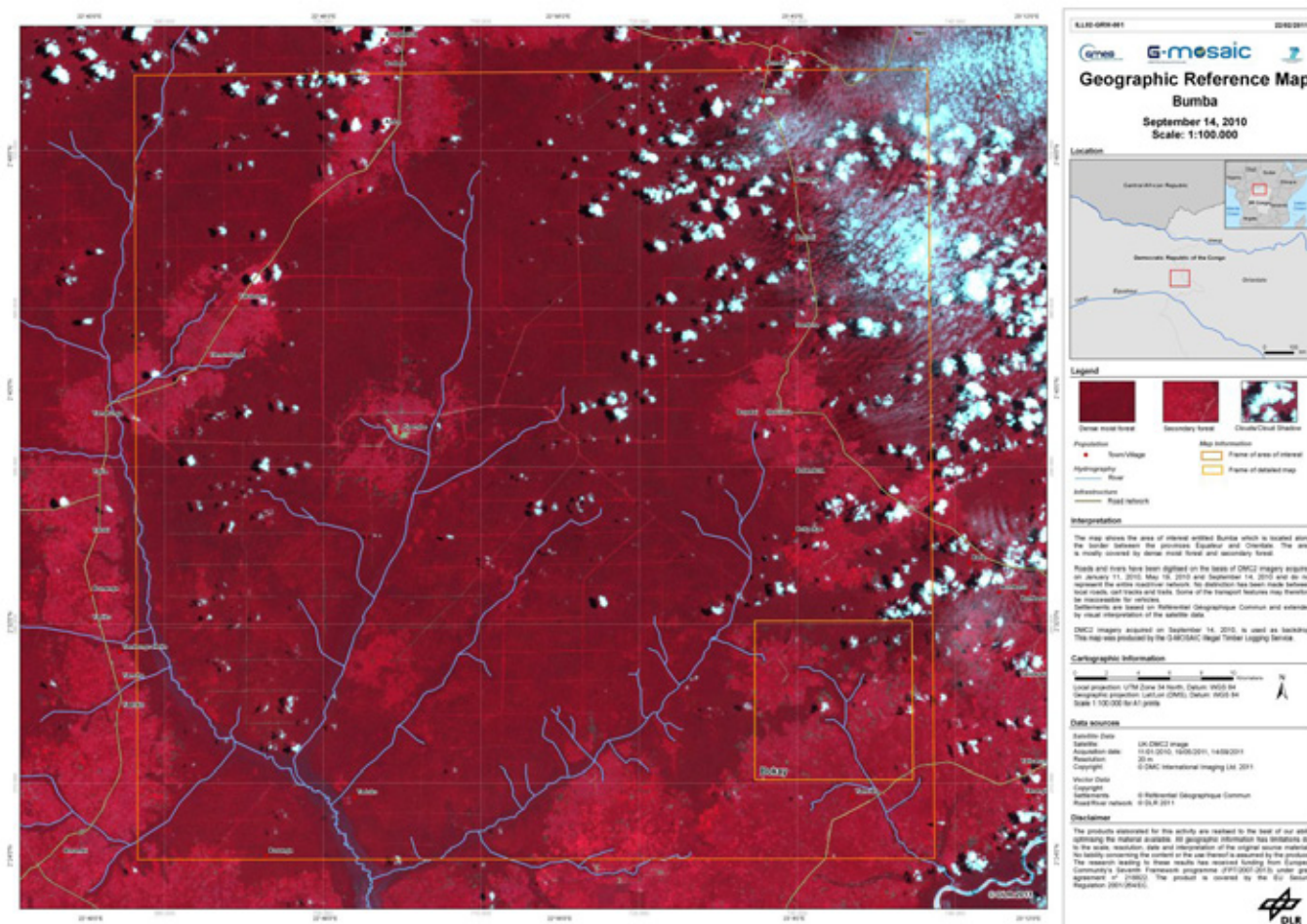
# ILLEGAL TIMBER LOGGING SERVICE CHAIN

## GEOGRAPHIC REFERENCE MAP

For regions such as the DRC vector data are hardly available and often not reliable. Due to the lack of geo-data most of the vector data has been derived from visual interpretation and manual digitization of the satellite imagery. The extraction of the features

profits from the multitemporal data acquisition plan. Thus, the impact of seasonal or even daily variations due to factors such as rainfall or biological growth can be overcome and the range of detectable features extended.

*Precise geographic information is a key element for prevention and response to ongoing crises*



Geographic Reference Map of Bumba (DMC2, HR), scale 1:100,000

The Geographic Reference Map (GRM) provides basic geo-information such as road network, river network and settlements. The reference maps are provided at a scale of 1:100,000 for high resolution imagery and at a scale of 1:18,000 for very high resolution imagery, respectively.





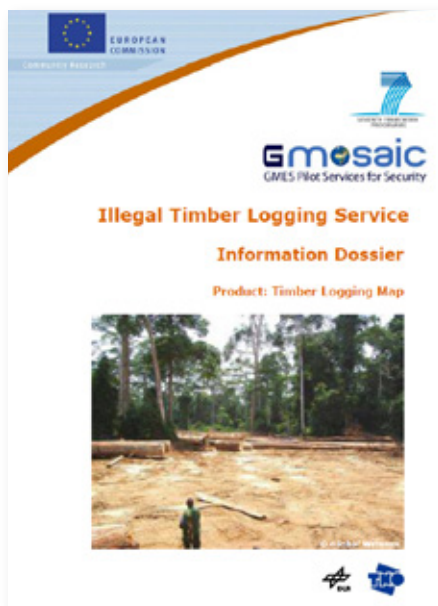
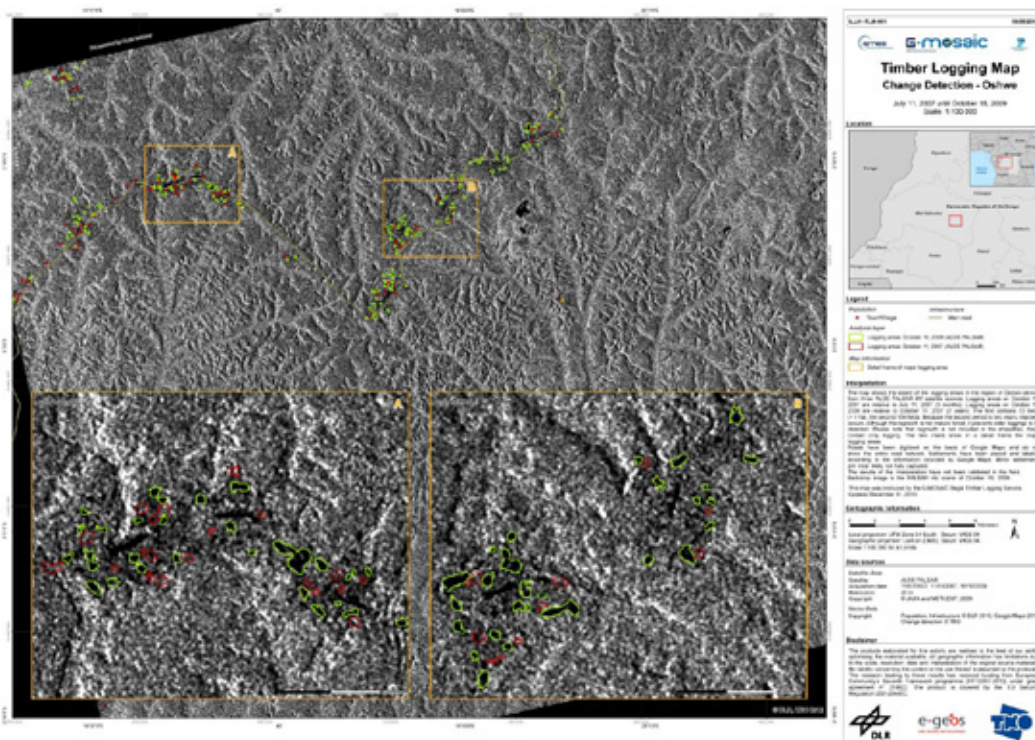
# TIMBER LOGGING MAP

Timber Logging Maps (TLM) are produced using optical and radar satellite data. Changes are obtained using automatic and semi-automated methods. The final product is a vector layer where each polygon represents

a change with regard to the class of interest, e.g. decrease or increase of forest cover. Changes provide knowledge about the activities carried out in the study areas.

*Monitoring forest cover change using remote sensing imagery*

*The Timber logging map of Oshwe, DRC, shows logged fields projected on the ALOS PALSAR greyscale image for the period between July 11, 2007 and October 16, 2009. The red polygons show the logging status on October 11, 2007 and the green polygons the logging status on October 16, 2009.*



# INFORMATION DOSSIER

The interpretation of satellite data is more complex compared to in-situ observations and requires a careful analysis. This dossier is aimed at reporting the processing steps of the analysis approach for the detection of timber logging in the DRC.

*Information Dossier Illegal Timber Logging*

## AREAS OF INTEREST (AOI)



### High Resolution

(50km x 50km)  
Bumba  
Oshwe  
Teturi

### Very High Resolution

(10km x 10km)  
Yamolela  
Kundala  
Bokay

MORE INFORMATION AT  
[WWW.GMES-GMOSAIC.EU](http://WWW.GMES-GMOSAIC.EU)

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*This service "Illegal Timber Logging" is coordinated by the German Aerospace Center (DLR) with the efforts of other partners inside the G-MOSAIC project: e-Geos, GISAT, Astrium Geo-Information Services and TNO. As a coordinator of the service DLR organises the production, ensures the quality of the product and the suitability to user needs.*



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