



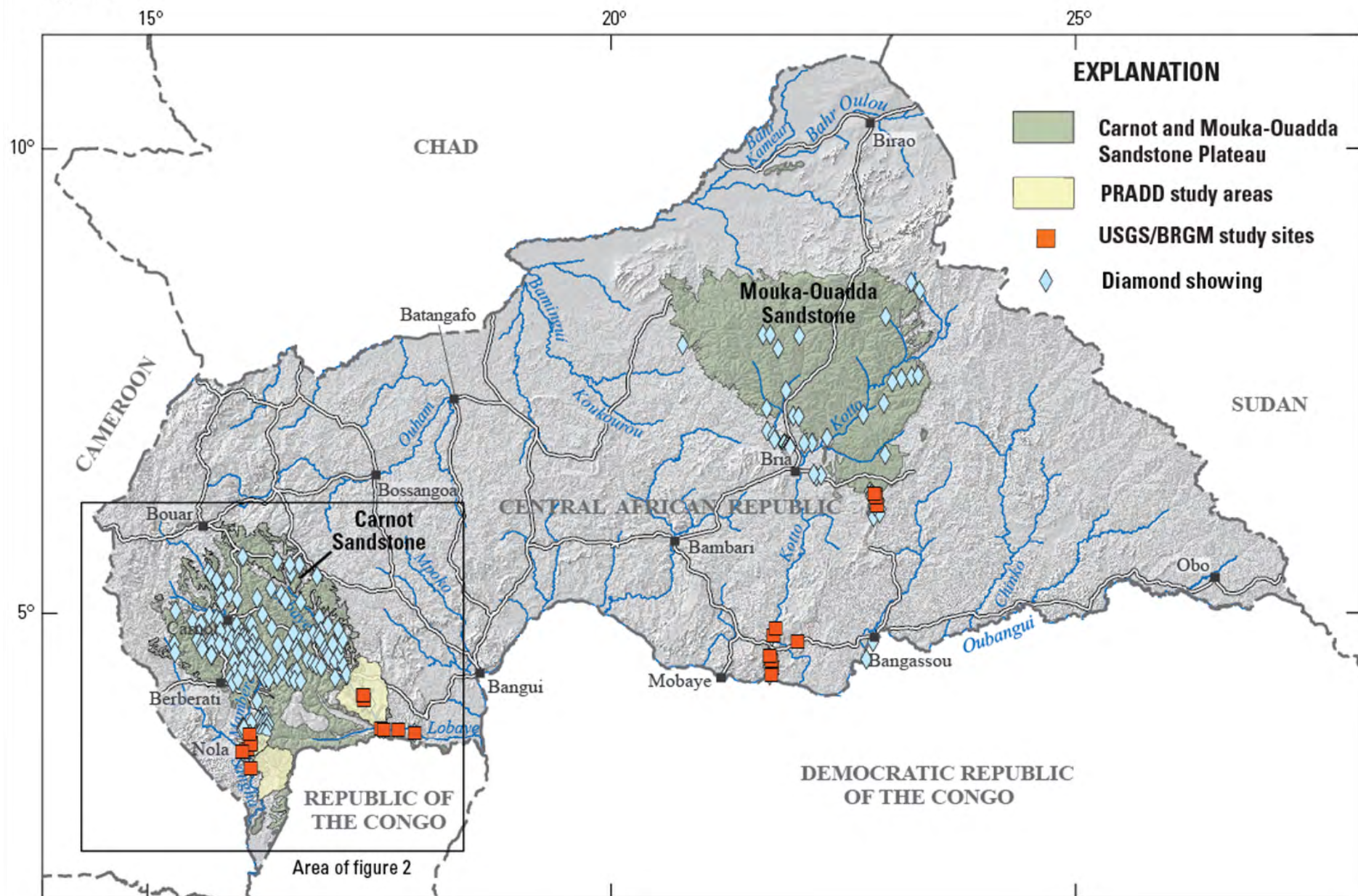
# Summary of the Alluvial Diamond Resource Potential and Production Capacity Assessment of the Central African Republic

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U.S. DEPARTMENT OF THE INTERIOR  
U.S. GEOLOGICAL SURVEY

**Figure 1.**



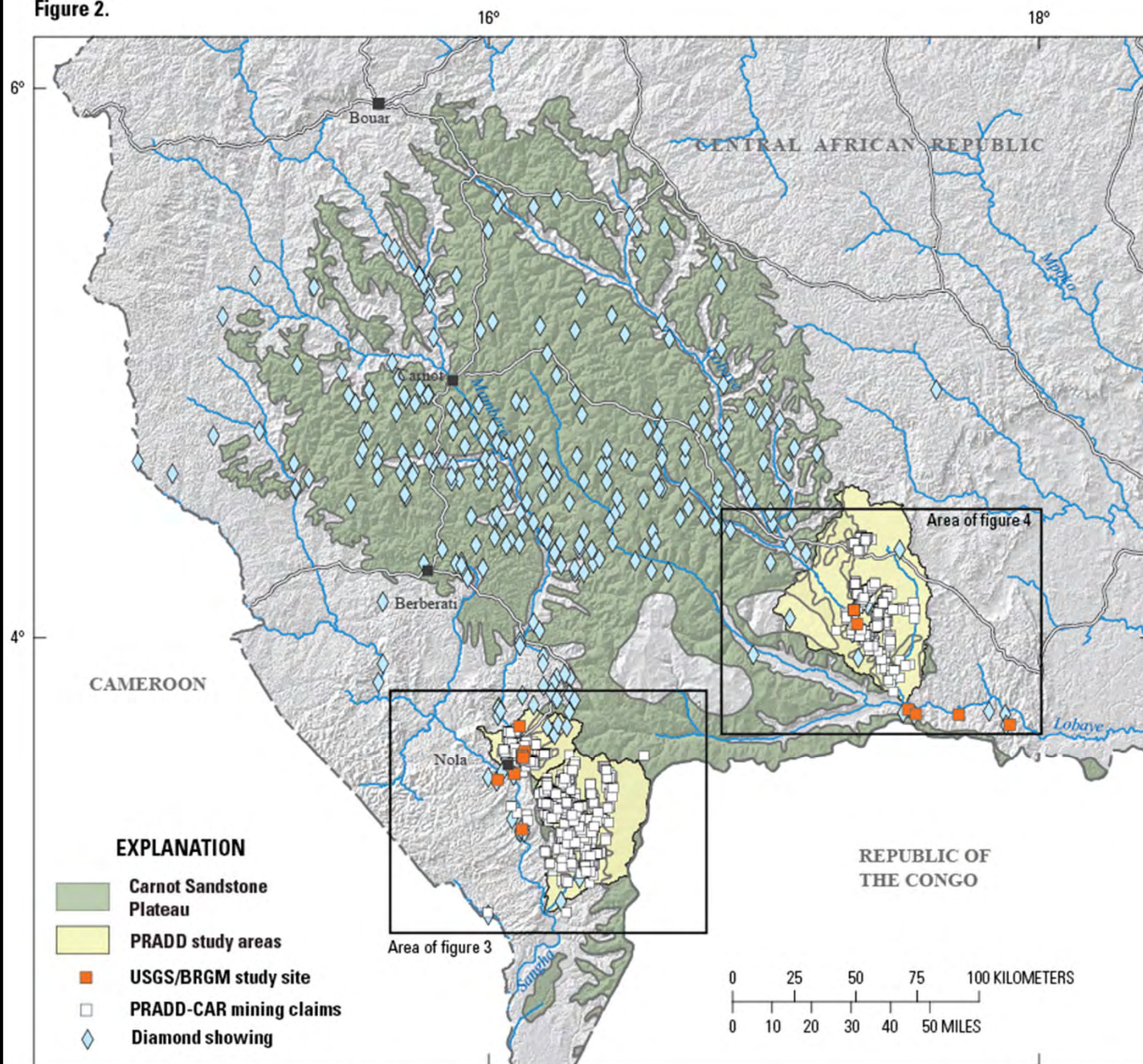
Shaded relief modified from Shuttle Radar Topography Mission  
Other base features modified from the U.S. Geological Survey  
Global Geographic Information Systems database

0 75 150 225 300 KILOMETERS  
0 50 100 150 MILES

Geology modified from  
Lescuyer and Milesi, 2004



Figure 2.

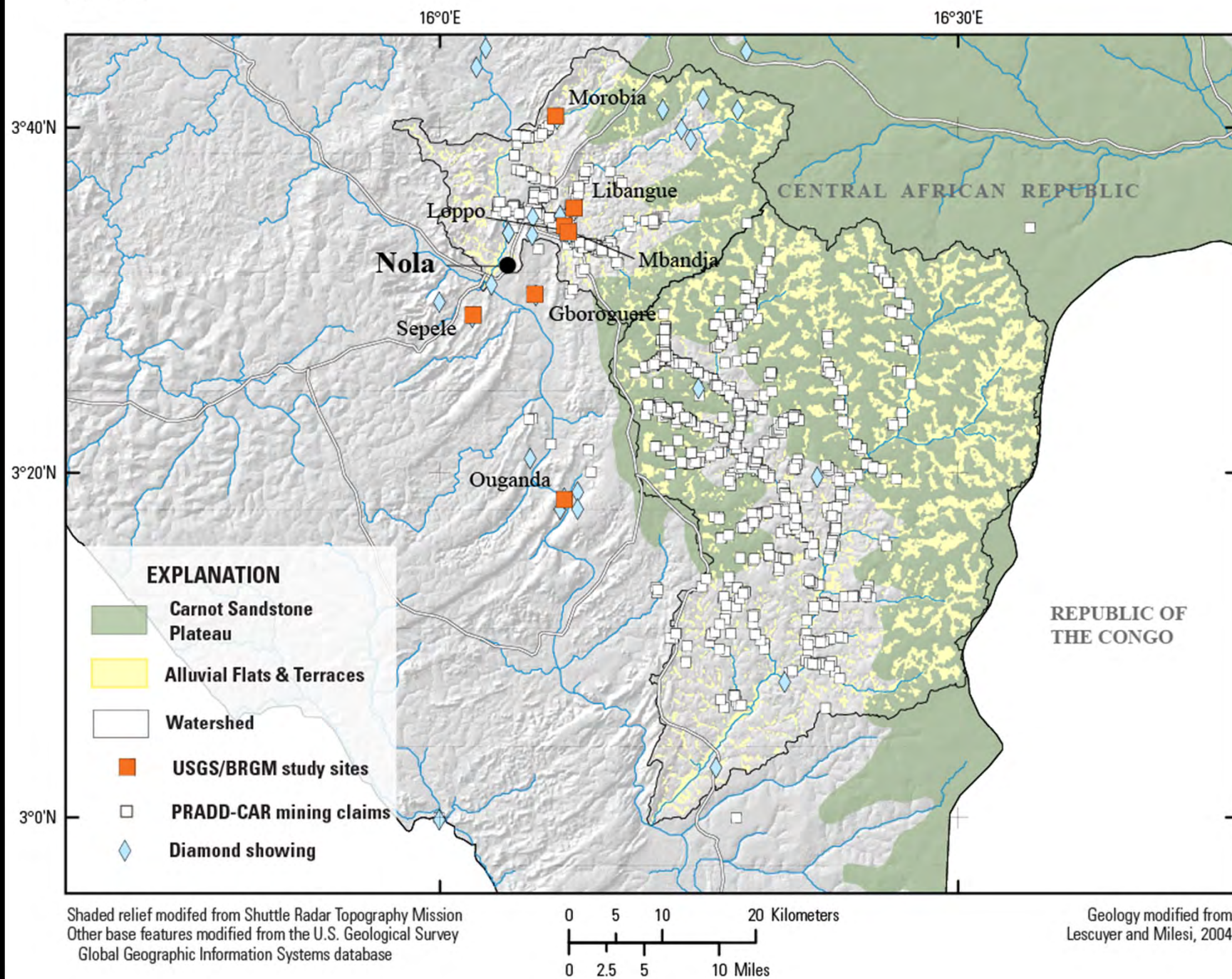


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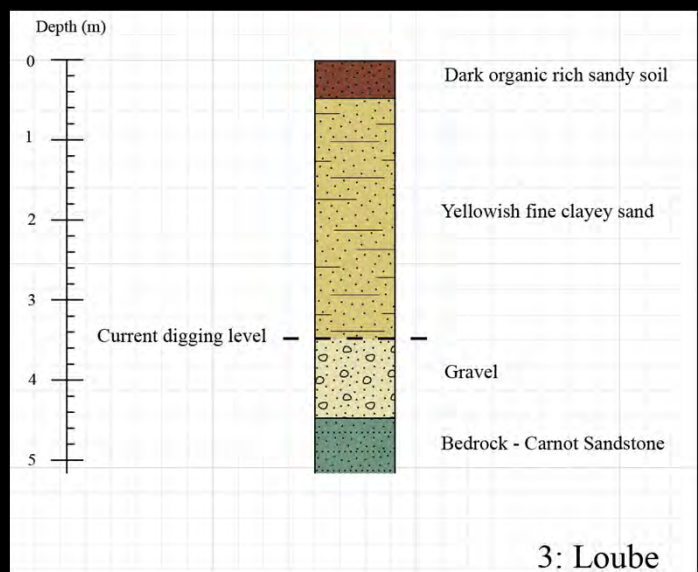
Geology modified from  
Lescuyer and Milesi, 2004



Figure 3.

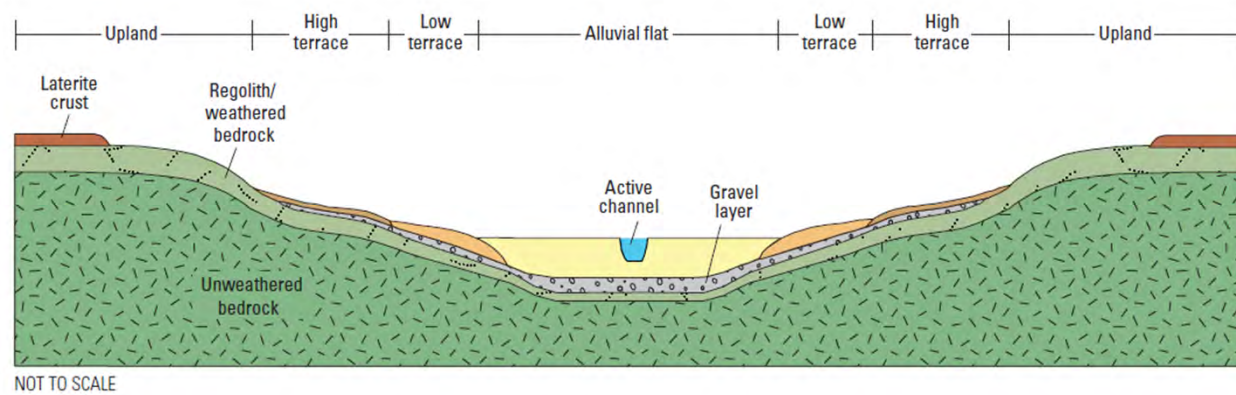
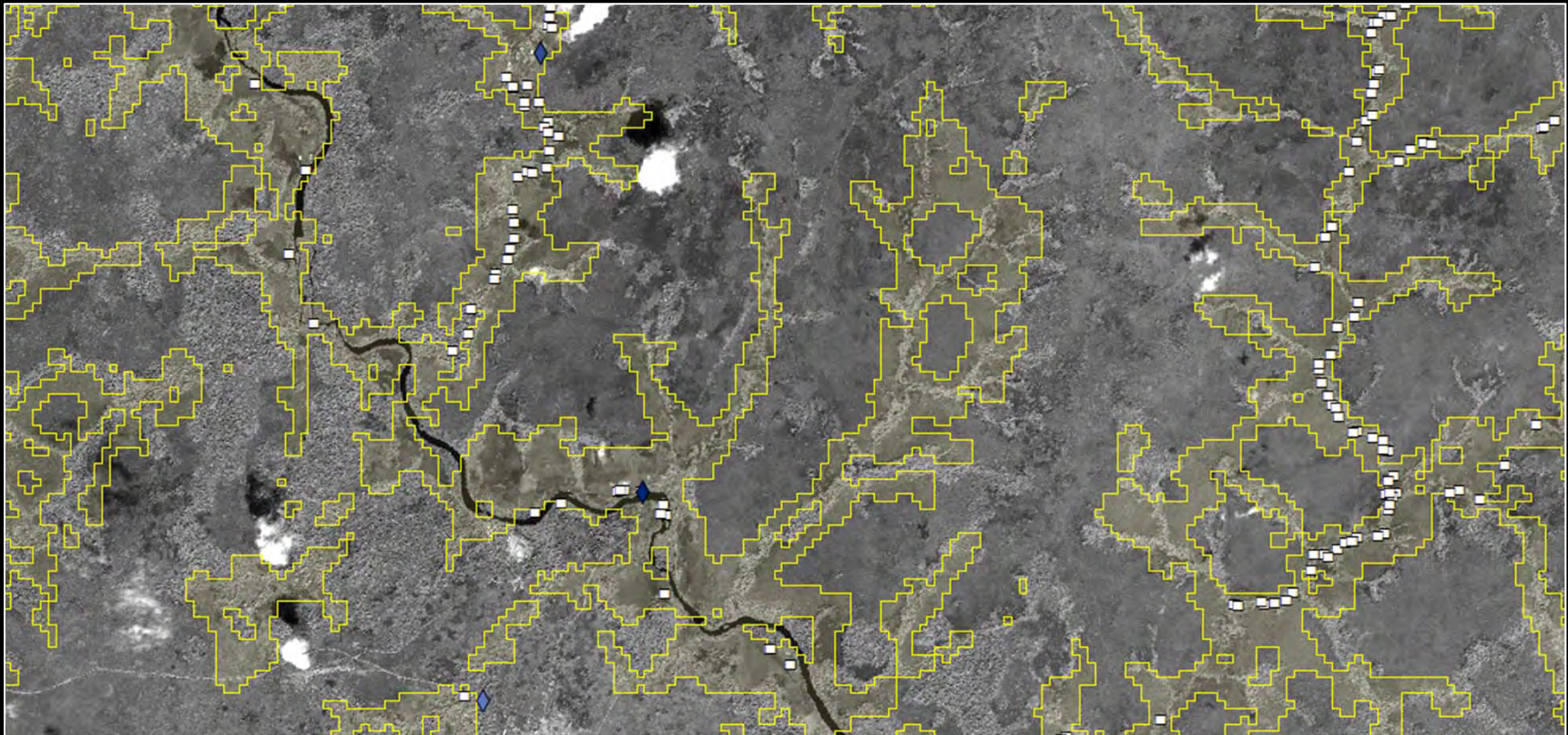






Geologic field mapping to support resource assessments





**Figure 4.** Schematic profile of flood-plain geomorphology.

Digital terrain and satellite image analysis to support resource assessments

Table 1.								
Watershed	Number of Cells	Cell Area (m <sup>2</sup> )	Total Surface Area (m <sup>2</sup> )	Average Gravel Thickness (m)	Total Alluvial Volume (m <sup>3</sup> )	Volume of Deposit (ct/m <sup>3</sup> ) (2% of Total Alluvial Volume)	Concentration Grade (ct/m <sup>3</sup> )	Concentration Reserves (ct/m <sup>3</sup> ) (2%)
<i>Nola1</i>								
AF	50451	8402.77	211,964,074.64	0.8	169,571,259.71	3,391,425.19	0.60	2,034,855.12
AT		8402.77	211,964,074.64	0.2	42,392,814.93	847,856.30	0.20	169,571.26
<i>Nola2</i>								
AF	13011	8402.77	54,664,220.24	0.8	43,731,376.19	874,627.52	0.60	524,776.51
AT		8402.77	54,664,220.24	0.2	10,932,844.05	218,656.88	0.20	43,731.38
<i>Boda1</i>								
AF	99778	8402.77	419,205,792.53	0.8	335,364,634.02	6,707,292.68	0.60	4,024,375.61
AT		8402.77	419,205,792.53	0.2	83,841,158.51	1,676,823.17	0.20	335,364.63
Sub-Total								7,132,674.51
Estimated Historical Production								2,000,000
Total Resources Remaining								5,132,674.51



CAR Inferred and Speculated Resources				
Zone	Total Estimated Resources Volume Grade Approach (ct)	Total Estimated Resources Content per Kilometer Approach (ct)		Mean Total Estimated Resources (ct)
<b>Country-Level Assessment</b>				
Western Zone (Carnot)	29,227,742.00	36,990,718.65		33,109,230.33
Eastern Zone (Mouka-Ouadda)	27,235,608.30	26,916,727.00		27,076,167.65
	<b>56,463,350.30</b>	<b>63,907,445.65</b>	<b>Total Resources</b>	<b>60,185,397.98</b>
			<b>Historical Production from 1931 - 2006</b>	<b>21,000,000.00</b>
			<b>Total Resources</b>	<b>39,185,397.98</b>
<b>PRADD Study Area Assessment</b>				
Nola Watershed				<b>2,772,934.27</b>
Boda Watershed				<b>4,359,740.24</b>
			<b>Sub-Total</b>	<b>7,132,674.51</b>
			<b>Estimated Past Production</b>	<b>2,000,000.00</b>
			<b>Total Resources</b>	<b>5,132,674.51</b>

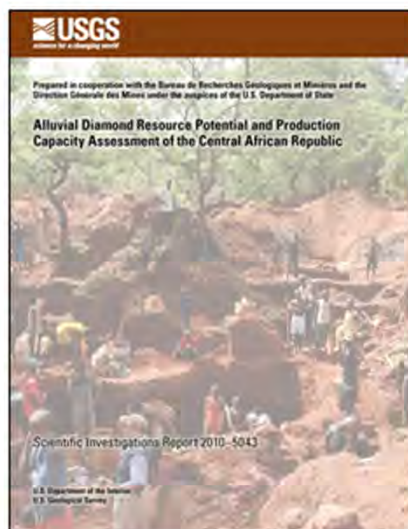
Table 2. Production and value statistics of CAR.

Year	Volume (cts)	US\$/cts	Value, US\$
2004	348,205.16	148.50	51,709,404.00
2005	382,756.00	158.25	60,572,404.80
2006	419,528.35	140.79	59,066,866.49
2007	467,710.53	127.98	59,857,870.53
2008	377,209.12	126.59	47,752,281.70
2009	311,779.42	151.03	47,086,829.60
2010	301,557.62	162.13	48,892,376.57



# Alluvial Diamond Resource Potential and Production Capacity Assessment of the Central African Republic

By Peter G. Chirico, Francis Barthélémy, and François A. Ngbokoto



## ABSTRACT

In May of 2000, a meeting was convened in Kimberley, South Africa, and attended by representatives of the diamond industry and leaders of African governments to develop a certification process intended to assure that rough, exported diamonds were free of conflict concerns. This meeting was supported later in 2000 by the United Nations in a resolution adopted by the General Assembly. By 2002, the Kimberly Process Certification Scheme (KPCS) was ratified and signed by diamond-producing and diamond-importing countries. Over 70 countries were included as members of the KPCS at the end of 2007.

To prevent trade in "conflict diamonds" while protecting legitimate trade, the KPCS requires that each country set up an internal system of controls to prevent conflict diamonds from entering any imported or exported shipments of rough diamonds. Every diamond or diamond shipment must be accompanied by a Kimberley Process (KP) certificate and be contained in tamper-proof packaging.

The objective of this study was (1) to assess the naturally occurring endowment of diamonds in the Central African Republic (potential resources) based on geological evidence, previous studies, and recent field data and (2) to assess the diamond-production capacity and measure the intensity of mining activity. Several possible methods can be used to estimate the potential diamond resource. However, because there is generally a lack of sufficient and consistent data recording all diamond mining in the Central African Republic and because time to conduct fieldwork and accessibility to the diamond mining areas are limited, two different methodologies were used: the volume and grade approach and the content per kilometer approach.

Estimates are that approximately 39,000,000 carats of alluvial diamonds remain in the eastern and western zones of the CAR combined. This amount is roughly twice the total amount of diamonds reportedly exported from the Central African Republic since 1931. Production capacity is calculated to be 840,000 carats per year, a number that is nearly twice the 450,000 carats per year reported annually by the Central African Republic. The difference in the two numbers reflects the lack of sufficient data on diamond resource grades, worker productivity, and the number and locations of sites being worked.

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