



NIGER REPUBLIC



MINISTRY OF PETROLEUM

NIGER : A NEW EMERGING OIL & GAS NATION

**Dr. Amadou Hassane
Ph.D. Petroleum Geophysics**

Presentation Outlines



- 1. Presentation Of Niger Republic**
- 2. Exploration Opportunities and Production**
- 3. Existing Petroleum Infrastructures and Data Base**
- 4. Attractive Business Environment**
- 5. Conclusion**



1. Presentation Of Niger Republic

Niger Republic



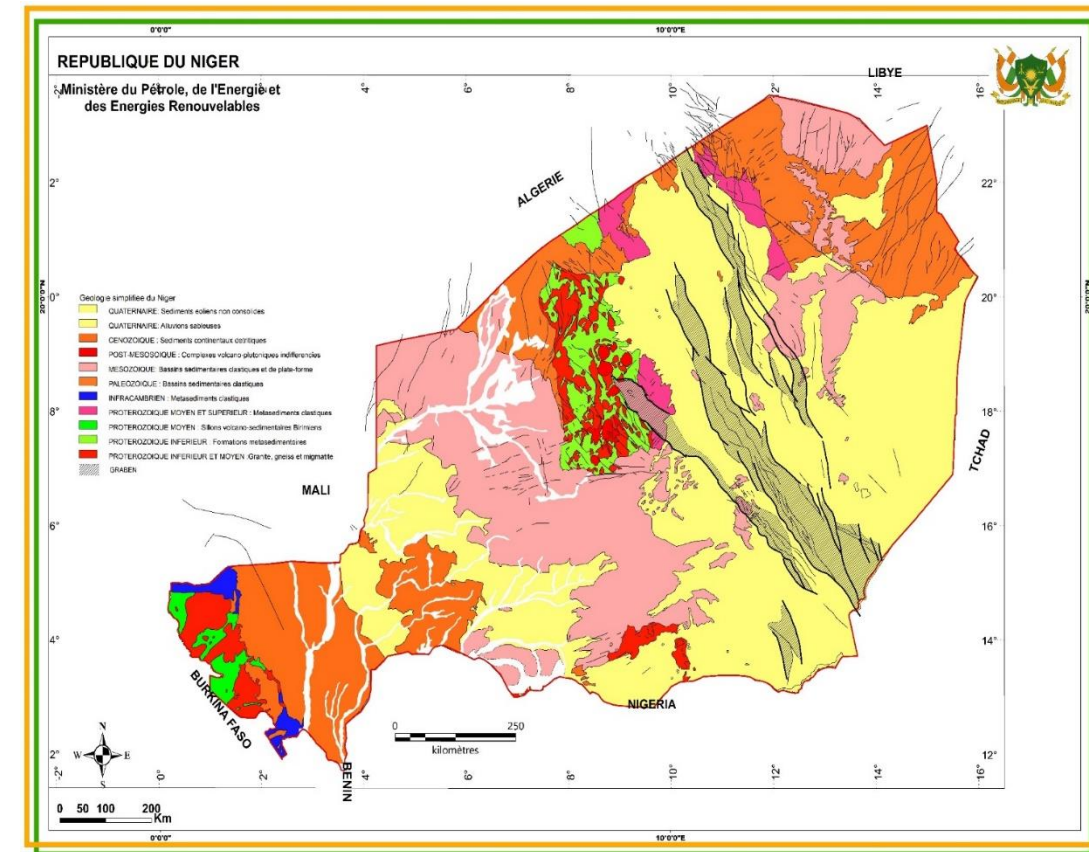
- Landlocked country, extending over 1,267,000 km²;
- The nearest port is nearly 700 km from the borders;
- Significant natural resources and considerable energy potential;
- One of the largest uranium producers;
- Oil production begun in 2011.



Frontier Basins: Promising New Oil Region



- Oil potential of Niger linked to Iullemeden, Djado and Termit basins
- Current production of 20,000 bopd
- New pipeline in progress – finished ending 2023
- Target production 200,000 bopd for international export
- 1,000 mmbbl 2P recoverable reserves discovered
- Resource addition through play extension
- Significant exploration potential through additional play opening
- Government support & Attractive operational, business and tax conditions .





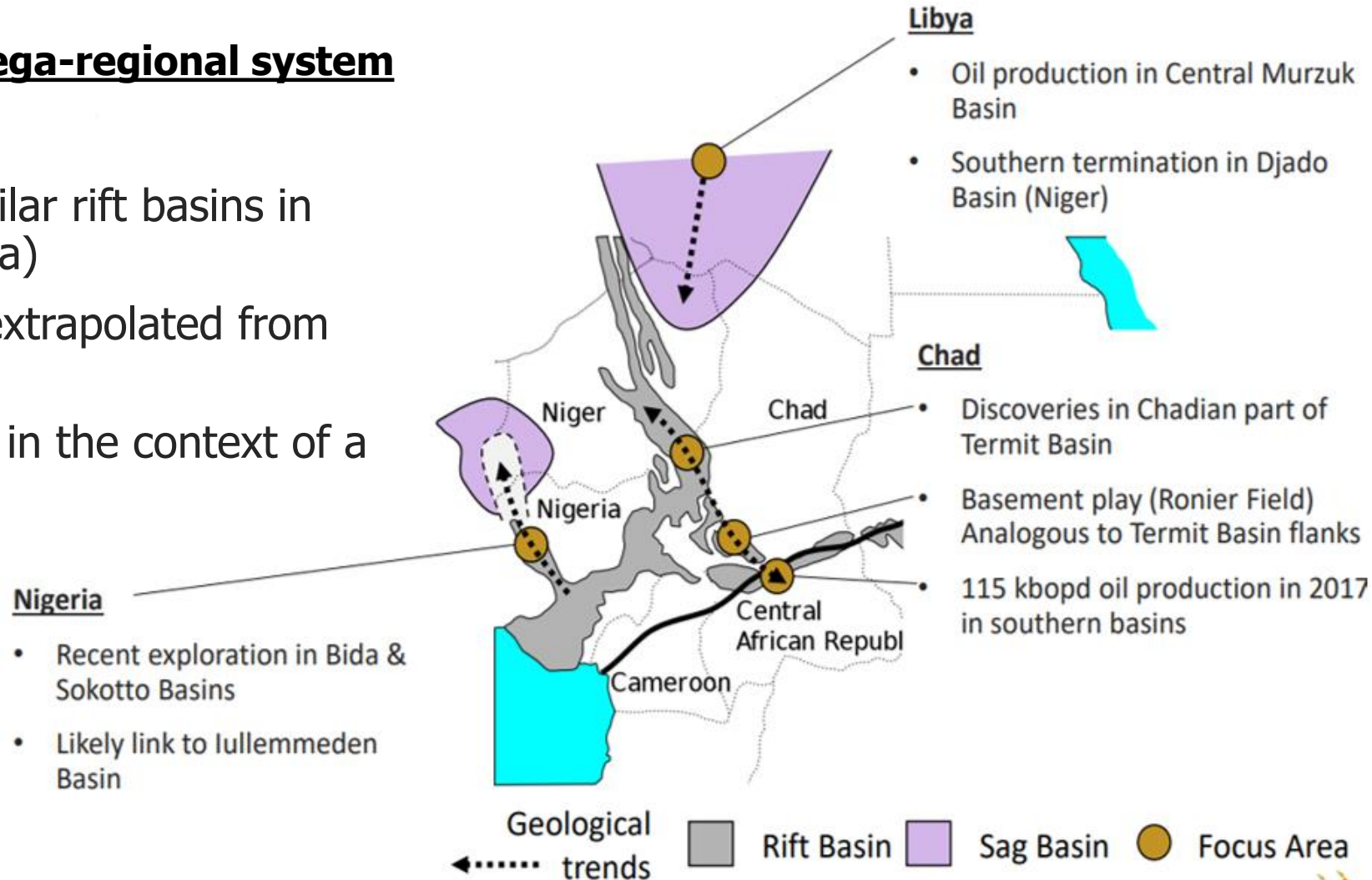
2. Exploration Opportunities and Production

Exploration & Production around Niger



The Republic of Niger is part of a mega-regional system

- Considerable oil production in similar rift basins in Chad (and to some extent in Libya)
- Exploration trends & ideas to be extrapolated from African neighbours
- Understand prospectivity of Niger in the context of a mega-regional view



Exploration & Production around Niger



Exploration

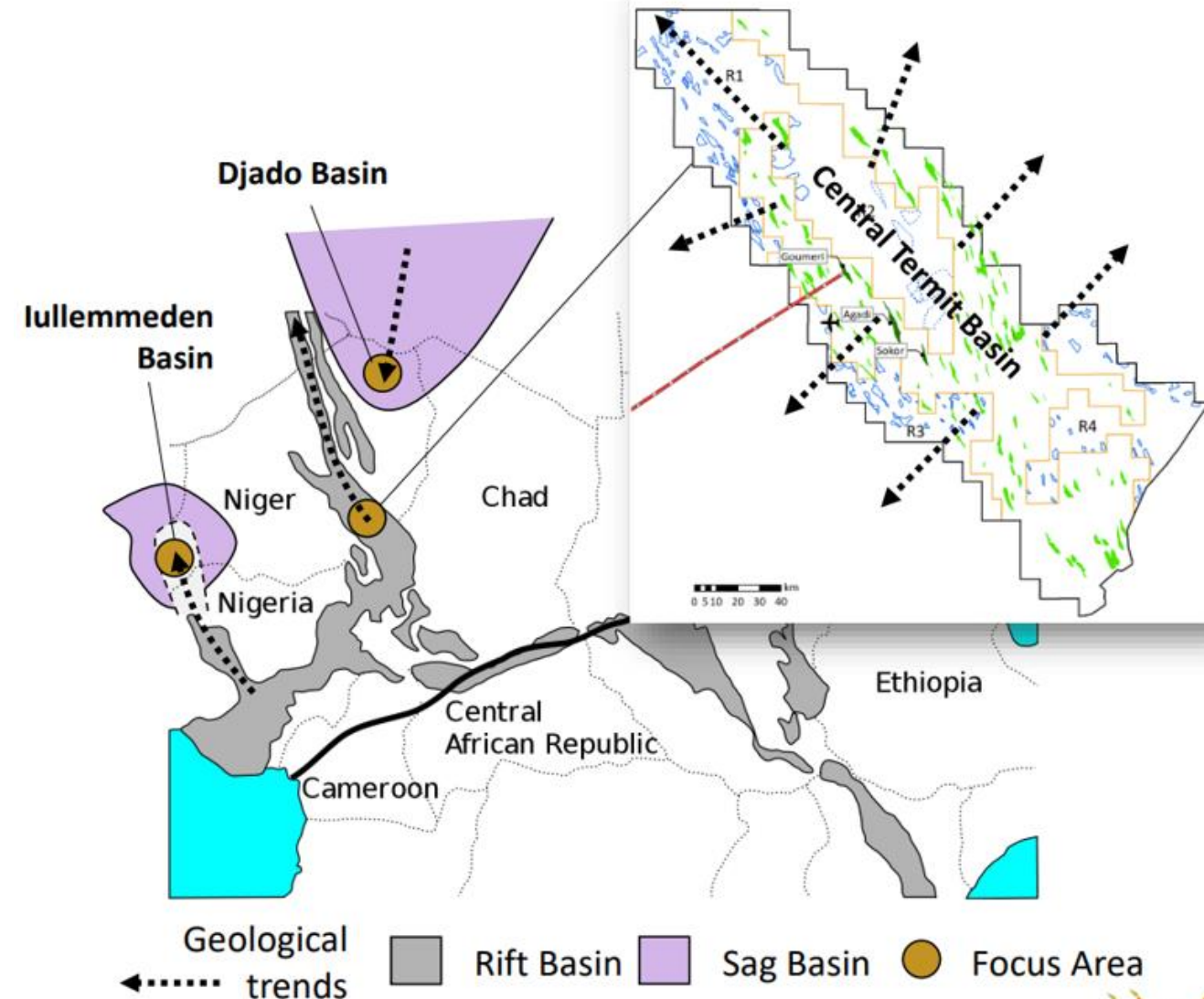
- Near-field Exploration in Central Termit Basin
- Play Extension in Termit Basin Slopes & Platforms
- Frontier Exploration in Northern Grabens, Iullemeden and Djado Basins

Resources

- > 1 billion bbo 2P recoverable reserves discovered and many gas discoveries in Central Termit Sub-Basin
- > 250 million bbo 2P recoverable resources discovered in Sub-Basin Kafra
- Development ongoing in Central Termit Basin & on East Termit slope

Production

- Current production of 20,000 bopd
- Export by ending 2023



Export Conditions

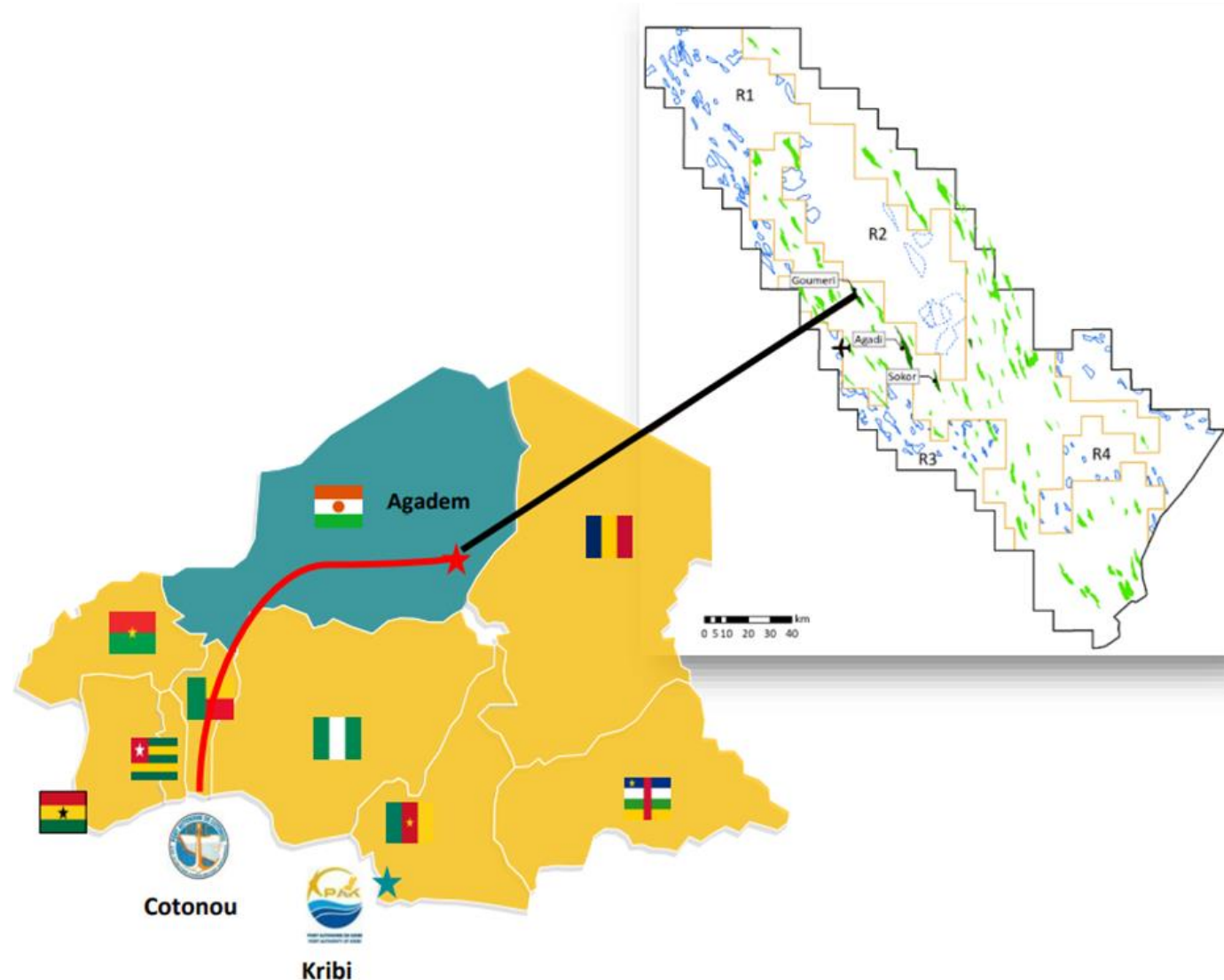


Current in-country capacity

- National market
- Pipeline 34,000 bopd
- Refinery 20,000 bopd

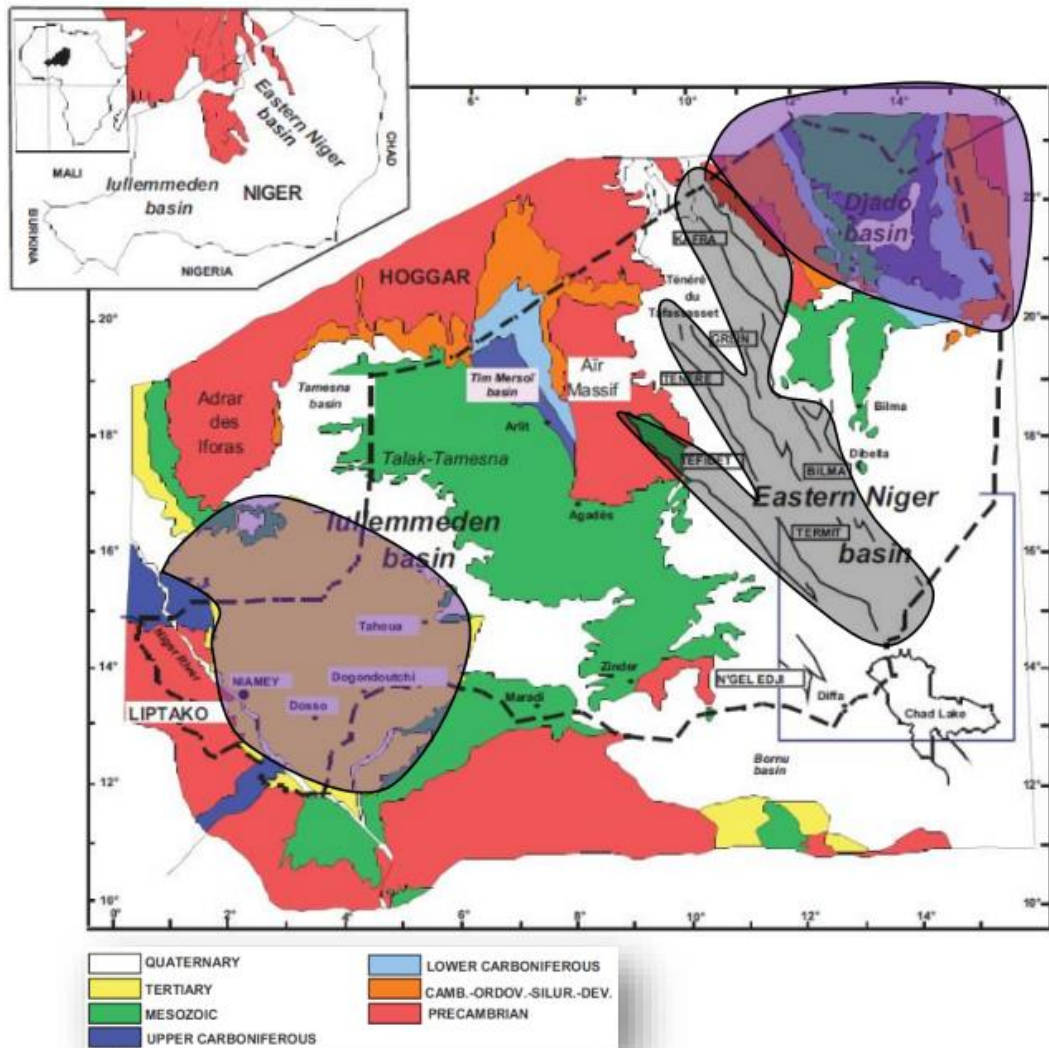
2023 international export capacity

- 200,000 bopd through pipeline of 1950 km Niger (Agadem) to Benin coast
- Construction work started on July 5, 2021
- Cost limited at US\$18 per bbl including Exploration, Development and Production costs





Niger Sedimentary Basins



Niger Graben System

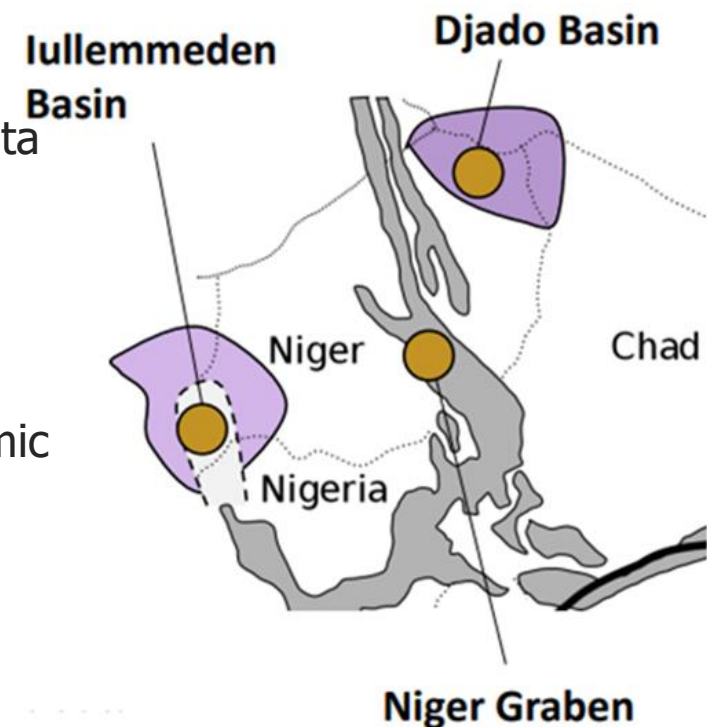
- Cretaceous to Tertiary rift basins
- Few outcrops but well & seismic data
- Proven plays & production

Djado Sub-basin

- Paleozoic to Mesozoic sag basin
- Many outcrops but few well & seismic data
- Play elements proven but no discovery so far

Iullemmeden Basin

- Paleozoic to Tertiary heterogeneous basin
- Limited outcrops and few well & seismic data
- Possible deep rift basin to be proven



Opportunities in Niger

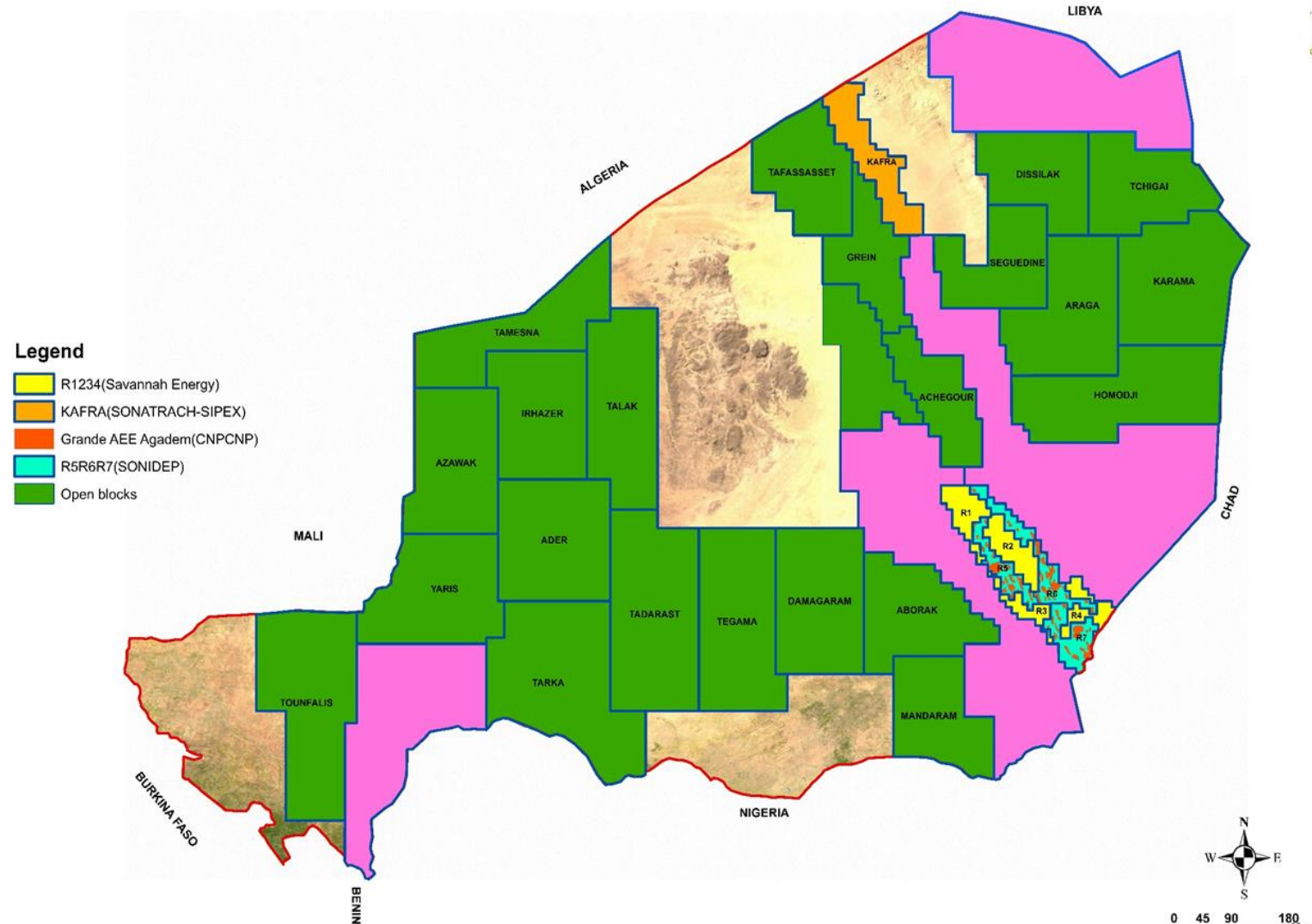


Frontier Basins

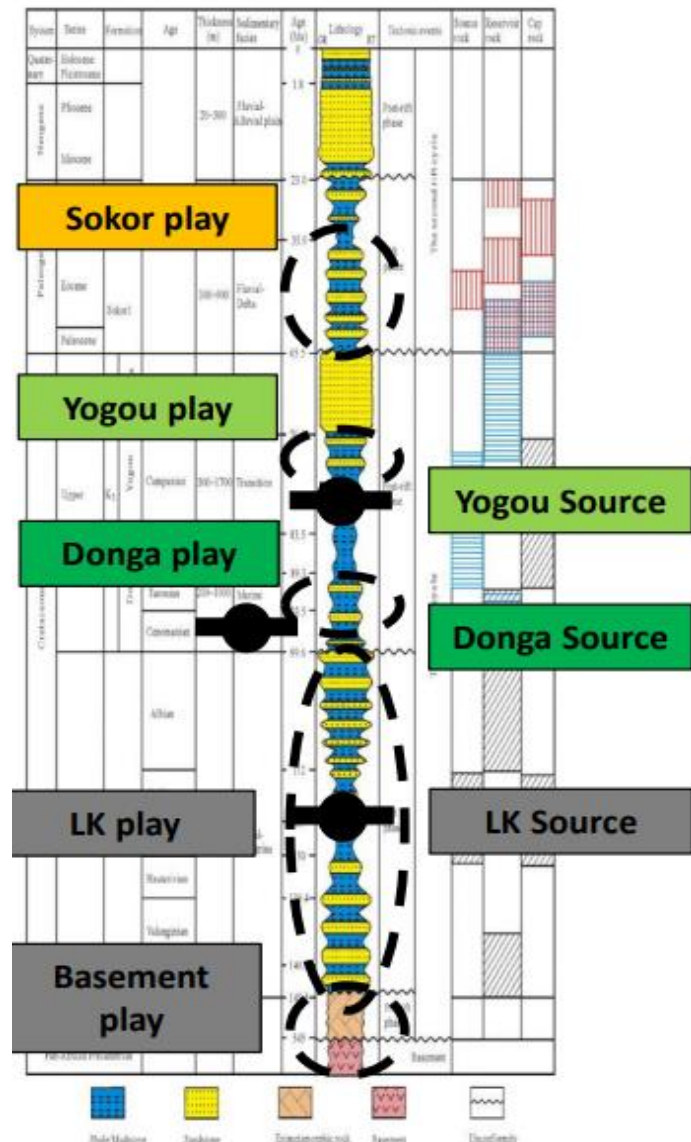
- Dallol (Iullemmeden Basin)
- Djado 1-4 (Djado Sub-Basin)
- Ténéré (Tenere Sub-Basin)
- Ténéré Ouest (Tefidet Sub-Basin)
- R1 Bilma (Bilma Sub-Basin)

Play Extension

- Bilma (East Termit Slope)
- Dibeilla 1 & 2 (East Termit Slope)
- Manga 1 & 2 (West Termit Slope)
- Ténéré (West Termit Platform)



Rift Basins



Proven reservoirs

- Tertiary fluvio-deltaic Sokor Fm (phi 18 - 30%; k 250 – 700 mD)
- Upper Cretaceous deltaic-marine Yogou Fm
- Upper Cretaceous transgressive marine Donga Fm

Deep plays

- Lower Cretaceous assumed (proven in Ténéré Basin)
- Basement play proven in Bongor Basin, Chad

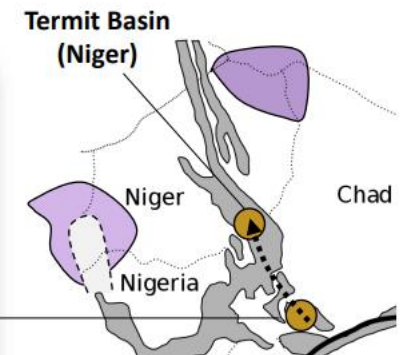
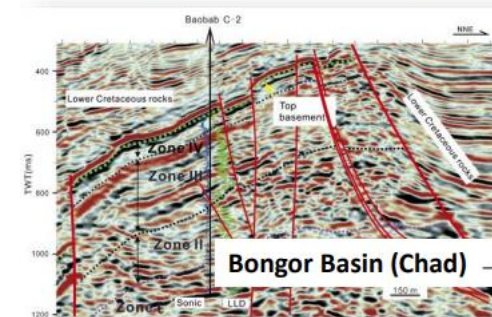
Trap & Seal

- Structural closures
- Top and fault seal
- Consistent success rates

Source & Fluids

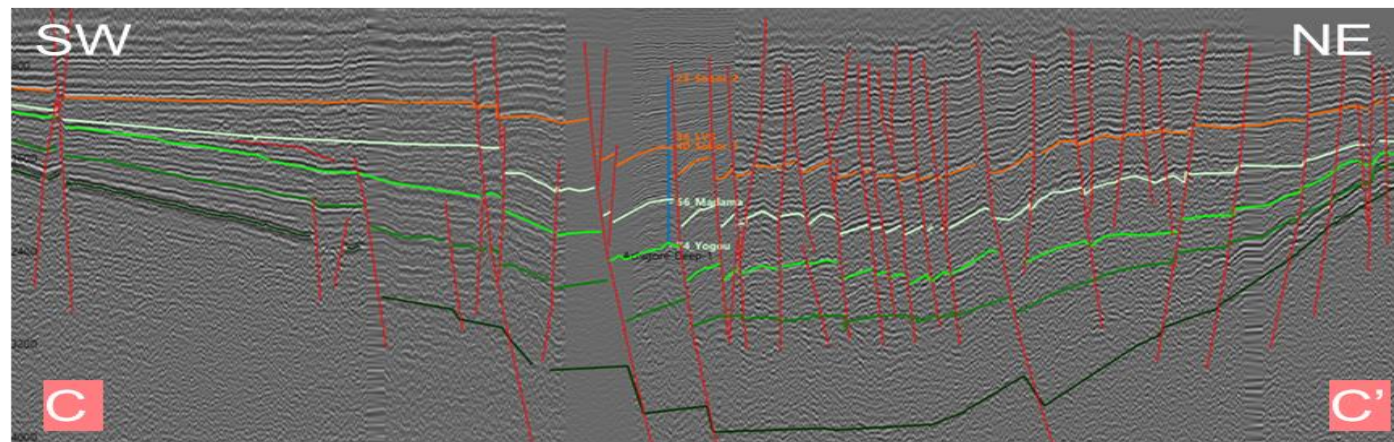
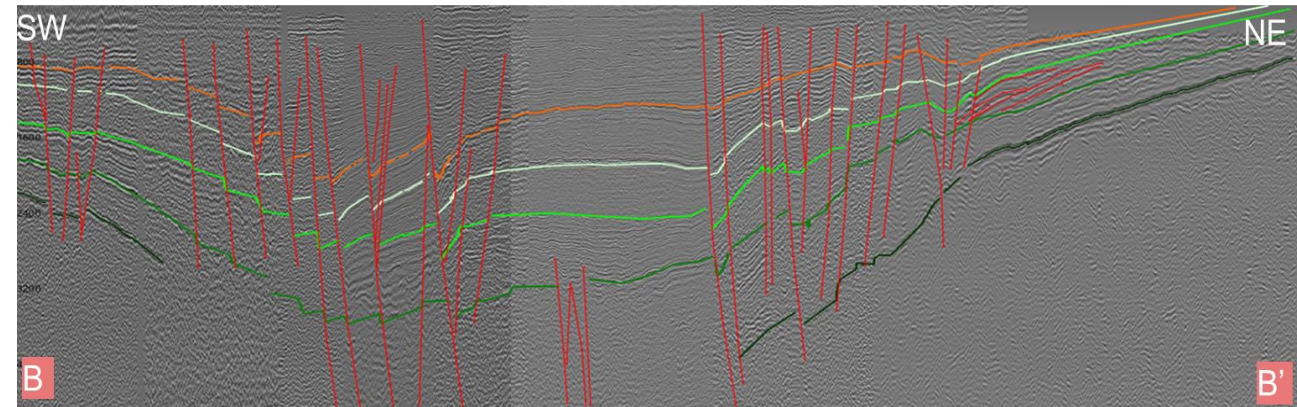
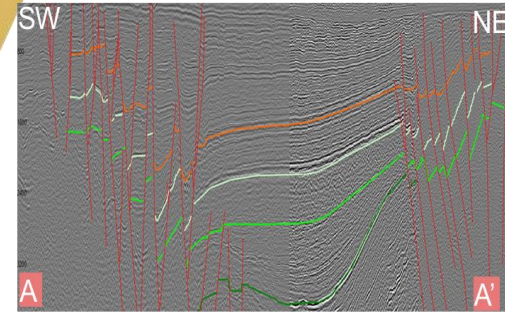
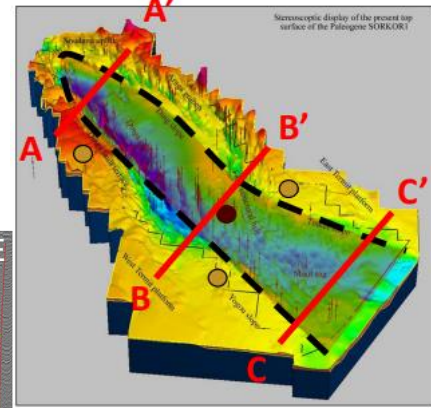
- Abundant charge
- Marine source rocks Yogou & Donga Fm and Lower Cretaceous (Ténéré)
- 24 – 36 °API oils

From: Precambrian basement reservoirs: Case study from the northern Bongor Basin, the Republic of Chad [Lirong Dou – AAPG 2018]



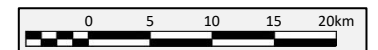
Rift basin Structure

- Basin symmetry changes from North to South
- Sag areas and highly faulted areas
- Basin infill from Lower Cretaceous to recent strata



Seismic picking legend:

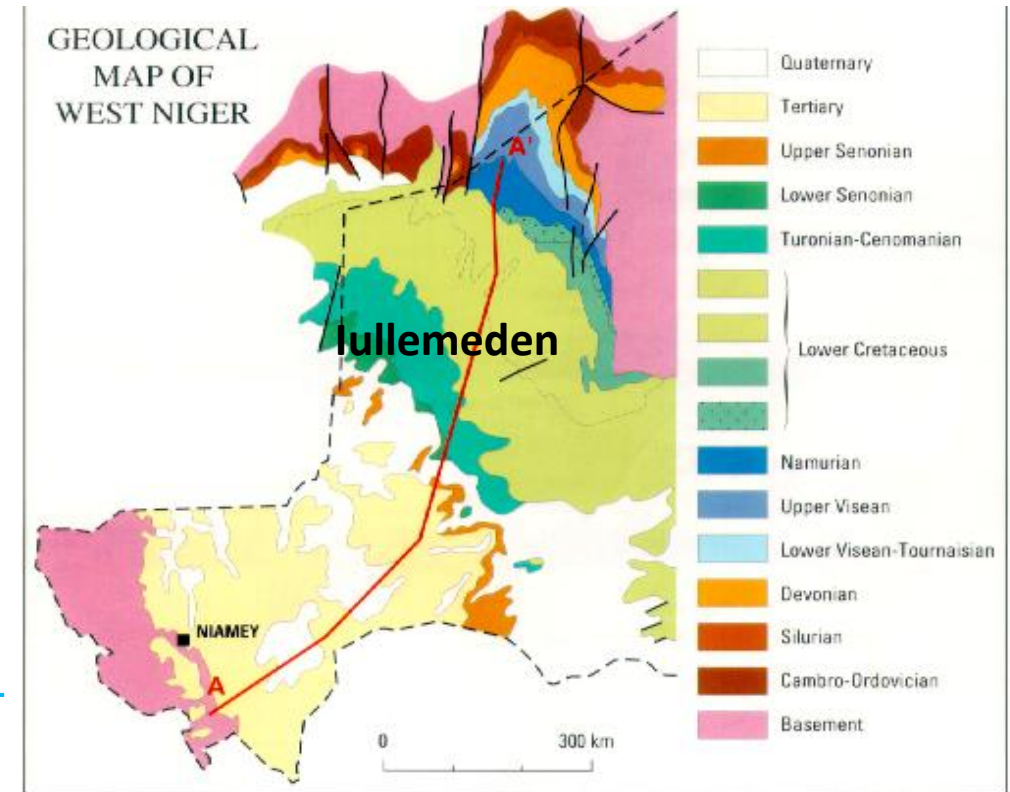
- Near Top Sokor 1
- Near Top Madama
- Near Top Yogou
- Near Top Donga
- Lower Cretaceous



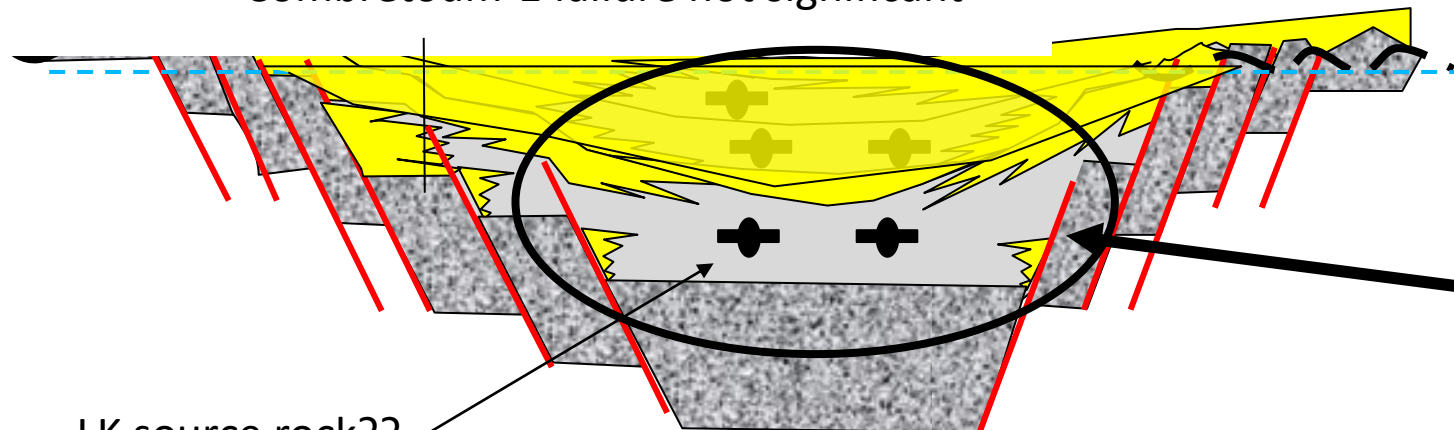
Iullemeden Basin



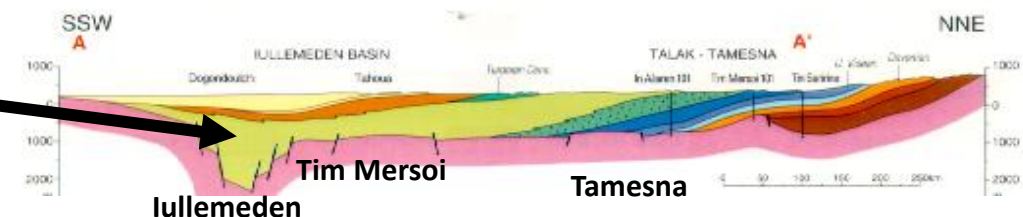
- Genetically related as part of the LK rift system?
- Lower Cretaceous Play might be very interesting
- Source proven in uplifted Ténéré Basin
- Lower Cretaceous Play successful in Chad



Combretoum-1 failure not significant



LK source rock??

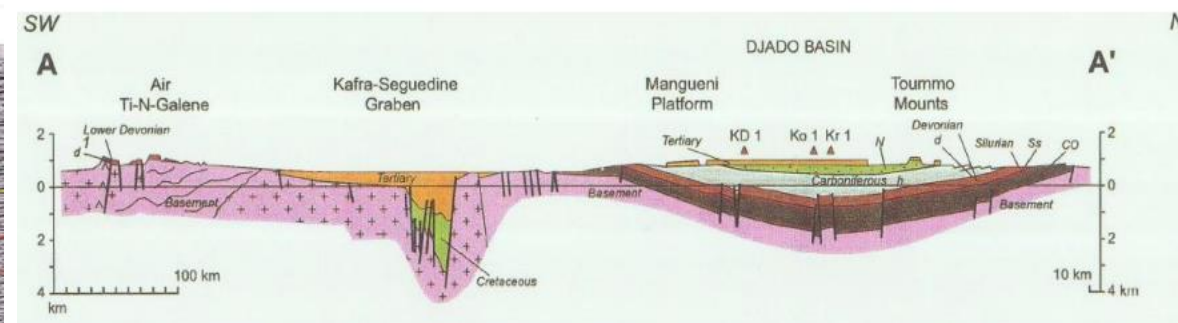
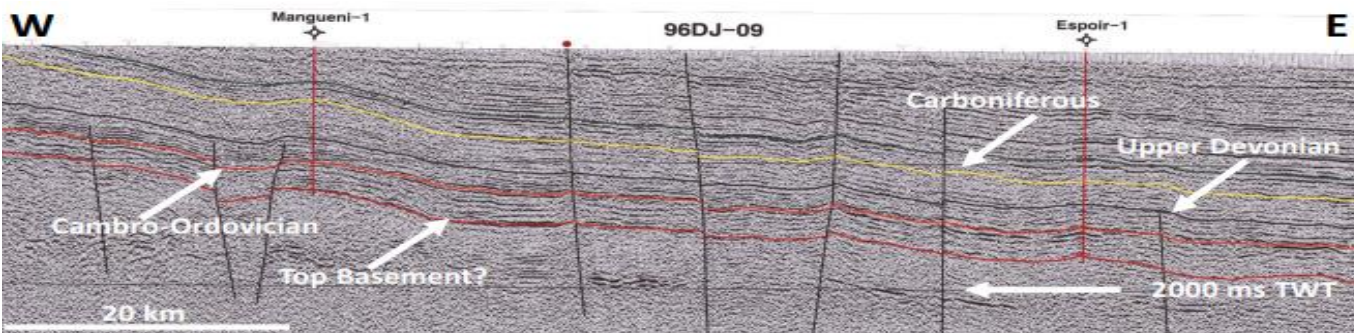
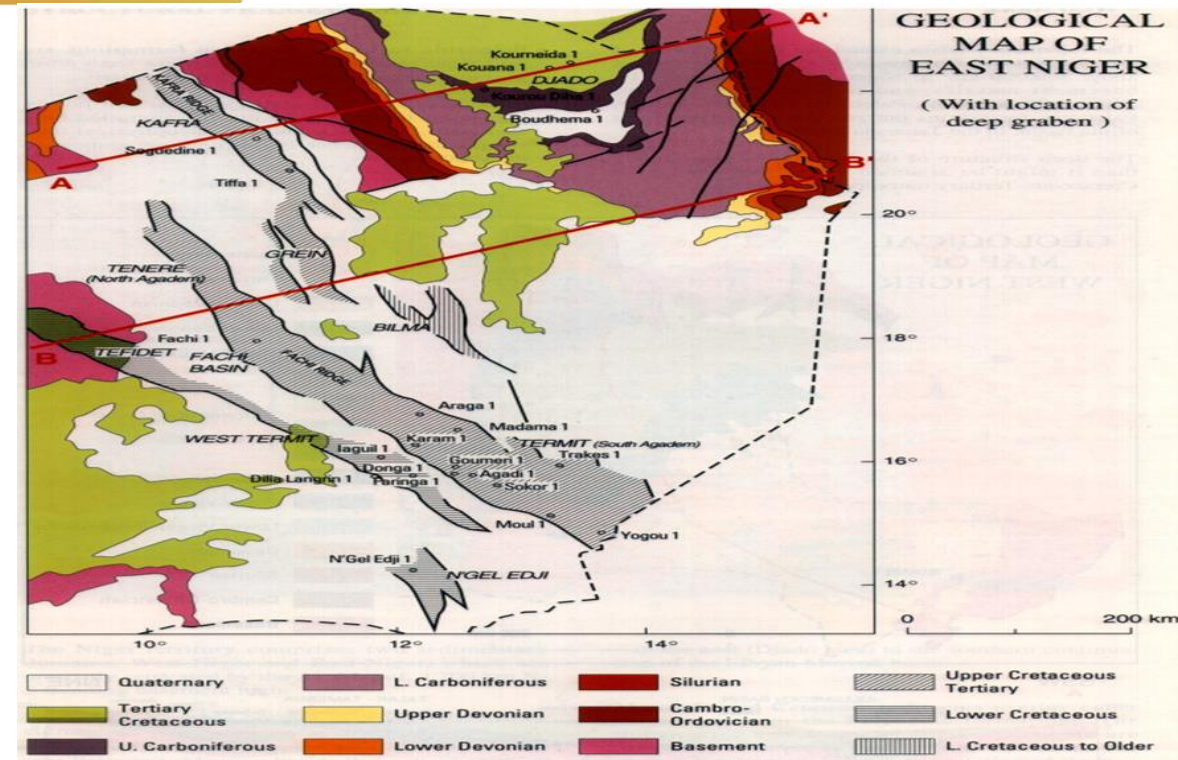


Dr. Amadou Hassane

Djado Basin



- Good reservoir: Devonian to Ordovician
- Charge proven: lateral migration from Northern (Libyan) Devonian source
- Seal deposited
- Structural and stratigraphic traps possible but need to be well defined
- Frontier exploration (Ordovician, Silurian & Devonian Plays)
- Individual petroleum systems elements proven



Oil Blocks

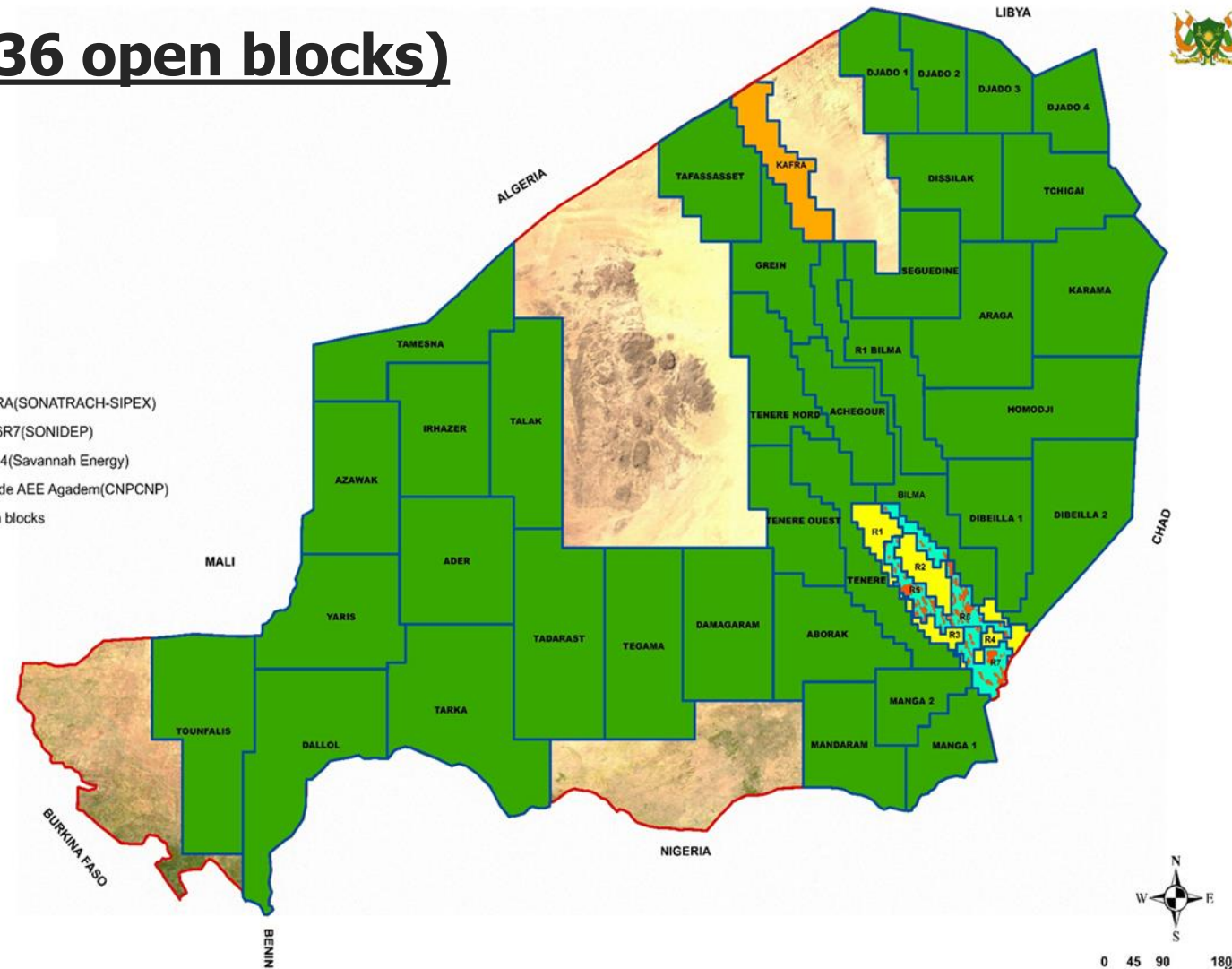


44 oil blocks (8 under license and 36 open blocks)

- Exploration work needs to be done;
- Reprocessing and reinterpretation 2D and 3D seismic for prospect generation and/or for regional framework;
- Wildcat or stratigraphic well drilling;
- New 2D and/or 3D seismic acquisition & interpretation for lead to prospect maturation or structural delineation of basin & lead mapping;
- Airborne geophysical exploration (gravity/magnetics) to derisk basin presence.

Legend

- KAFRA(SONATRACH-SIPEX)
- R5R6R7(SONIDEP)
- R1234(Savannah Energy)
- Grande AEE Agadem(CNPCNP)
- Open blocks





3. Existing Petroleum Infrastructures and Data Base

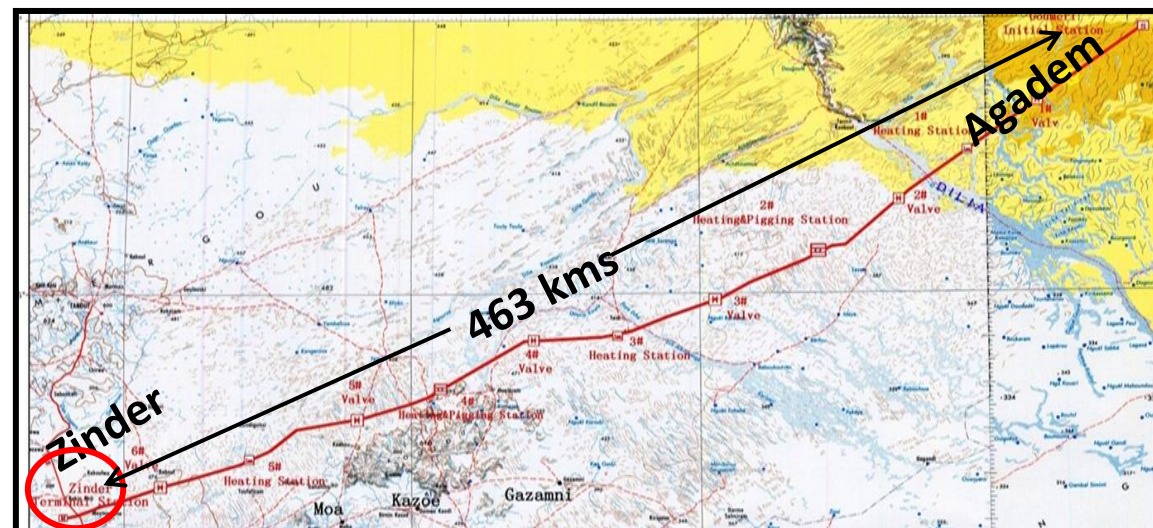
Existing Pipeline and Processing Facilities



- Construction and commissioning
 - ❖ CPF, FPF, BS;
 - ❖ of a 463 km pipeline from Agadem to the Zinder refinery with 34,000bbl/d capacity pumping stations;
 - ❖ Refinery: 20,000bbl/d capacity



- Production from 3 oil fields;
=> Additional transport capacity available



High Quality Data



Niamey Petroleum Data Center (CDP)

- Process for access: lump sum payment

Well data

- 430 wells
- Logs
- Cores & Cuttings

Geophysical data

- 13,260.23 km² 3D seismic data
- 50,000 km 2D seismic data
- 94,000 km gravity-magnetics data
- 2,691 km TFEM 2D



Export Pipeline

- Niger-Benin pipeline project of 1950 km
- 20" diameter from Agadem to Atlantic Sea;
- 15 km long maritime section with a single point mooring system
- 200,000 barrels against a planned production of 90,000 bpd for CNPC;
- Open to third parties without price discrimination rules
- Construction work began on July 5, 2021,
- 70% completed, will be operational by ending 2023





4. Attractive Business Environment

Operational Environment



Business friendly environment

- Maximum exploration period: 8 years (in case of discovery: 10)
- Production period: 25 years
- Low operating costs (18\$/bbl including exploration, development and production)
- Protective legal regime (stabilization, arbitration, etc.)
- Supportive administration
- No security hazard in the region
- Efficient supplier and subcontractor base (drilling rigs, seismic crews, EPC)

Attractive tax regime

- Royalty: 12.5%
- Cost Stop: 70%
- Tax Oil: 40% - 60% (based on contractor's profitability)
- State Carried interest: 15%
- VAT exemption
- Duties exemption during exploration and first 5 years of production
- Exemption of most other taxes (incl. Income Tax, Dividend Tax)

Simple and Transparent Blocks Allocation Process



- Block selection: data center access (CDP);
- Data analysis and choice of block(s);
- Application (proof of technical and financial capacity);
- Negotiation of the PSC (Signature bonus, work program, local content and SR);
- Approval of the PSC by the Council of Ministers;
- Signature of the PSC;
- Granting of the EEA.

3 months Maximum

5. CONCLUSION



Niger - A Very Promising New Oil Region

- Expanding production and export conditions
- Resource addition and exploration potential
- Operational environment and Government support
- Attractive operational, business and tax conditions
- Under control Security situation, despite the threat in the sub-region

Contact



Ministry of Petroleum,

Telephone : (+227) 20734582 / 20733969

email: petroleniger@gmail.com

**MERCI DE VOTRE AIMABLE
ATTENTION !**