

Exploration and uranium mining in Niger

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Niger is a Sahelian country bordered by Algeria and Libya to the north, Mali and Burkina Faso to the west, Benin and Nigeria to the south and Chad to the east. Niger has approximately 17 million habitants in the last census (2013) and covers an area of 1.27 million km². Niger's climate is very hot and dry (45-50°C in the hot season, 30°C in the winter), daily ranges of temperature vary from 20 to 30°C. There is a rainy season with light rain fall (40 mm) extending from June to September.

Niger's economy is centered on subsistence agriculture, animal husbandry and uranium production. Uranium exports accounted for 70% of the national export economy during the 1970s, but falling prices have caused the contribution from uranium to shrink substantially in recent years.

Uranium ore deposits in the Niger Republic are located in the western part of the country, west of the Aïr Mountains. The Arlit site is located 250 km north of Agadez, and 1200 km north-west of Niamey, the capital of Niger.

After the discovery of the first uranium occurrences in 1956, systematic exploration programmes were conducted between 1960 and 1968 along the western sedimentary margin of Aïr Mountains, in North Central Niger by French company CEA. These programmes led to the discovery of several uranium deposits including the Arlit and Akouta deposits which are presently being mined respectively by SOMAIR and Cominak. Further works by CEA and its 100% subsidiary COGEMA and other companies consisted basically in follow up of the different targets outlined by the above programmes.

The rocks hosting the uranium mineralisation are commonly arenites of the Carboniferous age Guezouman and Tarat Formations. Some beds within the Tchirozerine Formation of Jurassic age and the Irhazer Formation of Cretaceous age also contain uranium. The depositional environment of these formations was fluvial to deltaic. Apparently uranium was leached from the basement. Tectonic, lithological and geochemical features are important in trapping the mineralisation which is often of roll front type, either reduced consisting in pitchblende and coffinite (Akouta, Arlit, Afasto, Madaouela) or oxidized (Imouraren).

The main exploration companies of Uranium in the basin of Tim Mersoï (Northern Iullemeden) are:

- AREVA-Niger for the uranium-bearing prospecting permits of Imouraren, Afouday, Agebout;
- Cominak for the uranium-bearing prospecting permit Western Afasto;
- NorthWestern Mineral Ventures Inc for the uranium-bearing prospecting permits Irhazer and Ingal;
- North Atlantic Resources Ltd. for the uranium-bearing prospecting permit Abélajouad;
- CNUC for the uranium-bearing permit of Tiguida
- Goviex for uranium permit of Madaouéla;
- International Uranium Ltd for the uranium-bearing prospecting permits of Agelal I, II, III, IV and Aserka I, II, III, IV;
- Total Uranium Corporation for the licences of Chock Negouran I, II, III and IV;
- Trend Field Holding SA for the uranium-bearing prospecting permits Tagaza II and IV.