North Africa Research Group
www.narg.org.uk

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MANCHESTER 1824
The University of Manchester

NARG activities in Mauritania: report and state of the art – July 2017

The intention of expanding NARG activities to Mauritania has been on the NARG agenda since a few years as it has been seen as a key step in expanding the knowledge and source-to-sink models developed in Morocco to the entire rifted margin of NW Africa. Two components have been identified, i) constraining vertical movements in the areas of potential sediment source using low-T geochronology tools and ii) seismic data to constrain the geometry of siliciclastic sediments in the offshore and how they are linked to the source areas.

Establishing contacts with the relevant Mauritanian authorities and organizations was not a fast process, but things eventually led to a two-weeks mission which took place in February 2017. The mission was performed by Dr. M. Gouiza (Univeristy of Leeds) and myself and was only possible because of the great support provided by *C. Lekhbir* of the Ministry of Petroleum and Energy Resources.

Low-T geochronology. The most important success of the mission was the collection on a substantial amount of samples for low-T geochronology. Samples were taken from all relevant units stretching from the Reguibate Massif in the North (already relatively well known from previous studies) to the basement outcrops at the boundary with Senegal in the South (target of the next campaign) (*Fig. 1*). It is worth noting that these samples will form the first data base worldwide on low-T geochronology data from Mauritania.

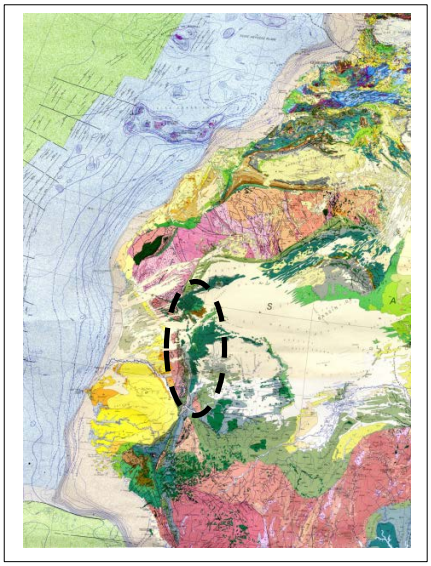

Figure 1 - NW Africa and the area sampled for low-T geochronology

Field work would not have been possible without the support of the *Office Mauritanien des Recherches Geologiques* of the I.R of Mauritania. The director *El Hachemy Ould Sidaty* and the adjunct Director *Abdellahi Ahmedou Bellal* of the OMRG are gratefully thanked for the support they have given. The OMRG not only provided two vehicles with drivers and cook but also a geologist whose profound knowledge of the area made it possible to sample outcrops even in the remotest places (*Fig. 2*).

Figure 2 - Impressions from the field

The samples have safely reached Delft and are now being processed. First inspection suggests that the samples contain enough high-quality apatite crystals to perform successful measurements. We expect to have the (U-Th)He ages ready for the autumn 2017 and the Fission Track data for the beginning of 2018. Interpretation and time-temperature modelling will start immediately thereafter.

Seismic data. During the mission of February 2017 we have spoken with a number of representatives of the *Societè Mauritanienne des Hydrocarbures et de Patrimoine Minier* (SMHPM), namely the General Manager, Mr. *N'Guissaly Fall*, the Director of the Sector Petroleum Mr. *Tourad Abdel Baghi* and the Head of Exploration and Promotion Department Mr. *Chemsidine Sow Deina*. In addition we had meetings with Mr. *Moustapha Bechir*, Directeur of the Direction Generale des Hydrocarbures of the Ministry of Petroleum, Energy and Mines. All parties have confirmed their strong interest in developing a collaboration. This is particularly the case of the Ministry which is the formal owner of the seismic data in the republic of Mauritania. Memoranda of Understanding are being discuss but progress is less swift than we would wish. A follow up visit in the last quarter of 2017 is planned to speed up the process.

Contact with The University of Mauritania. A strong collaboration with the local Universities, their research and teaching personnel as well as their students, is a key component of the approach adopted by NARG. During the mission, we have spoken with the Secretary General of the Universitè des Sciences, de Technologie et de Medicine, Prof. *Mohamed Awa*. Discussions were very useful and both organizations have expressed their strong interest in developing an intensive collaboration. A Memorandum of Understanding capturing the relevant main features is being discussed. A further visit in the last Quarter of 2017 will be useful.

Prof. Giovanni Bertotti – Delft University of Technology

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