

Tanzania: Selous Game Reserve at Risk Through Unsustainable Developments

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The World Heritage site Selous Game Reserve (SGR) in the southwest of Tanzania is one of the largest wildlife conservation areas in Africa, covering approximately 51,000 square kilometres. SGR has significant concentrations of elephant, black rhinoceros, cheetah, giraffe, hippopotamus and crocodile, among other species, and was inscribed on UNESCO's World Heritage List in 1982¹.

For several years, the Government of Tanzania and various companies have pursued plans for major industrial developments inside the World Heritage property, such as the Mkuju River Uranium Project and the Stieglers Gorge and Kidunda dams. In 2012, the World Heritage Committee decided "in an exceptional and unique manner to approve the proposed boundary modification of the Selous Game Reserve" and thus opened the way for the Mkuju River Uranium Project. The decision was in defiance of the Committee's own established principle that mining activities are incompatible with World Heritage listing. Protests followed and the decision remains controversial. Poaching has also become a severe problem in the SGR. In 2014, the WHC decided to inscribe SGR on the list of World Heritage sites in Danger and has retained it on this list since.

Two aspects of this situation are highlighted here:

1. What are the dangers posed by the Mkuju River Uranium Project to the SGR World Heritage property and its OUV?
2. To what extent has the State Party complied with the conditions and recommendations set by the World Heritage Committee in its decision of 2012?

What are the dangers of Mkuju River Uranium Project for SGR and its OUV?

The Mkuju River Project (MRP) is a uranium operation and thus entails the handling of radioactive materials, including uranium and approximately 25 decay products, many of which are much more radioactive and/or toxic than uranium itself. The waste products (tailings) contain about 85% of the original radioactivity of the ore and will remain radioac-

tive for thousands of years due to the long half-lives of some of the decay products. After 10,000 years, the radioactivity will have decreased only marginally; after 50,000 years it will have decreased to about 70%; and after 100,000 years to 43%. In human terms, tailings remain dangerous forever.



Fig. 1. Giraffes in the Selous Game Reserve World Heritage property.

Tailings at the MRP from the open-pit mine will amount to some 160 to 240 million tons (due to the low grade of uranium in the ore) which will need to be isolated safely from the environment for thousands of years. The mining operation will consist of a 120-square-kilometre checkerboard of open or re-filled pits, scats dumps, a tailings-storage facility (TSF), diverted creeks, an erased hill, a uranium mill and a mining camp (Fig. 2).

Tailings are in the form of slurry and will be stored behind a dam at MRP. Dams sometimes break. The UN Environmental Program and the International Commission on Large Dams have stated that on average "one major tailings dam incident occurs each year". The World Heritage Committee has repeatedly called for "disaster preparedness". At the MRP operation, there remains the question of how to prepare for a million-ton leakage or spill from the TSF. Management of tailings is a serious technical and financial task. MRP has no adequate plans to store tailings safely in the long run. Similarly, Tanzanian laws and regulations have no provisions to secure the financial means for appropriate handling of tailings after the mine has closed.

¹ <http://whc.unesco.org/en/list/199>

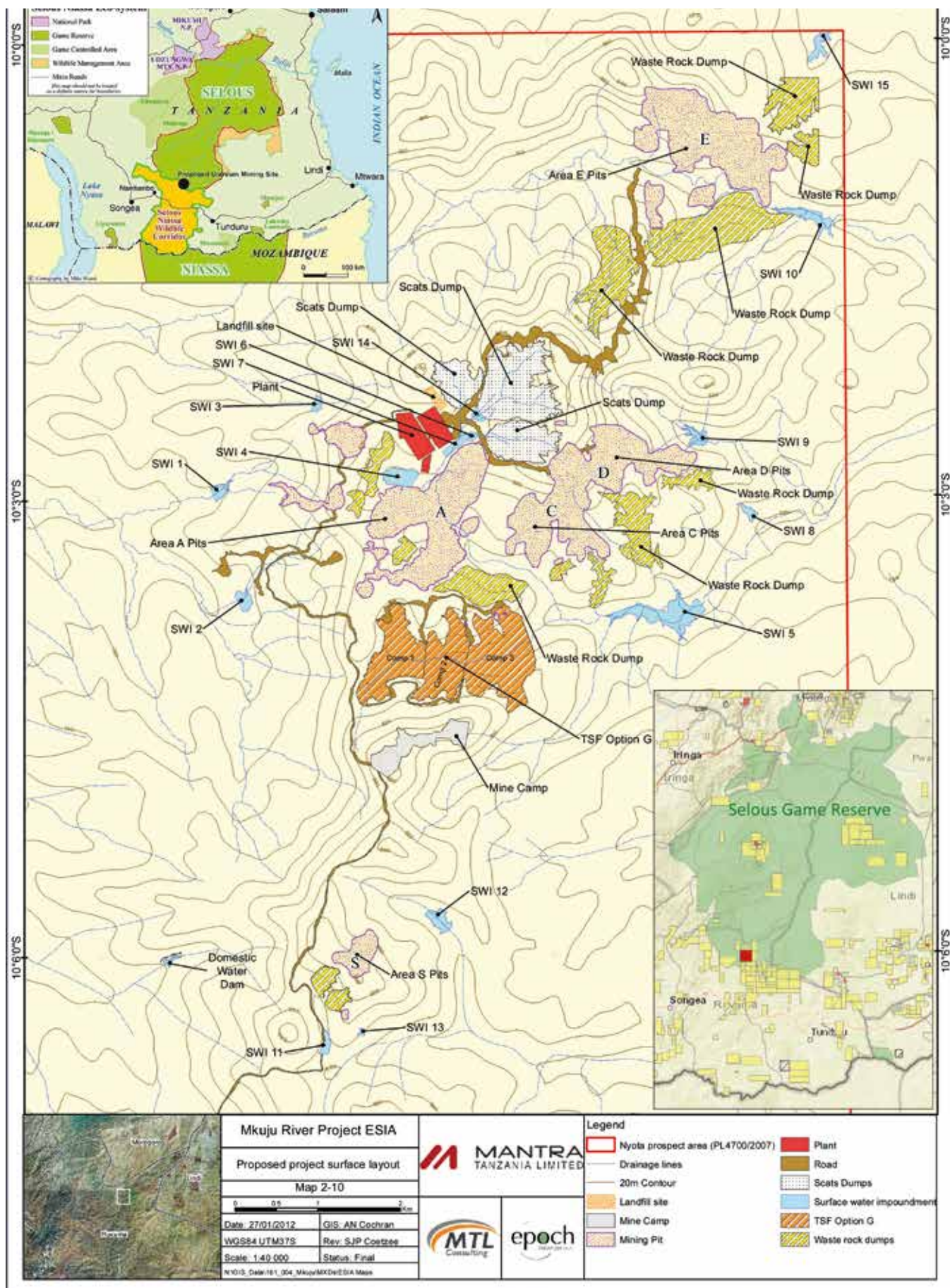


Fig. 2. Project layout of Mkuju River uranium mine with open-pits, tailings storage facility and dump sites. Insets show location of mine site within Selous (top left) and Prospecting Licenses within part of the property (bottom right)

The long-term risks posed by uranium mine tailings are in contravention of the aims of the World Heritage Convention (Article 4). Uranium-mine tailings should therefore not be placed in or adjacent to a World Heritage site.

Compliance with WH Committee “conditions and recommendations”

(a) No more mining activities in WHS SGR

In 2012, the World Heritage Committee decision requested the State Party ‘not to engage in any mining activity within the Selous Game Reserve World Heritage Property ...’ (36 COM 8B.43, 7(c))

Although the State Party stated that there would be no new prospecting licenses (PL), the cadastre map (on Fig. 2) of the Ministry of Energy and Mines still displays approximately 40 PLs inside the SGR, some 29 of them granted after the above request by the Committee². In 2016, the Committee reiterated “its utmost concern” about:

1. the ongoing lack of clarity in terms of the extraction method, water monitoring and disaster preparedness as regards the Mkuju River Project (MRP), ...
2. the legal possibility of mineral exploration and exploitation in the property and the overlapping mining and prospecting licenses, despite the commitment made by the State Party to not engage in any mining activity within the property, in line with the established position of the Committee that mining and oil and gas exploration and exploitation are incompatible with World Heritage status ...” (40 COM 7A.47)

Five years after its 2012 decision, there is no satisfactory progress on the implementation of the Committee’s request to refrain from mining activities inside the SGR.

(b) Respect the economic and social needs of workers

In 2012, the World Heritage Committee’s decision urged the State Party to ensure “that economic and social needs of the local population and workers are respected and that social conditions in and around the Selous Game Reserve, in particular linked to the Mkuju River Mining site, are subject to monitoring”. (36 COM 8B.43)

The MRP Environmental and Social Impact Assessment (ESIA) shows serious deficiencies in public participation, major parts of which were done through “one-on-one” consultations with officials. It remains unclear how the Committee’s call “to respect economic and social needs of the local population ...” will be implemented aside from the promise of jobs.

(c) (Lack of) Compliance with IAEA and international standards

The World Heritage Committee, in its decision of 2012, urged the State Party to ensure that “the mining activity and processing of the uranium is carried out corresponding to state-of-the-art international standards in adherence to International Atomic Energy Agency (IAEA) rules governing the processing of uranium materials”. (36 COM 8B.43)



Fig. 3. An aerial overview of the Selous Game Reserve World Heritage property

In 2015, an IAEA mission spotted grave shortcomings in Tanzania’s laws and regulations regarding radiation protection and the implementation of those laws. It said “with strong commitment from the Government ... the regulator [referring to TAEC – Tanzania Atomic Energy Commission] has an opportunity to become an independent, strong and effective body”, thereby inferring that the TAEC is currently neither strong nor independent.

- The IAEA criticized the lack of clear delineation between the responsibilities and functions of the Ministry of Energy and Minerals and the Tanzania Atomic Energy Commission (TAEC)³. A later report of the IAEA Uranium Production Site Appraisal Team (UPSAT) mission to Tanzania stated that, among other shortcomings:
- The 2012 ESIA should be updated to reflect current plans;
- Plans have changed considerably – for example, tailings and scats are located at different locations from those originally planned;
- Plans on TSF management are not sufficiently detailed;
- There is little information available regarding the uranium mill.

Currently, the Mukju River Project is far from compliant with IAEA and international standards.

² <http://portal.mem.go.tz/map/>; last updated 19 March 2017; viewed on 21 March 2017

³ IAEA 2015: www.iaea.org/newscenter/pressreleases/iaea-mission-says-tanzania-faces-challenges-radiation-safety-regulation

(d) The in-situ-leaching issue – WHC Decision 2015

In its 2015 decision, the World Heritage Committee urged the State Party “to ensure disaster preparedness and independent water monitoring prior to active mining, to provide a detailed description on the planned mining project, including details on the mining design, the extraction and processing methods and the measures foreseen to minimize contamination risks as well as an Environmental Impact Assessment (EIA) in the case of consideration of in-situ Leaching (ISL)”. (39 COM 7A.14)

In 2016, the Committee reiterated its utmost concern about “the ongoing lack of clarity in terms of the extraction method, water monitoring and disaster preparedness as regards the MRP”. (40 COM 7A.47)

The environmental licensing of MRP was based on the open-pit mining method. However, the company announced that it might change to in situ leaching (ISL), or a “first of its kind” combination of ISL and open-pit mining. ISL is currently advertised by the mining industry as an environmentally-friendly method. In fact, one of the preconditions for utilizing ISL is the confinement of the uranium ore body in order to avoid release of the leaching liquid (such as sulphuric acid) into the environment.

The 2012 MRP ESIA states: “This method can only be applied if the uranium deposit is located in porous rock, confined between impermeable layers and below the water table. Although the ore containing rocks at the MRP can be classified as porous and hence amenable to in situ leaching, there is a lack of confinement between impermeable layers. Unless the on-going drilling program proves otherwise, in situ leaching will be difficult to recommend under the current geologic conditions.”⁴

Clearly, the necessary precondition for ISL does not apply to Mkuju River; the Mkuju River deposits are therefore not suitable for ISL. In addition, a “first of its kind” combination of open-pit mining and ISL will impose incalculable risks on the adjacent SGR World Heritage property due to a lack of experience with such a combination. The World Heritage Committee’s repeated calls for clarification of the mining method and for a detailed description of the mining plan therefore remain unanswered.

(e) Other WHC conditions and recommendations

Information is lacking with respect to other issues. For example, in regard to the protection of the Selous-Niassa Wildlife Corridor, compliance and information are lacking.

Conclusion

1. Operation of a uranium mine, open pit or ISL or combination of both, and, more specifically, waste products such as uranium tailings pose a long-term serious danger to the OUV of the SGR World Heritage property. Such a project should not be located in or near a World Heritage property.
2. For five years, WHC has sought implementation of its 2012 ‘conditions and recommendations’.

The environmental impact assessment for the Mkuju River project has proven to be preliminary and incomplete. It fails to address the ISL issue. The IAEA and IAEA UPSAT mission confirm these concerns. Public participation has not taken place appropriately.

The IAEA pointed to a lack of clear delineation of tasks between relevant government agencies, affecting the efficiency of radiation-protection regulations and their implementation.

In order to resolve the lack of compliance with the Committee’s conditions and recommendations and to avert future damage to the property and its OUV, the excised area should be re-integrated into the SGR World Heritage property. Cancellation of mining licenses in areas overlapping World Heritage sites was demanded in 2014 by the joint NGO statement on no-go and no-impact measures for extractive activities in natural and mixed World Heritage sites⁵.

The World Heritage Committee set a noble precedence in 2013 when the Koongarra area, including a uranium deposit, was incorporated into Australia’s Kakadu National Park World Heritage property⁶.

⁴ MRP ESIA, Chapter 6, 6.4.1.2 Alternative 2: In-situ Leaching, pp 6-7

⁵ https://www.awf.org/sites/default/files/WorldHeritageSite_No-Go-Extraction.pdf

⁶ <https://australianmap.net/wp-content/uploads/2012/02/Koongarra-From-Project-to-Park-lowres.pdf>