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16 July 2024

Dear Sir,

OBJECTIONS TO THE PROPOSED MUSINA-MAKHADO ENERGY AND METALLURGY SPECIAL ECONOMIC ZONE SOC WATER USE LICENCE APPLICATION SUMMARY REPORT, MAY 2024

INTRODUCTION

1. We confirm that we act on behalf of The Herd Reserve, Living Limpopo, and the Centre for Applied Legal Studies ("our clients").

2. The following has reference:

    a. Water Use Licence Application Summary Report compiled by Matukane and Associates, dated May 2024;

    b. Integrated Water Services Report compiled by Matukane and Associates, dated August 2020; and

    c. Various correspondence between ourselves.

3. We have not burdened our objection by annexing copies of the aforementioned correspondence. In any event, they should form part of the records contained in the detailed public participation report which is required to be submitted in support of the IWULA as required by Regulation 19 and Annexure D of the Water Use Licence Application and Appeals Regulations, 2017 (WULA Regulations).

4. We submit herein our clients' objections to the WULA, in accordance with section 41(4) of the National Water Act, 1998 (NWA) and we reserve the right to supplement such objections when the outstanding material information is made available.

OBJECTIONS

Our clients object to the granting of the WULA on the following main grounds:

A. The procedure for public participation does not comply with Regulation 17 of the WULA Regulations read with Section 41(4) and Section 162 of the NWA

5. There have been consistent problems in obtaining access to the WULA application:

    5.1. The documents were only uploaded on 22 April 2024, 10 days after public participation purported to have begun;

    5.2. The WULA Summary Report and the Risk Assessment Report were uploaded only on 27 May 2024 (i.e. 45 days after the commencement of public participation);

5.3. The WULA consultants (“Matukane”) extended the public participation process for 30 days until 16 July 2024, however, we were still unable to open the links and assumed it was a problem on our side so repeatedly tried various methods to open them;

5.4. On 1 July 2024, we wrote to the Matukane as the links to the WULA did not open the documents. We further requested that a hard copy be sent to our offices. On 2 July 2024, Matukane responded with yet another link that failed to work.

5.5. On 8 July 2024, we sent a further email noting that this link was also defective and requested alternative methods for viewing the documents. Since the documents were not yet available a mere two weeks before the deadline, ALL RISE also requested that the comment period commence from the date on which the documents become available to us.

5.6. Matukane responded with an email linking PDF versions of several reports involved in the WULA. However, this email contained no acknowledgment of the request for an extended time period for comment. The email also failed to deliver all the WULA documents including:

5.6.1. Wetland Delineation Report;

5.6.2. reports and other technical documents submitted as referred to in Section 5.2, Table 3 of the WULA-

5.6.2.1. Master Layout Plan;

5.6.2.2. Alternatives and Impacts Mitigation Hierarchy;

5.6.2.3. Alternatives to boreholes in watercourses;

5.6.2.4. Impact of water abstraction on PES and EIS of watercourse;

5.6.2.5. Borehole Testing Guidelines;

5.6.2.6. Monitoring Plan;

5.6.2.7. Water Use License Application Report; and

5.6.2.8. Article 27 Report.

5.6.3. The main report is only a “summary report”, whereas it should be an Integrated Water and Wastewater Management Plan.

5.7. The reports that were shared with ALL RISE on 8 July 2024 include the WULA Summary Report, the Groundwater Specialist Report, and the Risk Assessment Report. In terms of Appendix D of the WULA Regulations, a Geohydrology Report is required. It is not clear whether the “Groundwater Specialist Report” provided adequately covers all that is required

as we have not had the time to properly assess the Report but reserve the right to do so and to submit further comments thereon.

5.8. On 9 July 2024, we sent an email to Matukane requesting the other eight separate reports that the WULA states have been submitted. We also requested a deadline extension as several reports were still missing only one week before the comment deadline.

5.9. Matukane's response to all I&APs on 10 July states that several of what appeared to be missing documents were part of the other reports. However, Table 3[1] specifically refers to them as separate reports. Moreover, the Groundwater Specialist Report was conducted by WDS Leshika, not Matukane.[2] However, Table 3 states that the documents Matukane claims were included in the groundwater study were compiled by Matukane, not WDS Leshika.

6. Therefore, we do not seem to have all the relevant reports, making it impossible to comment fully on the WULA.

7. Furthermore, the 10 July email acknowledges that one essential document, the "Article 27 Report", has not been shared with I&APs. It states that "aspects from the Public Participation Process may impact aspects of the Article 27 Report. This report will only follow at the end of the participation process".[3]

8. We assume that the "Article 27 Report" is a reference to the required Section 27 Motivation Report which must include–

8.1. existing lawful water uses;

8.2. the need to redress the results of past racial and gender discrimination;

8.3. efficient and beneficial use of water in the public interest;

8.4. the socio-economic impact -

8.4.1.1. of the water use or uses if authorised; or

8.4.1.2. of the failure to authorise the water use or uses;

8.5. any catchment management strategy applicable to the relevant water resource;

8.6. the likely effect of the water use to be authorised on the water resource and on other water users;

8.7. the class and the resource quality objectives of the water resource;

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[1] WULA Summary pg. 9
[2] Groundwater Specialist Report, pg. 1
[3] July 10th Matukane email to ALL RISE

8.8. investments already made and to be made by the water user in respect of the water use in question;

8.9. the strategic importance of the water use to be authorised;

8.10. the quality of water in the water resource which may be required for the Reserve and for meeting international obligations; and

8.11. the probable duration of any undertaking for which a water use is to be authorised.[4]

9. The Section 27 Report considers the impact of proposed water use on the applicant, the public and society, explaining the **benefits of authorising the proposed use, explaining the applicant's responsible approach to the water use and on what grounds an application should be considered as it relates to the unique South African context and the government's strategic goals.** All of the above is vital information that requires the Section 27 Motivation Report to be included in the WULA and the public participation process.

10. As this report will only be prepared after comments have been submitted, we request that the final WUL be circulated for further comment after the inclusion of the Section 27 Report.

11. Finally, the latest 10 July 2024 Matukane email once again fails to acknowledge the request for an extension of time to submit comments. The email states that "your involvement in this application is important. We, therefore, invite you to raise any concerns that you may have without delay and before the 2024/07/16 closing of this participation process….The public participation process is conducted according to the requirements stipulated in Government Notice No.R.267 of 24 March 2017. At the end of the process, a meeting will be held with the WULA case officer to discuss the process and I&AP interactions. This will guide any decision about possibly extending the public participation process".

12. As shown above, no rationale is given for denying an extension. That, along with the email addressing ALL RISE not by name but by "Dear I&AP", merely gives a copy-paste answer that demonstrates a lack of care in its engagement with concerned stakeholders.

13. As ALL RISE and other I&APs received documents late in the comment period and some documents remain unaccounted for, the WULA's public participation process is flawed and in of itself justifies a refusal to grant the license.

14. Further to this, section 17 of the WULA refers to the inputs and/or authorisations from other Departments and Stakeholders and contains NO input from any of them on the irrational basis that "the MMSEZ SOC, a state-owned company, is responsible for its implementation*, which implies the participation of other national and provincial department*s…" (Our emphasis). The fact that the application is brought on behalf of a state-owned company in no way absolves the EAP

[4] NWA pgs. 25-26

from obtaining input from all other departments and stakeholders. This further justifies a refusal to grant the licence.

B. Failure to Provide Adequate Information and/or to Consider the No-Go Option

15. Though the 10 July email states that the required sections concerning alternatives have been covered through the Groundwater and Risk Reports, those reports do not provide adequate information.

16. Regarding the report titled, "Alternatives & Impact Mitigation Hierarchy", Matukane states that this information is "covered in the WULA Summary Report (Item 12) and in the Section 21(c&i) Risk Assessment Report (Item 7)". However, WULA Item 12 contains only a table summarising mitigation measures and impacts. The table contains no information about possible alternatives.[5] Similarly, Risk Assessment Item 7 makes no reference to any alternatives considered". [6]

17. The Background section states that the WULA is to apply for the abstraction of groundwater from eight existing boreholes. Section 6.2 states that the boreholes are located on the site but "still need to be equipped". In the report titled "Alternatives to boreholes in the watercourses", Matukane states plainly that it has considered "no alternatives" (as the objective of this WULA is to authorise a set of existing boreholes). They then suggest that we "please refer to the Geohydrological Report for further detail". Referring to the "Groundwater Specialist Assessment" for further detail reveals that only four of the boreholes proposed are existing and four are new boreholes[7].

18. It is therefore not clear whether this WULA authorises both new *and* existing boreholes and further information needs to be provided in this regard.

19. If some of the boreholes are new, there are no grounds to ignore the consideration of alternatives. More importantly, neither the WULA nor the Groundwater Report make any comments about the more obvious alternative, that being the no-go option.

20. Under the section titled "Consideration of Alternative Production Areas", the WULA Summary states that the "MMSEZ and associated South African government departments have undertaken a multi-year process to identify suitable, available land, ultimately selecting this site through a rational process. The consideration of alternative production areas is not within the scope of this application".

21. However, without considering the alternative no-go option, it is clear that its necessity has not been established. This is especially true considering that they have failed to provide I&APs with the Section 27 Motivation Report.

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[5] WULA Summary pg. 23
[6] Risk Assessment Report pg. 35
[7] Groundwater Specialist Report pg. 48

22. Section 7 of the WULA states that "Singo Consulting identified thirteen small wetlands and freshwater features… including flat and seep wetlands. Three boreholes are less than 500 metres from wetlands…". Further to this, the WULA states that the Rehabilitation Plan's purpose[8] is "to ensure thorough restoration of watercourses or wetlands…". Yet, no Wetland Delineation Report is provided.

23. Appendix D of the WULA Regulations specifies what must be included in a WULA. It includes a Wetland Delineation Report.

C. The Proposed Usage Will Overexploit the Area's Already Stressed Water Resources

24. The proposed development for which this WULA is made is not socially, environmentally, or economically sustainable as the water use will exploit groundwater at a level to which its integrity is jeopardised.

25. The project's hired expert, WSM Leshika, states that "the proposed development will … only slightly increase the stress in the catchments"[9]. However, the following evidence points to the contrary:

    25.1. Currently, according to the DWS, the region has insufficient water supply, and people are already struggling for access to water, as all the water is already fully allocated.[10].

    25.2. In 2010, water demand exceeded water availability in the Sand River catchment by 4.5 Mm3a[11]. Water use has only grown since then.[12]

    25.3. Our clients' specialist, Dr. Munnik, states that "the Sand River catchment [where the boreholes will be located] already uses more water than it has available. The shortfall in urban requirements are met through transfers from other WMAs". [13]

    25.4. According to DWS, "Transfers from the Olifants, Luvuvhu/Letaba and the Crocodile (West) and Marico WMAs augment supply to Mokopane, Polokwane and Louis Trichardt".[14]

    25.5. Due to the area's existing water shortage, groundwater exploitation has grown to unsustainable levels from existing use.

    25.6. Using DWS data, Munnik also states that "the Sand is the driest catchment in the Limpopo North WMA with very limited surface water resources. However, it has exceptional groundwater reserves which have been fully and possibly over-exploited, mostly by

[8] Pg. 12 of WULA
[9] Groundwater Specialist Report, pg. 53
[10] Urban Econ 2020, Food and Tourism Impact Assessment, pg 57
[11] DWS Draft Reconciliation Strategy,Table 5.1 pg. 5-1
[12] Munnik V, Provisional Report on Water Dimension on EMSEZ EIA, 2020 at Figure 3 pg. 6
[13] Ibid, pg.7
[14] DWS 2016 Reconciliation Strategy Draft, pg. 4-1

irrigation.[15] One estimate puts the exploitation of groundwater at 155% of the calculated available yield, which is clearly not sustainable".[16]

25.7. As for the specific proposed use in the MMSEZ project, Dr. Munnik states that "for the 9 year construction phase, it would require 13.9 Mm3 per year". However, "the locally available groundwater on site, is limited to 0.377 Mm3 per year – a small fraction of what is needed for the construction phase"[17]. In the WULA, reference is made to a 5 year plan, an estimated annual volume of 346 00m^3 as being sufficient, and that the groundwater available is 600 000 m^3 per annum.[18]

26. Thus, while it is not clear what the actual status is, it does seem unlikely that the water use will only *slightly increase stress* on the groundwater. If the catchment already has to import water from other watersheds to maintain current usage levels, it is certainly not sustainable to introduce yet another significant industrial water use.

27. Groundwater shortages will likely become even more pronounced in dry periods.

28. WMS Leshika states that "storage capacity is low indicating that during dry periods water levels may drop significantly. This is supported by information from a DWS water level monitoring station at Mopane on the northern boundary of the study area (Station number A7N-0645). Only very wet years, as in 2013 cause a large rise in water level. During dry periods, water levels can drop more than 15 m. In 2007, the water level was recorded at 86.7 mbgl. The large drops in water level indicate the stress on the aquifer during dry periods"[19].

29. They also acknowledge that "during dry periods water levels may drop significantly and pumping may need to be curtailed".[20] However, the lack of a specific dry season plan in the WULA suggests that the project will likely over-abstract during the dry period. Additionally, the WULA fails to address how this lowering of water levels may impact other water users. Even if pumping is stopped temporarily, if the water usage is already stressed it may become more difficult for small-scale water users to access water.

30. According to DWS, "groundwater contributes approximately 40% towards the yield from local resources and is the only dependable water source for the majority of rural domestic users in the WMA".[21]

31. Therefore, over-abstraction of groundwater during the construction phase will have devastating consequences for the people residing near the project area that are not addressed in the WULA.

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[15] See Munnik on pg. 7
[16] Using inforrmation from DWS 2016 pgs. 4-12.
[17] Munnik V, Provisional Report on Water Dimension on EMSEZ EIA, 2020
[18] Pg. 24
[19] Groundwater Specialist Report, pg. 35
[20] Groundwater Specialist Report, pg. 53
[21] DWS Reconciliation Strategy pg. 4-1

D. This WUL Application is Premature

32. The WULA is premature for two reasons:

33. Firstly, the Environmental Authorisation for the Project is the subject of three separate review applications that have been instituted in the Gauteng High Court (case number 59812/2022) and the Polokwane High Court (case number 13525/2022 and 41/2023) respectively. Granting the WULA, thereby allowing the abstraction of water via boreholes, would be premature as the review hearings are unlikely to be heard until 2025. No activities should take place on site until the applicants in these three matters have had their applications adjudicated upon.

34. Secondly, the Reserve requirements have not yet been determined.

    34.1. The process to determine the Water Resource Classes (WRCs), Reserve and Water Quality Objectives for six main river catchments (including the Sand and Nzhelele catchments to which the proposed boreholes belong[22]) is ongoing and will not be completed until September 2024.[23]

    34.2. This decision is significant because determinations on the Water Classes determine "how the water resources will be used and managed and their future ecological condition".[24] With a September 2024 deadline, this decision is imminent. Thus, as water use licenses are subject to change or rescindment following a Reserve determination, it makes little sense to approve a new license just a few months before the Reserve determination.

    34.3. Thus, this authority should wait to issue this license until that matter is resolved.

E. Bigger Picture of Water Exploitation

35. Should the decision maker approve this license application, it would not be taking a risk-averse approach to the numerous uncertainties in the development.

36. This application is the first of many WULAs that will follow for a large and unsustainable project known as the MMSEZ.

37. The proposed MMSEZ is a Chinese-funded "mega city" in Limpopo. It is proposed that an area comprising 8 000 hectares of "pristine bush" (including 177 ha of Limpopo Ridge Bushveld, 4 422.2 ha of Musina Mopane Bushveld and 145 ha of Riparian vegetation) will be permanently lost to make way for a metallurgical and energy cluster.[25]

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[22] See 22 April 2024 letter from Living Limpopo to Myra Consulting

[23] See Munnik, Victor. Interim Comment on the Reserve Study Reports and Reserve Determination Process at 2

[24] See Munnik, Victor. Interim Comment on the Reserve Study Reports and Reserve Determination Process at 12

[25] See ALL RISE 22 October 2020 Objections to the Proposed Musina-Makhado Energy and Metallurgy Special Economic Zone Development Draft Environmental Impact Assessment Report ("EIAR") and Environmental Management Programme (EMPr) pg. 1

38. It is estimated to cost between $10 billion and $15 billion to develop and it will take 15 years to complete its construction. Numerous industrial projects are to be part of this site, including

38.1. 20 Mtpa coal washing plant,

38.2. 3300Mw coal-fired power plant,

38.3. 3 Mtpa coke plant

38.4. 390Mw waste heat power plant,

38.5. 3 Mtpa high-carbon ferrochrome plant

38.6. 1 Mtpa ferromanganese plant,

38.7. 500,000 tpa of silicon manganese plant,

38.8. 3 Mtpa stainless steel plant,

38.9. 1 Mtpa high vanadium steel plant,

38.10. 1 Mtpa high manganese steel plant

38.11. 5 Mtpa metallurgical lime plant ,

38.12. 1.2 Mtpa titanium dioxide plant

38.13. 150,000 tpa vanadium pentoxide plant[26].

39. In addition to this, there are several mining right applications adjacent to the proposed MMSEZ development site 4 that will produce hard coking and thermal coal for supply (presumably) to the MMSEZ. There is a total hectarage of 104 701 (1047km 2) of coal mining proposed in the area.These projects include:[27]

39.1. Mopane Coal Project of 38 825ha (yet to be granted)

39.2. the Generaal Coal Project of 24 859ha (yet to be granted)

39.3. the Chapudi Project of 24 719ha (yet to be granted)

39.4. The Makhado Project of 7 635ha (granted but appealed), and

[26] Munnik, pg.8
[27] ALL RISE 22 October 2020 Objections to the Proposed Musina-Makhado Energy and Metallurgy Special Economic Zone Development Draft Environmental Impact Assessment Report ("EIAR") and Environmental Management Programme (EMPr) pg. 2

39.5. the Vele Project of 8 663ha (granted).

40. Despite this extensive plan, the MMSEZ's current WULA considers only the very first step in the overall development project. Segmenting the various MMSEZ projects into different WULAs is highly problematic and results in piecemeal license authorisations for activities, when in fact, the final outcome may never be reached. This is called "project splitting".

41. In this case, the practice takes the form of artificially limiting the scope of the water usage to eight boreholes used for the clearance of indigenous vegetation and installation of bulk services infrastructure and fencing.[28] This leaves out much-needed context for understanding the immense water usage and thus the complex environmental and social impacts that will stem from as large of a development as the MMSEZ complex.

42. As such, the environmental impact of the development is vastly underestimated in this WULA. The project will require further separate WULA applications[29] for activities that are more contentious, on an already cleared and prepared site.

43. The project's EIAR itself states that "the proposed development however cannot be seen in complete isolation as it will prepare the site for future industrial developments"

44. One of the major concerns with "project-splitting" is that massive social and environmental harm can be done in service of a project that will ultimately never materialize.

45. Thus, although the WULA application considered here is "only" for water use in furtherance of clearing vegetation, fence building, and bulk service infrastructure, the consequences are one of two things:

    45.1. An extensive area of indigenous vegetation will be removed, the land fenced and bulk services infrastructure established, only to have at a later stage, EAs refused, WULAs refused and/or insufficient energy and water supply being secured resulting in the whole project becoming a proverbial white elephant or;

    45.2. The piecemeal projects are authorised and the combined effect is catastrophic due to climate effects, water scarcity, biodiversity loss, and lost land.

<u>No Reliable Water Source for Future Plans</u>

46. The project is likely to fail because the developers have not secured a sustainable and reliable water source that can run the project throughout its lifetime.

47. The operational phase water use will be even more intensive than the construction phase water use currently under consideration. This operational water use will be more intensive because

[28] WULA Summary pg. 9
[29] WULA Summary pg. 9

coking coal requires vast amounts of water. Yet the location where the coal smelter is to be located contains no water.[30]

48. Dr. Munnik states that "earlier figures pointed to 123 million m^3/year [water demand], subsequently revised to 80 million m^3 per year when in operation, and 30 million m^3 during the construction phase. Only 35 Mm^3 of this has been planned for in the Department of Water and Sanitation most recent (2016) reconciliation strategy, leaving a gap of 45 Mm^3 in an overall water budget of 771 Mm^3 by 2025".[31] Thus, despite its grand plans, MMSEZ has failed to secure the majority of the water needed for the project.

49. This led to the statement in the Integrated Water Services Report compiled for the MMSEZ SOC, also by Makutane (the WULA consutlants) to conclude that "*the MM SEZ Southern Development site currently has no direct access to any sustainable water resources sources, apart from groundwater. As discussed, the groundwater potential of the area is very low. Over usage will lead to dewatering, with lowering water tables impacting on the environment, and the authorizations and existing commercial interests of others*".[32]

50. This water shortage issue is also conceded in the project's EIAR, which states that "it is understood that access to a dedicated water supply will need to be secured for the development of the metallurgical hub of the MMSEZ South site".

51. There are several plans in place to source the needed water, but none of them provide a sound enough basis to justify continuing the project.

52. According to the Integrated Water Services Report, the anticipated supply of water from groundwater is 0.4 Mm^3/a. It stresses that "no further existing or "simple to develop" supply options exist, as all further supply options entail complex bilateral agreements with neighbouring countries including Zimbabwe, Mozambique and Botswana, complex technical evaluations of system yields, infrastructure and energy, environmental aspects, etc., locally and on foreign turf".[33]

53. However, implementing water transfers from Zimbabwe or Botswana are long-term projects that require detailed studies on hydrological determination, current and future water demand in the catchment, current and various future demographic, socio-economic and developmental scenarios, funding, security of supply, reliability of current and future international relations, energy challenges faced by South Africa neighbouring countries.

54. As confirmed in the EIAR, this means significant international negotiations and additional infrastructure will be required, all of which will result in a long lead time[34] and not guaranteed.

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[30] https://livinglimpopo.org/mmsez
[31] For additional information on this see: Munnik. V, Provisional Report on Water Dimension on EMSEZ EIA, 2020
[32] Integrated Water Services Report, pg. 39
[33] Appendix U, p28
[34] Appendix U, p15

55. With all these water sourcing concerns and uncertainties, approving this first stepping stone to the MMSEZ project, i.e. clearing hectares of indigenous vegetation and construction, would be contrary to applying the a risk-averse approach required by Section 2 of the National Environmental Management Act, 1998 ("NEMA"). Moreover, the proposed water use does not address the already disproportionate water scarcity burden borne by the region's most vulnerable people.

56. According to Dr. Munnik, "the majority of residents in the international Limpopo catchment are poor, small scale or subsistence farmers…. Rainfed agriculture suffers from unreliable rainfall and droughts. These farmers are also held back by poor soils, lack of access to water and lack of infrastructure, because of large commercial farms having good access to water and infrastructure, while smallholder farmers lack even drinking water".[35] The impacts on "invisible water users", which make up the region's majority, are already under-recognized.

57. Invisible water users are those for whom water use is "too low, per capita, to show in water planning documents". These water users "make up 64% of a total population of just under 2 million people in 2011, [36]thus approximately 1 280 000 people".[37] They have the "most fragile water rights or entitlements, and likely to be the first to be impacted, should there be a demand (for example caused by expansion of industry, mining and power generation) that has been under-estimated, or is based on supply plans that do not work".[38]

58. Since the invisible water users are already struggling to meet their needs with current water uses, they will most likely be impacted by both the proposed borehole usage and any further MMSEZ developments. Worst of all, policymakers are unlikely to realize the full extent of the impact while people suffer.

59. Furthermore, the report fails to address the region's existing racial inequity and how the proposed use might contribute to these dynamics. Dr. Munnik argues that the plight of invisible water users is " an inheritance from colonial policies[39] that systematically removed the customary rights of indigenous people in favour of colonial settlers".[40]

60. His words are supported by statistics regarding current water use - Commercial irrigation "is by far the biggest current water user, taking 464.8 Mm3, over an area of 666 km^2, with 72% of the total water use in the [Limpopo North Water Management Area]...Approximately 5000 white commercial farmers use 70% of the land, 72% of the water, and provide 17.5% of the working population in the province with jobs."[41]

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[35] Munnik, 13
[36] LNRS 2016 socio-economic
[37] Munnik, 14
[38] Munnik, 14
[39] Van Koppen and Schreiner 2018
[40] Munnik. 14
[41] Munnik, 5

61. The application also fails to address the impacts a changing climate will have on water access.

62. One study notes that "while the effects of climate change on the river have not been quantified, it is expected that increased volatility in rainfall will occur, escalating the threat of droughts and flooding. This leaves the rural subsistence farmers, a population already suffering from insufficient water resources – only two out of every five seasons produce sufficient crop yields – especially vulnerable".[42] Allowing the proposed water use in furtherance of clearing vegetation will make the already stressed local population even less climate resilient.

63. The latest Intergovernmental Panel on Climate Change (IPCC) report on land and climate change found that changes in land cover and the loss of natural vegetation, could affect regional climate and result in, inter alia, accentuated warming and increased intensity, frequency and duration of extreme events.[43]

64. According to the EIAR , "the Vhembe District municipality has a low adaptive capacity with regards to impacts of climate change on agriculture".[44] Thus, allowing mass land clearance for an uncertain project will make it even more difficult for Vhembe residents to endure climate-caused disasters in the region. Moreover, enabling the future MMSEZ development will contribute significantly to overall greenhouse gas emissions that will add further fuel to the fire.

65. The EIAR states that the impact of the Musina-Makhado project's greenhouse gas inventory is considered to be high due to the total emissions from the project being between 11% and 16% of South Africa's carbon budget.[45] As overall carbon emissions increase, climate resilience becomes even more difficult. Thus, allowing the proposed water use will enable future climate-related harm to Vhembe's residents and yet this has not been addressed in the application.

Energy Infrastructure Has Not Been Secured

66. EMSEZ may never fully materialize because it has not solidified the necessary power resources for its production plans.

67. A dedicated 3,300MW coal-fired power plant[46] (to be built by PowerCorpChina)[47] was originally planned to supply the zone's electricity needs."[48] However, in the wake of China's 2021 pledge not to build any new coal-fired power projects abroad, Fossil Free South Africa sought and

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[42] Midgley, S., Petrie, B., Martin, L., Chapman, R., Whande, W. and Parker, R. 2013. The Limpopo River Basin System: Climate Impacts and the Political Economy (for RESILIM) p 17 https://oneworldgroup.co.za/wp-content/uploads/2019/06/RESILIM-Climate-Impacts-Polit-Economy-Rept-V3-FIN-2013.10.04.pdf
[43] See https://www.ipcc.ch/srccl/, paras 2.5.2 – 2.5.5
[44] EAIR, p110 & p432
[45] EIAR, p440
[46] http://emsez.com/en/zsyz.php?id=57&lm=36&lm1=6
[47] http://emsez.com/en/about.php?id=39
[48] https://livinglimpopo.org/mmsez

received (somewhat oblique) confirmation[49] from the Chinese Ambassador to South Africa that the MMSEZ power plant would not go ahead. The MMSEZ SOC has since publicly announced that solar PV generation and renewables will replace the thermal electricity plant.[50]

68. However, Environmental Authorisation was granted in February 2022 for MMSEZ without any conditions attached regarding energy supply, and makes express reference to the EIA Report, Scoping Report and revised site layout, which includes the coal-fired power station. Moreover, the specialist report on the power supply plans, which form part of the EIAR, states plainly that solar PV power generation is not viable and has been rejected as an option.[51]

69. In July 2022 it was further announced that MMSEZ would partner with Australian company African Resources Development Energy (ARD Energy), who would supply green-hydrogen" electricity. "Paladin Hydrogen, a partner of ARD Energy, is using its Tasmanian project as the prototype of coal-to-hydrogen technology that apparently has zero emissions. Once that project reaches sufficient scale, the intention is to deploy the technology to the Makhado coal fields of northern Limpopo". [52] However, as a prototype, there is no guarantee that this energy source will provide the answers to MMSEZ's energy problems.

70. Moreover, as of April this year, this electricity source seems to have been abandoned in favor of nuclear energy. The Zoutspanberger reported that "MMSEZ developers are looking to acquire eight small modular reactors to supply nuclear power to the MMSEZ".[53] As one commentator to the article noted, "it is obvious that the MMSEZ managers/planners have no consistent plan for bulk electricity provision nor water provision for the MMSEZ, since they have moved from coal power to solar power and now to nuclear power".[54]

71. The project's recent EIAR also points to uncertainties in the energy production sources.

72. According to the report, Eskom has "indicated that they may be able to supply 5MW required in year one" (our emphasis), depending on the location of the main substation for the development.[55] However, this would only account for one of many years planned for the production phase. Furthermore, even this energy from Eskom for just the first year is not yet guaranteed. The EIAR notes that electricity services need to be confirmed and secured.[56] It also recommends that a comprehensive specialist assessment of available energy sources for the further development of the MMSEZ South Site be done.[57] It also acknowledges that water

[49] https://fossilfreesa.org.za/wp-content/uploads/2021/11/FFSA-correspondence-China-MMSEZ.pdf
[50] https://livinglimpopo.org/mmsez
[51] https://livinglimpopo.org/mmsez
[52] See more at https://www.southafricanbusiness.co.za/10/2022/renewable-energy/green-hydrogen-comes-to-limpopo
[53] Andries van Zyl "MMSEZ now also looking at nuclear power" 19 April 2024 https://www.zoutpansberger.co.za/articles/news/60222/2024-04-19/mmsez-now-also-looking-at-nuclear-power
[54] Quote from Mr Johan Fourie of Save Our Limpopo Valley Environment (SOLVE)
[55] EIAR, p139
[56] EIAR, p251
[57] EIAR p918

scarcity may also negatively impact Eskom's functionality and that Eskom's inability to generate power will negatively impact on the construction of the proposed project.[58]

73. The EA decision maker recorded that "what the proposed development might look like will not be possible [sic] due to power shortages in the country".[59] Thus, the EIAR provides further evidence that no energy plan has been finalized and that no such plan may ever be finalized.

74. Further to the above problems, there is also still a backlog of electricity supply to residential areas and to the existing businesses in the Vhembe District Municipality.[60]

75. Thus, MMSEZ's decision to continue moving forward with the project before the necessary energy sources have been secured means that the future of the project is in limbo.

76. Thus, the WULA should not be granted because it would enable the clearance of vast swaths of vegetation to further a project that is potentially unfeasible based on its insufficient energy planning.

Lost Grazing and Subsistence Farming Land

77. Approving the requested water uses will negatively impact people's agricultural activities and decrease food security.

78. Food security means having enough food to fully meet basic needs at all times. According to the Food and Agricultural Organization of the United Nations, "Food security is a situation that exists when all people, at all times have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life".[61]

79. According to information on the Department of Statistics website, the involvement of households in agricultural activities for subsistence farming can play an important role in reducing the vulnerability to hunger of rural and urban food-insecure households.[62] The results show that out of 16,2 million households, about 2,5 million households (15,6%) were involved in agricultural activities in South Africa in 2017.[63] Provinces that are predominantly rural and with high levels of poverty such as Limpopo (25%), Eastern Cape (20%) and KwaZulu-Natal (20%) had the highest proportions of households that relied on agricultural activities to supply their own food.[64] Most households involved in agricultural activities were involved in the production of fruits and vegetables, grain, and other food crops, as well as in livestock and poultry farming. Although the main source of income for these households is social grants, most households involved in

[58] EIA, p457
[59] EA pg. 13
[60] Appendix Y, p30
[61] FAO, 2001
[62] http://www.statssa.gov.za/?p=12135
[63] http://www.statssa.gov.za/?p=12135
[64] http://www.statssa.gov.za/?p=12135

agricultural activities indicated that the main reason for their involvement is to supplement food for the household.[65]

80. The proposed project area will threaten these life-saving agricultural activities, and yet the consequences of their loss have not been thoroughly evaluated.

81. The project WULA itself states that "the current activity on the land is extensive cattle farming".[66] It also states that "the nature of land use will transition from extensive agricultural to industrial, although some degree of cattle farming may continue"[67]. However, this vague wording makes it unclear how much cattle farming may continue and thus how many people will be affected by the proposed water use.

82. According to Dr. Munnik, currently "livestock watering takes small amounts for commercial cattle running, small and subsistence cattle and goat farming, as well as for game farming. Although amounts are relatively small, this is a crucial category in terms of subsistence, small farmers and job creation".[68]

83. Cattle farming is an essential part of the local economy. However, the application has not addressed the extent to which the proposed water use will affect this sector.

Cultural Heritage

84. The WULA does not address negative impacts to the region's cultural heritage.

85. Much of Venda culture and spiritual practices are deeply bound with La Mupo (nature) and many of the sacred sites are water bodies, including Lake Fundisi. The indigenous culture, knowledge, and practices cannot in fact be separated from nature – the culture ceases in absence of the natural systems, including water systems. Threats to La Mupo and the sacred sites are existential to traditional Tsonga and Venda culture, and harmful to South Africa's cultural heritage[69].

86. As the MMSEZ will have significant impacts on the region's water systems, impacts to Tsonga and Venda cultural heritage cannot be ignored.

Biodiversity Loss

87. Flora, fauna, and the habitats in which they live will be irrevocably harmed by allowing the proposed water use to move forward.

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[65] http://www.statssa.gov.za/?p=12135
[66] MMSEZ WULA 2 South Site, pg. 10
[67] MMSEZ WULA 2 South Site, pg. 10
[68] Munnik, pg. 6
[69] Living Limpopo Visioning Form

88. The project site falls within the Vhembe Biosphere Reserve. Biospheres are nominated by national governments and then designated by UNESCO following an intergovernmental designation process under the Man and Biodiversity (MAB) Programme.[70] This value is internationally recognized and celebrated. According to Director-General of UNESCO Audrey Azoulay, biospheres "play an essential role in sustainably preserving biodiversity, improving the living conditions of local populations and indigenous peoples and fostering scientific research".[71] There are only 686 biosphere reserves in 122 countries, with ten being in South Africa. The Vhembe Biosphere Reserve is one such reserve and is approximately 30 701 km^2.

89. The project site also falls within an Ecological Support Area, with the southern portion classified as a Critical Biodiversity Area.[72] Critical Biodiversity Areas are areas reserved to meet biodiversity targets for ecosystems, species, and ecological processes, as identified in a systematic biodiversity plan. Ecological Support Areas are not essential for meeting biodiversity targets but play an important role in supporting the ecological functioning of Critical Biodiversity Areas and/or delivering ecosystem services. The primary purpose of these two area designations is the guide decision-making about where best to locate development. It should inform land-use planning and natural resource management by a range of sectors whose policies and decisions impact on biodiversity.[73]

90. Considering these various classifications, the floral biodiversity of this area is high. There are also many species in the area that are already considered threatened.

91. The flora study conducted as part of the EIA process identifies four tree species of conservation concern (Shepherd's Tree, Leadwood, Marula and Baobab) with the Baobab also listed as a Schedule 12 Threatened Plant Species.[74] 109 034 threatened trees were recorded in the area, which 51.3% consisted of Marula trees, 41.9% of Shepherd's trees, 5.2% of Baobab and 1.65% of Leadwood trees. The Musina Mopane Bushveld habitat was the largest and consequently had the highest number of protected trees at 96 336. The Limpopo Ridge Bushveld and the riparian habitat had 8 034 and 4 661 protected trees respectively. Only protected trees were part of the survey – other trees, shrubs, herbs, forbs, and grasses were excluded. Presumably, the plan is simply to destroy an 8 000 ha area of these plants.[75]

92. Approximately 177 ha of Limpopo Ridge Bushveld, 4 422.2 ha of Musina Mopane Bushveld, and 145 ha of Riparian vegetation will be permanently lost.[76] It's not just the size of habitat that is at stake, but also the wealth of biodiversity that the threatened land contains. Over 100 000 protected trees, three Red List mammals (one with regional threatened status), and 13 Red List birds occur in the proposed project area.

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[70]For more about the designation process see: https://www.unesco.org/en/mab/wnbr/designation
[71] For more about biospherese see: https://news.un.org/en/story/2024/07/1151806
[72] See ALL RISE Objections to the MMSEZ EIA.
[73] Appeal EIA pg. 73-74
[74] Appendix K
[75] ALL RISE EIA Objection pg. 19
[76] ALL RISE EIA Objection pg. 2-3

93. The project will also irrevocably harm the area's diverse and plentiful wildlife.

94. The fauna study of the project area conducted as part of the EIA process identified many animal species on the project site, including several on the International Union for Conservation of Nature (IUCN) Red List of Threatened Species. These are hereon shortened here to "Red Data species". The IUCN Red List of Threatened Species is "the world's most comprehensive information source on the global extinction risk status of animal, fungus and plant species". "It is used by governmental bodies, non-profit organisations, businesses and individuals".[77] The fauna study of the project area conducted as part of the EIA process identified seventeen mammal species including, three species listed according to the IUCN Red List of Threatened species.[78] The study also identified 26 avifauna species[79]. (Approximately 262 bird species are expected to occur in the area. Of these 262 species, a total of 13 species are listed as Red Data species). Additionally, the study identified twelve herpetofauna species[80]. (In spite of only twelve been identified, a total of 27 herpetofauna species are listed for the area including four frog species; one tortoise species, and twenty-two reptile species. Two of these species are listed as Red Data species). Finally, the study identified nineteen invertebrates, including the Rear Horned Baboon Spider which is commercially protected.[81]

95. Protecting these species is vital to conservation efforts worldwide. Currently, more than 31 000 or 27% of the species the IUCN has assessed are threatened with extinction.[82] Additionally, the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (2019) estimates that of the 8.1 million animal and plant species on Earth – with the vast amount of these species not yet known to humans – roughly 1 million are threatened with extinction.[83] With so much of the world's biodiversity at risk, the extinction of species is something we should actively be fighting against. However, the proposed project is threatening at least sixteen threatened and/or Red Data species.

96. The EIAR confirms that South Africa is the third most megadiverse country in the world and it is critical to ensure an extensive and representative system of protected areas for the conservation of South Africa's biodiversity and ecosystems.[84] Loss of biodiversity will pose serious risks to the health and socio-economic aspects of life for future generations.

97. The region's biodiversity is considered a strategic resource, as it provides rural communities with natural products that sustain their livelihoods, such as shelter, food, fuel, and medicinal plants.[85]

98. Thus, biodiversity loss also means the loss of green sustainable growth potential. The natural capital of the Vhembe already sustains a thriving local informal economy from activities such as

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[77] For more on the IUCN see: https://www.iucn.org/resources/conservation-tool/iucn-red-list-threatened-species
[78] Appendix K, p60-68
[79] Appendix K, p60-68
[80] Appendix K, p60-68
[81] Appendix K, p60-68
[82] https://www.iucnredlist.org/
[83] https://www.ipbes.net/news/million-threatened-species-thirteen-questions-answer
[84] EIAR, p337
[85] Vhembe IDP at 116

Baobab harvesting and mopane harvesting. There is an opportunity cost to project approval that will be borne by local communities. By allowing land clearance, these communities are losing the opportunity to grow these sustainable industries for long-term benefits.

99. Two prominent examples of green growth industries include mopane worm harvesting and Baobab derivative harvesting. In the Mopane bioregion (of which most of the site constitutes[86]), the mopane worm, together with many other edible insects, has longed formed a part of people's diets in the region and is today regarded as a delicacy. [87] The popularity of this protein-rich food has supported the growth of the informal market in wild-harvest *mashonzha*, which now forms an important part of the rural informal economy. One research study found that traders in the town of Thohoyandou in Limpopop each earn an annual supplemented income of about USD1,400 (about R25,500) from the sale of dried and fresh mopane worms.[88]

100. This impact was not at all assessed in the WULA, which only mentions cattle farming, hunting, and game farming as the land's economic activity. This is part of a wider context of Euro-centric cultural biases against entomophagy in which Western developmental perspectives have historically contaminated agricultural and economic policy, leading policymakers to ignore the economic value and potential of traditional practices.[89] The area's baobab trees also provide income and opportunities for the local people. EcoProducts[90], a local enterprise that supplies baobab seed oil and baobab fruit powder to the cosmetics manufacturing and retail sectors, supports as many as 800 rural harvesters and employs over 50 people in its factory where collected fruit is processed.[91] Additionally, profits from domestic and export sales are channeled through the Baobab Foundation[92] to fund local baobab conservation projects, baobab research and community services, including a preschool in the area.[93] Thus, this business model protects local biodiversity while sustaining people's livelihoods. Enabling the destruction of these trees to make room for construction will disadvantage the region's most vulnerable people. These women may lose a valuable source of income and sustainable development.

101. If the MMSEZ goes forward, biodiversity loss will not just be limited to the clearance area.

102. The cumulative impact of the MMSEZ and the surrounding coal and other mines, power plants, dams, and industrial developments supporting the MMSEZ, will alter the landscape for centuries to come, irreversibly degrading a highly valuable and near-pristine area.

103. The Vhembe Bioregional Plan states that the biggest threat to regional biodiversity within the Vhembe District Municipality is identified as new mining and industrial developments. With new

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[86] ALL RISE EIA Objection pg. 1
[87] Appeal EIA pg. 9-10
[88] Appeal EIA pg. 10
[89] Appeal EIA pg. 10
[90] For more information see: https://ecoproducts.co.za/
[91] https://livinglimpopo.org/baobab
[92] For more information about the Baobab Foundations work please see: https://baobabfoundation.co.za/
[93] https://livinglimpopo.org/baobab

applications for mining rights expected because of the MMSEZ, a steep biological decline is expected in the medium term. [94]

104. Furthermore, protecting biodiversity is not yet part of the project's wide plan. The EIAR confirms that the quantification of the regional cumulative impacts was not completed and recommends that the developer of the MMSEZ "work constructively with other developers in the area to plan an aggregated biodiversity offset."[95].

105. Thus the biodiversity offset plan, much like the water sourcing and energy production plans, does not yet exist.

106. This level of uncertainty for a project of this scale and a mass clearance of vegetation, along with the consequences that follow as a result thereof, is unacceptable and does not constitute sustainable development.

107. These considerations, when applying the precautionary principle contained in NEMA, ought to weigh against granting the WULA.

Far-Reaching Food Security Consequences

108. Allowing the water usage at this initial stage in the project will also enable further degradation of local agriculture and food security.

109. The WULA itself states that "the planned road and fence infrastructure can be seen as enablers for the subsequent development".[96]

110. The mining of the coalfields within the Vhembe district has the potential to negatively impact approximately 689 000 ha of livestock and wildlife grazing lands in the following ways [our emphasis]:

    110.1. Decimation of grazing land due to the extraction of all the available coal through open cast mining;

    110.2. Air pollution as a result of the burning of fossil fuels during mining operations and processing;

    110.3. Fresh water supply required for agriculture may be affected by contaminated water lost into rivers and ground water reservoirs[97].

111. While far from being comprehensive, the first draft of the Impact Study on Tourism and Food Security confirms that the MMSEZ will have significant impact on downstream irrigation farms

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[94] Vhembe Bioregional Plan, pg. 12
[95] EIAR, p365
[96] MMSEZ WULA, 10
[97] Appendix X, p104

due to water abstraction and the introduction of the metallurgy cluster at the MMSEZ South Site will have a potentially "substantial impact on the food security in the Makhado LM, as well as in the Mutale LM".[98]

112. Additionally, it is not clear that these negative impacts will be outweighed by economic development benefits.

113. The EIA Report states that "should site clearance be granted authorisation, the entire site and its surrounding area will be negatively impacted upon as indicated by 18 out of 21 specialist studies. Thus, the potential negative impact of the proposed development on the natural, cultural, paleontological, and agricultural environment of the site may likely outweigh the identified positive impacts associated with the Very-High social and economic development benefits after applying mitigation measures". [99]

114. Thus, the substantial food security risk that the project poses is not in line with the precautionary principle in NEMA. As such, the WULA should not be granted on this basis.

Regional Unrest

115. Finally, if the full project goes through impacts will not be limited to just South Africans.

116. The impacts of the MMSEZ's operations on strained water resources could result in community volatility and negative diplomatic consequences with/within the donor countries.[100]

117. This represents yet another uncertainty counter to the precautionary principle under NEMA.

III. CONCLUSION

118. For the above reasons, we submit that the responsible authority is unable to fulfil its obligation in terms of Section 27 of the NWA to properly consider as it must, all relevant factors in deciding to issue an IWUL, including:

    118.1. existing lawful water uses;

    118.2. efficient and beneficial use of water in the public interest;

    118.3. the socio-economic impact of the water uses if authorised;

    118.4. the likely effects of the water use on water resources and on other water users;

[98] Appendix X, p93
[99] EIAR Section 7.9.1
[100] EIAR, p459. Documents supporting the Makhado EMSEZ indicate a 120 year lock-in (Munnik, 2019, p55)

118.5. the strategic importance of the water use should it be authorised;

118.6. the quality of water in the water resource which may be required for the Reserve and for meeting international obligations, including those imposed by the World Heritage and RAMSAR Conventions through national legislation;

119. We remind DWS that it is required to apply the Section 2 Principles of NEMA in making its decision, in particular:

119.1. Development must be socially, environmentally and economically sustainable, which requires the consideration of all relevant factors including that:

119.1.1. the development, use and exploitation of renewable resources and the ecosystems of which they are part do not exceed the level beyond which their integrity is jeopardised;

119.1.2. a risk-averse and cautious approach is applied.

119.1.3. that negative impacts on the environment and on people's environmental rights be anticipated and prevented, and where they cannot be altogether prevented, are minimised and remedied.

119.2. Environmental justice must be pursued so that adverse environmental impacts shall not be distributed in such a manner as to unfairly discriminate against any person, particularly vulnerable and disadvantaged persons.

119.3. Equitable access to environmental resources, benefits and services to meet basic human needs and ensure human wellbeing must be pursued and special measures may be taken to ensure access thereto by categories of persons disadvantaged by unfair discrimination.

119.4. The participation of all interested and affected parties in environmental governance must be promoted, and all people must have the opportunity to develop the understanding, skills and capacity necessary for achieving equitable and effective participation, and participation by vulnerable and disadvantaged persons must be ensured.

119.5. Decisions must take into account the interests, needs and values of all interested and affected parties, and this includes recognising all forms of knowledge, including traditional and ordinary knowledge.

119.6. Community wellbeing and empowerment must be promoted through environmental education, the raising of environmental awareness, the sharing of knowledge and experience and other appropriate means.

119.7. The social, economic and environmental impacts of activities, including disadvantages and benefits, must be considered, assessed and evaluated, and decisions must be appropriate in the light of such consideration and assessment.

119.8. The environment is held in public trust for the people, the beneficial use of environmental resources must serve the public interest and the environment must be protected as the people's common heritage.

119.9. The costs of remedying pollution, environmental degradation and consequent adverse health effects and of preventing, controlling or minimising further pollution, environmental damage or adverse health effects must be paid for by those responsible for harming the environment.

120. On this basis, the WULA should be refused.

121. As we were only able to access the WULA on 8 July 2024 and were not granted an extension to submit our comments, we have had less than one week to prepare these. We therefore reserve the right to resubmit or supplement these comments in the future. We also reserve the right to supplement our comments once the outstanding material information is made available, as they are required, by law, to be.

Yours faithfully,

Kirsten Youens

(Sent by email and therefore not signed)