

Reducing Pollution Through Partnership

Namibia

Workshop Summary Report



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for Environment
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1 Workshop Summary

Overview

- Date: Wednesday, 26 January 2022
- Time: 8:00 – 16:30 (Namibia time)
- Format: online (Microsoft Teams)
- Participants: 27 (20 external stakeholders, 7 NNF and 2 JNCC staff)

Objective

- JNCC's Country Analysis of Namibia and discussion
- State of Pollution Namibia – exploring issues and opportunities

Inputs

- JNCC video Namibia country analysis

Outputs

- Feedback on country-specific analysis (4.8)
- Assessment of pollution issues, impacts, current projects (4.9)
- Discussion on future projects and proposed focus areas (4.10)

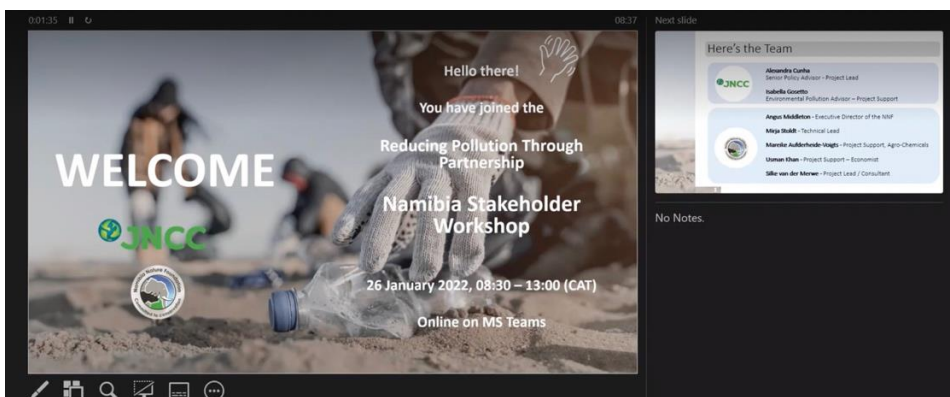
Conclusion:

"We have issues ahead of us, but it is not all doom and gloom" (Angus Middleton, NNF Executive Director).

The workshop was a milestone for the project, but also a highlight for the team. There were good discussions, useful input was provided and there was an appetite for a follow-up engagement, and a need for a longer-term pollution project for Namibia.

Next Steps:

- Follow-up workshop on priority areas
- Workshop outputs to feed into pollution report, finalise report
- Ongoing stakeholder engagement



Thank you

To JNCC and Defra for funding and support. NNF Team (Mirja, Mareike, Usman and Silke) for organisation and hosting

2 Workshop Context

Reducing Pollution Through Partnership is a project funded by the UK's Department for Environment, Food & Rural Affairs (DEFRA) and delivered by the Joint Nature Conservation Committee (JNCC) to scope and help design a wider pollution programme to enhance the ability of low-income countries to manage chemicals and to reduce air, chemical, and waste pollution.

Overall, the main aim of the programme is to reverse biodiversity loss, build ecological resilience in face of climate change and improve human health. JNCC's priority during the scoping phase is to engage with pilot countries such as Namibia to understand how better deliver a fit for purpose pollution programme in the future.

Namibia Nature Foundation (NNF) is driving the scoping project in Namibia. The purpose of the pollution workshop is to engage local expertise to gather information and ideas from local experts and check JNCC's global analysis results.

3 Workshop Format and Presentations

3.1 General Organisation

Workshop preparations started in December 2021. A save the date invitation was sent to participants, which were part of the identified and engaged stakeholder list created for the project in November.



Figure 1. The Reducing Pollution Through Partnership workshop invitation that was sent to invitees.

Some of the invitees indicated they would only be able to attend a virtual workshop. Thus, it was decided to host an online workshop and new invites, an agenda and links were sent out to all participants a week before the workshop. In addition, it was decided to host a half-day workshop, with the possibility of a follow-up workshop later in February, to ensure more participants would be able to attend and maintain focus throughout the workshop. The contents and agenda were discussed with the JNCC Team. The final outline and agenda were the following:

Format: Virtual (Microsoft Teams)
Date: 26 January 2022

Time: 8:30 to 12:45

Table 1. Agenda for the Reducing Pollution Through Partnership workshop.

Time	Agenda Point
08:30	Welcome, Agenda & Introductions
09:00	Introduction to JNCC Project & Approach Namibia
09:30	JNCC Global and Namibia Analysis
10:00	Discussion of Results
10:45	Break
11:00	Namibia Pollution World Café
12:00	Presentation of World Café Results & Discussion
12:45	Closing Remarks

3.2 Presentations

The NNF team prepared a presentation to guide through the session, this included introductions, context, agenda, project details, etc.

The JNCC team used a video for their presentation of the country-specific results for Namibia.

3.3 Collaboration Methods Used

The agenda was designed to maximise interaction and the exchange of information, giving feedback to JNCC's country analysis of Namibia, and exploring the state of pollution in Namibia. Formal presentations were kept to a minimum. More than an hour was spent on group discussions in break-out rooms. The following collaboration tools were used:

3.3.1. Chats

The Microsoft Teams chat function was one of the main tools used to engage participants. The facilitator started by asking participants to use the chat to introduce themselves. Another question asked how invitees were involved with pollution. Chats were constantly monitored by the NNF team and provided some valuable information.

More details under Appendix B.

3.3.2. Questions and Answers

After presenting the Country Analysis Video for Namibia¹. Local Sense Check Video for Namibia by JNCC, the facilitator asked the attendees to give feedback. Questions posed to the participants were provided by JNCC (Appendix A).

3.3.3. Breakout Rooms

Microsoft Teams breakout rooms was used to divide the participants into smaller groups and encourage deeper more detailed discussions on pollution in Namibia. The smaller groups gave participants the confidence to speak up and engage, which proved to be much more effective. Each room was asked to discuss the following four main questions:

1. *Main Pollutants: Which pollutants are a problem?*
 - Optional: What pollutants, as a priority, will need to be mitigated in Namibia?

¹ Video was developed by JNCC to provide overview of results for Namibia from the global analysis.

2. *Main Polluting Sectors: What are the main sources of pollution?*
 - Optional: Would you recommend looking at any specific industry or pollutant type for the wider programme moving forward? Please explain why?
3. *Impact: What are the main impacts and threats caused by pollution?*
 - Optional: Are there any other factors that should be considered when assessing pollution in your country e.g., socio-economic, climatic, political?
4. *Ongoing Initiatives: What is currently being done against pollution?*
 - Optional: Main organisation/s responsible for managing pollution in Namibia?
 - Optional: Are there pollution intervention projects of relevance in Namibia that aim to tackle the sources of pollution identified in the Global Analysis directly or indirectly?
 - Optional: Are there any country pollution monitoring programmes that could provide data for a future pollution reducing programme?

If the host ran out of questions, or if there was a lack of engagement or knowledge, they had the option to add additional questions like:

- Can you include examples of your involvement in pollution management and whether you have a general or specific area of knowledge of pollution?
- If there is published data on pollution in Namibia, how often is it updated? Please provide data sources or links if available.
- What do you think our next steps should be to make this analysis useful in informing a programme to tackle pollution in low and middle-income countries in general?

3.3.4. Polls

Online polls (Microsoft Teams) were used to make the workshop less monotonous, re-engage and interact with people during the meeting and collect important information. The team prepared and launched five polls during the workshop. The participation in the polls was not high, probably because participants are not used to virtual workshops and polls, but it increased engagement and confirmed some of the discussions and views.

1. *What do you think are the biggest pollutants in Namibia?*



Figure 2. Word cloud showing participant responses when asked "What do you think are the biggest pollutants in Namibia?" (n = 8).

This was a question with open answer. That is why perhaps the quality of the feedback was not so good. It would have perhaps been better to use drop down list. 'Certain towns' and

'towns and cars' are vague responses. However, waste management and sewage was a pollution confirmed during the discussions at the workshop.

2. Which of the following do you think are the biggest causes of environmental pollution in Namibia?

Multiple answers were possible. Urbanisation, solid waste, and mining activities scored highest.

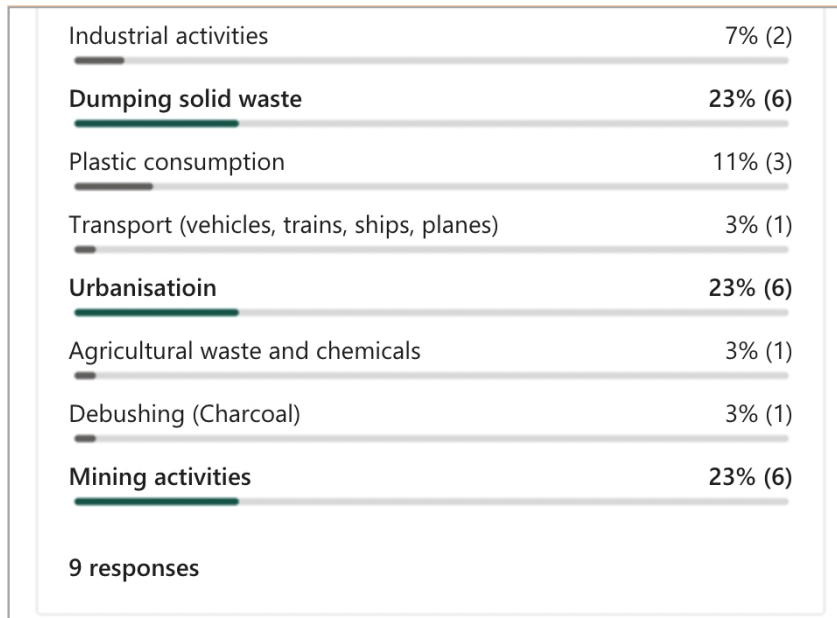


Figure 3. Poll responses when participants were asked "Which of the following do you think are the biggest causes of environmental pollution in Namibia?" (n = 9).

3. Who are the key stakeholders involved in addressing pollution in Namibia?



Figure 4. Word cloud showing participant responses when asked "Who are the key stakeholders involved in addressing pollution in Namibia?" (n = 4).

Participants could provide any answer to this (open-ended) and responses reflect what the groups also discussed in break-away rooms, i.e. that government should take the lead in this. However, the rate of response is very low, and the polls is therefore not conclusive.

4. Are you aware of local policies or initiatives taken by various organizations to reduce environmental pollution? If yes, please name them?

No responses, as it was launched too late. It was an open-ended question.

5. What in your view should be the priority focus of a pollution project?

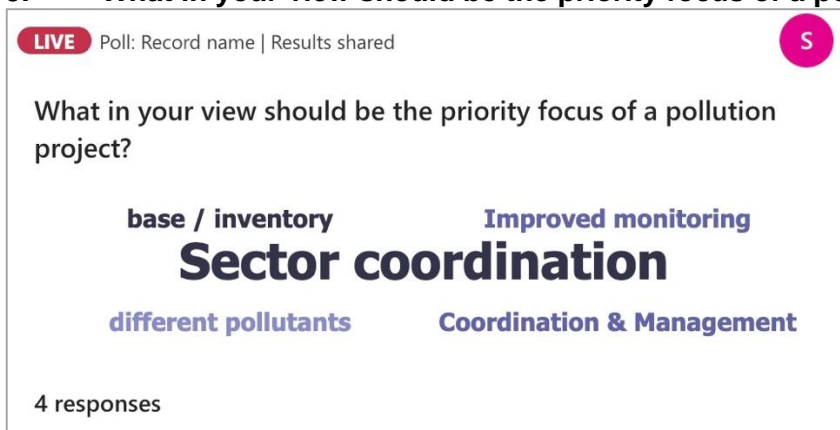


Figure 5. Word cloud showing participant responses when asked "What in your view should be the priority focus of a pollution project?" (n = 4).

Again, open-ended poll was used. The result shows that there is need for cooperation. Yet, this answer somewhat contradicts the 3rd poll above. Again very low response rate.

3.3.4. Whiteboard

Lastly, some of the breakout room hosts used the Microsoft Whiteboard which lets participants draw, sketch, and write together on a shared digital canvas. Hosts then shared their whiteboard to give feedback on the group work to the larger audience.

4 Workshop Statistics

4.1 Participant Statistics

The workshop invitation was sent to 40 experts of which 20 attended the workshop. In addition, 5 NNF and 2 JNCC representatives attended the meeting. In total, 27 participants attended the workshop (detailed list under Appendix A).



4.2 Sector Analysis

A diverse group of stakeholders from the public sector and civil society attended the Workshop, however, there were unfortunately not any private sector attendees.

Table 2. Number of attendees who attended the workshop from each sector.

Sector	Number of Attendees
Academics/Students	2
Industry Associations (Recycling and Agricultural)	3

Experts	1
NGOs (environmental, development, research)	12
Public Sector (Windhoek municipality, Government)	8
Unknown (unknown email addresses)	2

4.3 Country Reach

Most participants that attended the meeting were from Windhoek, the capital of Namibia. Only one was from outside Windhoek. It would have been good to have people from other regions also attending, but since most organisations have their main office, headquarters and thus experts in Windhoek, the quality of discussion was not affected.

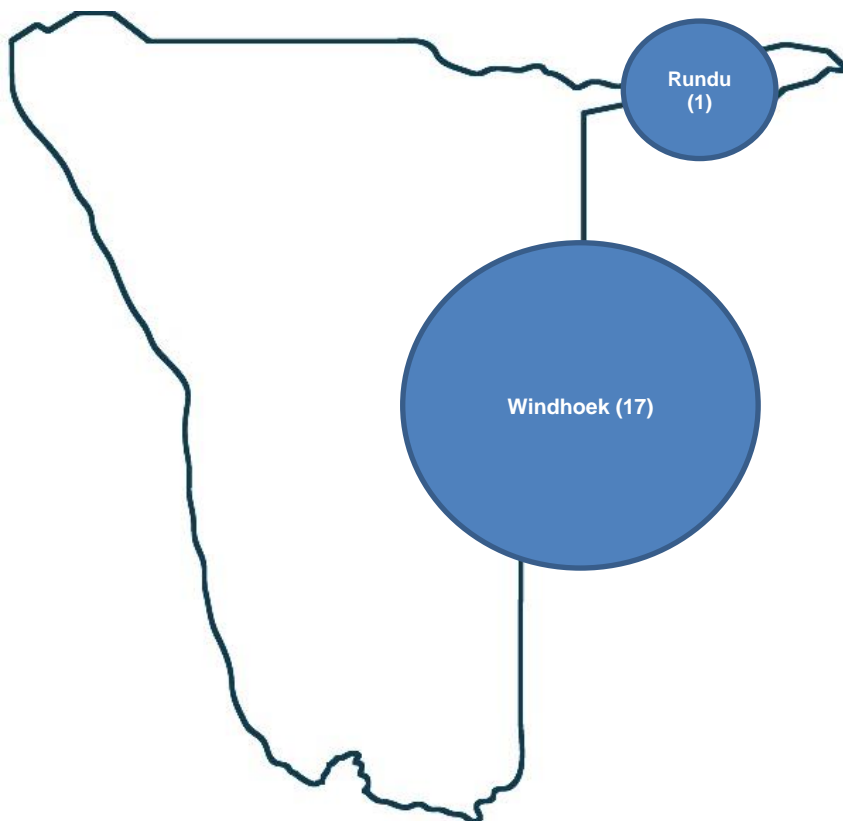


Figure 6. Namibia Pollution Workshop country reach.

4.4 Question & Answer Session Statistics

The generally low attendance of the workshop means that some of the answers given by representatives are not conclusive, and the team has decided to follow up with stakeholders in person on some issues, as well as holding a possible second workshop or survey to enhance the quality of information.

Also, as mentioned in section 6. Lessons Learnt, the polls showed a very low voting rate, and their effectiveness is thus questionable. The main reason for low participation is that most attendees are new to virtual workshops and struggle to navigate tools like Microsoft Teams. Timing of polls and questions asked might have also played a role.

Table 3. Questions posed to participants during the workshop, the format by which they were asked and the number of responses.

Question	Responses	Format
Introduce yourselves?	10	Chat
How are you involved in pollution?	4	Chat
Biggest pollutants	8	Poll
Causes of pollution?	9	Poll
Key stakeholders?	4	Poll
Local initiatives?	0	Poll
Priorities?	4	Poll

4.5 Collaboration Session Statistics

Table 4. Number of attendees in each of the workshop breakout rooms.

Groups	Attendance
Room 1	4
Room 2	5
Room 3	5
Room 4	6

4.6 Main Points and Discussion on Methods and Specific Data

A general limitation pointed out was that the detail of the results depends on the degree of reporting to the IUCN and that there may be a need to complement the IUCN Red List with local information and data sources, as will be identified in the final pollution report.

4.7 Main Points and Discussion on Global Analysis

Discussions around the methodology were noted under 4.6. above. There was no discussion around the results of the Global Analysis.

4.8 Main Points & Discussion on Analysis for Namibia (Local Sense Check)

Workshop participants pointed out that the impact of pollution on biodiversity is important. In Namibia specifically, health impacts (e.g., exposure to chemicals, drinking polluted water) of pollution may even be more important and should be explored.

It was noted that specific species groups (e.g., amphibians or insects) are poorly represented. There are also specific areas – and industries (e.g., charcoal production) - that are not well reflected. For example, it was reported that there is considerable soil erosion and agro-chemical use in the south of Namibia around the Orange River. These gaps in data are likely a result of general data deficiency and research in Namibia and/or lack of reporting to the IUCN.

Air-borne pollution from charcoal production and smelters (e.g., Tsumeb) can be quite considerable and create air pollution issues. The IUCN Red List analysis indicated that zero species are impacted by Air-borne pollution in Namibia, which may not be an appropriate reflection of the realities on the ground.

Persistent Organic Pollutants are still a big problem in Namibia and are used despite being on a local list of prohibited chemicals.

4.9 Other Country Specific Pollution Issues Discussed

Within the working groups/breakout rooms, the state of pollution in Namibia including the main pollutants, polluting sectors, the impact of pollution, as well as ongoing initiatives were discussed. The results were as follows (detailed feedback from each room under Appendix C) – (not in order of importance):

Main Pollutants: Which pollutants are a problem?

- Sewage
- Plastic (macro- and micro plastics)
- Agricultural chemicals
- Heavy metals

Main Polluting Sectors: What are the main sources of pollution?

- Mining (heavy metals and run-offs)
- Urbanisation (lack of sanitation, sewage, and waste management)
- Agriculture (uncontrolled use of agro-chemicals)

Impact: What are the main impacts and threats caused by pollution?

- Water contamination, especially ground water that is used for drinking. This is a critical concern, as Namibia's water resources are scarce.
- Health impacts
- Biodiversity loss

Ongoing Initiatives: What is currently being done against pollution?

- Waste management and recycling (Rent-a-Drum, City of Windhoek, Hope Village, Recycle Namibia Forum)
- Gathering, understanding, and sharing knowledge about arid environments. Report on plastic pollution (Gobabeb Research Centre)
- Pilot initiative at Etosha National Park looking at solid waste management (Namibia Wildlife Resorts)
- Swakoppoort Water Management Committee Catchment Forum
- Recycling of E-Waste (NamibGreen)
- Production and reuse of human waste for fertilisers (OtjiToilet)
- Sanitation and waste management research (Development Workshop Namibia)
- Newer technologies (e.g. solar power), which are less energy and water intensive and have climate co-benefits.
- Clean up campaigns (also engaging schools) and workshops
- Policy action on waste management: Pollution bill and efforts to ban certain pesticides.
- The Environmental Investment Fund (EIF) is looking at levies on plastic to ensure sustainable management of resources.
- Tourism environmental awards
- Dump site upgrading (Government)
- Development Workshop Namibia is promoting community led sanitation in 8 towns supporting communities to build own latrines to reduce public defecation.

4.9 Discussion on Future Project Ideas

There was extensive discussion around future project and priorities going forward. Projects identified were:

Legislation, Standards, Control and Monitoring

- Summarise regulations, identify gaps and where laws are *not* implemented

- Qualification for pest control: anyone can run that business, reintroduce platform with Ministry of Agriculture, Water and Land Reform (MAWLR) to check skills and controls.
- Advocacy for informal settlements (management & investments) and work with local authorities.

Education, Awareness, Awards and Campaigns

- Awards and environmental support for not only tourism but also other industries.
- Education in controlling pollution to shift mindsets and attitudes.
- Improved education at junior level on environmental management
- Monetary incentives for reducing plastics. Buy-back schemes like in Europe, which push up the value and give people a fair return. It must be profitable for people and industry.

Private Sector and Partnerships

- The private sectors must be more involved. Suitable incentives and partnerships between private and public sector (PPPs) should be investigated.
- Buy-back centres that incentivise people to sell used items rather than throwing it away, reducing waste.

Research

- More research into specific pollution problems to raise awareness
- Pilot different strategies and mapping of waste islands in open spaces and riverbeds
- Exploring Waste-to-energy plants which could burn municipal solid waste (MSW), to produce electricity

Community Involvement

- Work with communities to reduce waste islands and formalise waste sites.
- Promote community recycling for example by supporting the sorting of waste and providing refuse bags.

5 Feedback

5.1 Usefulness of the Workshop to Participants

There has been limited engagement between different sectors around pollution in the past. Participants agree that it is time to discuss pollution issues in a more organised and integrated way. The feedback at the workshop was good and participants were interested in a follow-up workshop.

5.2 Quality & Feedback on Information Provided by JNCC

The video and thus the analysis was well received. There were some discussions on specific species, for example on how lions are affected by pollution. The question catalogue was very useful for preparing the breakout sessions, discussion sections and polls for the workshop. A follow up survey using the questions will also be prepared.

5.3 Other Comments

(See Appendix C).

6 Lessons Learned

Despite initial concerns that a virtual workshop might be difficult to organise and not as effective, the method worked quite well. We could see good collaboration and discussions, especially in the smaller groups (breakout rooms). There were a lot of different topics discussed and participants provided the NNF team with useful current challenges inputs, suggestions for further research and recommendations on priority areas. The number of participants attending, although low, still exceeded expectations as virtual workshops in Namibia are still evolving.

Areas of improvement are to use the Microsoft Teams Webinar function, as this would have improved the overview of registrations and facilitated the invitation and registration process better. Also, there were limited engagements on the polls, so better communication with the audience on the benefits of polls, as well as better timing of publishing polls during the meeting will improve voting. Moreover, to enhance overall engagement during the main meeting, it is important to brief the participants prior to the workshop with as much as possible information and make sure the right people attend, who have knowledge and authority, and not being represented by more junior staff.

7 Appendices

Appendix A – Global Analysis and Local Sense Check Questions

- Are the global analysis pollution heatmaps showing the distribution of species threatened by each pollution threat type, a realistic reflection of what happens in Namibia? Is your opinion based on experience or published data?
- Are the top species threatened by pollution in Namibia what you expected? If not, please explain why and add references to support your statement.
- Are the results of the global analysis a realistic reflection of the proportion of species threatened by pollution in Namibia? Is your opinion based on experience or published data? If data – please can you include references of information sources. (e.g. article, database, report etc.)
- Are the global analysis results on which pollutant threats pose the greatest threat to species what you expected for Namibia?
- If responding no to the question above, which pollutant threats do you think pose the greatest threat to threatened species in your country?
- Is there any important information missing from the global analysis which could help us understand the sources, types, locations and impacts of pollutants in Namibia? (For example, country geography/topography/demographics, etc.)
- What data (other than threatened species), not presented in the global analysis, that would be useful for guiding decision-making around pollution in a future pollution reduction programme?
- Are there any specific data sources/ databases about pollution sources in Namibia that should be added and incorporated in the Global Analysis? Can you please provide details?
- Please list any additional species or specific ecosystems that you are aware of, where pollution poses a major threat either currently or in the future in Namibia.
- What data, not presented in the global analysis, that would be useful for guiding decision-making around pollution in a future pollution programme?

Appendix B – Participant’s List

Category	Stakeholder	Location
Academics	GIZ-Intern	Windhoek
Academics	GIZ-Intern	Windhoek
Associations	Namibia Agricultural Union	Windhoek
Associations	Recycle Namibia Forum	Windhoek
Associations	Recycle Namibia Forum	Windhoek
Experts	NARREC	Windhoek
NGOs	Development Workshop Namibia	Windhoek
NGOs	GIZ	Rundu
NGOs	Ecoawards	Windhoek
NGOs	Southern African Institute for Environmental Assessment	Windhoek
NGOs	Namibia Nature Foundation	Windhoek
NGOs	Namibia Nature Foundation	Windhoek
NGOs	Namibia Nature Foundation	Windhoek
NGOs	Namibia Nature Foundation	Windhoek
NGOs	Mosaic Consulting/NNF	Windhoek
NGOs	JNCC	Windhoek
NGOs	JNCC	Windhoek
NGOs	World Wildlife Fund Namibia	Windhoek
NGOs	World Wildlife Fund Namibia	Windhoek
Public Sector	City of Windhoek	Windhoek
Public Sector	City of Windhoek	Windhoek
Public Sector	Nampower	Windhoek
Public Sector	Nampower	Windhoek
Public Sector	Namwater	Windhoek
Public Sector	Namwater	Windhoek
Unknown		?
Unknown		?

Appendix C – Chat Box Highlights

Water pollution is a serious concern and is causing eutrophication of our waterbodies.

*Interested in considering INCENTIVES to help reduce plastic pollution
Would like to also consider water pollution eg from runoff from towns, declining systems to manage sewage and wastewater, irrigation runoffs. ...*

How are you involved in pollution? In the Eco Awards criteria, we have a section on Waste, which include a subsection on pollution. I am especially concerned about the testing and quality of waste-water affluent

How are you involved with pollution in Namibia? NEWS would like to get schools involved in monitoring and reducing their pollution e.g. littering, recycling, managing their sewage

I just googled Lion endangered IUCN and they have a pdf with good information if you want to have a look. Thank you for your question.

The Wild Bird Trust have done a great transect on the Kavango river with quite a bit on pollution, the report was released yesterday,

Thank you, there is a new State of Environment Report that was finalised last year (MEFT/GIZ/Urban Dynamics) , we should look into that.

DW Namibia is involved with pollution in Namibia's urban areas through community sensitisation & hygiene promotion, testing of solid waste management strategies and systems, community recycling, clean up campaigns and mapping of solid waste islands across the informal settlements. We also enhance active participation and collaboration with local authorities to pay attention to waste management in their informal settlements.

MET must take responsibility and partake in nationwide approach to some of this key issues without delay.

any waste related questions in City of Windhoek also forward to me and i will see if I can attend to them.

Information and Links provided:

- <https://gahp.net/> - This is one of the project partners that focus on human health
- <http://www.landscapesnamibia.org/windhoek-green-belt/sites/default/files/resources/Water%20Quality%20Assessment.pdf>
- https://www.circularonline.co.uk/news/retask-the-mask-uk-recycling-campaign-tackling-face-mask-pollution/?gclid=Cj0KCQiA_8OPBhDtARIsAKQu0qZ_BdAo1RuZwMDTIJyXYlaerfWiDHvjm8ZqeFAM2tv450F7_qmXXqsaAiuwEALw_wcB
- Retask the Mask: UK recycling campaign tackling face mask pollution. A scheme to recycle single-use facemasks into waste-collection equipment has been launched in the UK. Cornwall social enterprise Waterhaul is leading the 'Retask the Mask' campaign

Appendix D – Breakout Rooms/Groups Detailed Feedback

BREAKOUT ROOM/GROUP 1 (Participants 4):

Main Pollutants:

- Plastic
- Industrial effluents
- Fertilisers - ending up in dams
- Sewage
- Antibiotics
- DDT (need to know quantities used and how it is currently stored)
- Use of poisons (impact on wildlife and other animals)
- Emergency response and use of chemicals/arial spraying (e.g., locust outbreaks)
- Herbicides and Pesticides
- Air pollution, dust pollution (natural, but also recently more human induced, e.g., charcoal production)
- Ground water pollution through human waste
- Medical waste/plastics - masks, impact of Covid-19

Other issues/questions raised:

- Maintenance of sewage systems – clogged drain systems next to boreholes - not reported and repaired, can lead to e-coli in ground water
- What is the legislation around plastic use?
- What is the role of Municipalities?
- Cost of cleaning and pollution mitigating
- Ministries not collaborating enough on pollution – Ministry of Environment, Health, Agriculture, Lands - need to better interaction on specific issues
- Lack of capacity in monitoring, investigation, reporting, awareness

Sources of Pollution:

- Tanneries
- Mining - tailings dams nowadays better managed, but lack of monitoring, leaching occurs, e.g., Aranos area and potential problems there
- Urbanisation
- Agriculture
- Open defecation
- Feedlots (not enough control, depends on where situation, auction houses, dust) – creates nitrates and phosphates
- Cement production
- Transport – especially old Transnamib trains
- State hospitals and incinerators – lack of information and control?

Other issues raised:

- storing of pollutants, chemicals, mining, agriculture - who controls that, how secure?
- Availability of hazardous waste dumps - too few registered sites (one in Okahandja?)

Main Impacts:

- Water pollution - ground water impact on drinking water and human health

- High cost of treating water
- Major gap is implementation and investigation of pollution threat
- Gaps in legislation, but there is legislation available, is it enforced enough?
- Legislation, monitoring, capacity, funding – main drivers

Projects:

- Projects: summarise regulations, identify gaps or where it is not implemented
- Projects: private sector to be involved, incentivisation
- More research into those problems, talk to ministers, raise awareness
- Awards for not only tourism but also other industries for environmental support
- Qualification for pest control - anyone can run that business, reintroduce platform with ministry of agriculture to check skills and controls
- Education in controlling pollution, addressing attitudes also

BREAKOUT ROOM/GROUP 2 (5 Participants):

Main Pollutants:

Solid Waste	Dumpsites not up to standard → Dumped in environment. Maintenance and management is an issue. → Ends up in catchment. Informal settlements not connected to waste collection system. Hazardous waste → No standard or regulations what to do with it (limited communication).
Open Defecation	
Wastewater	Oxidation ponds → Leaking Domestic and industrial waste water runoff. → Leaking sewage pipes. Industry dumping protocols are poorly monitored (limited compliance). e.g. dumping of oil products. No dedicated dumping sites. Ends up in riverbeds and dams.
Plastic	Limited guidelines and governance + Glass Bottles
Fertilisers / Manure	Runoff into rivers or groundwater e.g. Swakoppoort (algal bloom) Also from Wastewater (nitrates, phosphates, ammonia)

Main Sources:

Beverages / Beer	Produce a lot of plastic and glass → Limited recycling.
Water Management / Municipalities	System and facilities, management and maintenance. Have wastewater treatment plants, but effluents remain a problem.
Abattoirs Poultry	Produce considerable wastewater.
Transport	Oil, tyres etc Air pollution
Textile Industry (e.g. Ramatex)	There have been lined ponds but they are constantly overflowing. Remains a problem.
Crop Livestock / Feedlots	Crop: Fertiliser runoff. Feedlots produce a lot of manure. They are centralised, but it created large volumes → Management?
Mining (Copper, Zinc, Oil)	How is the waste managed?
Fisheries	
Tourism	Solid waste in remote areas.

Impacts:

Health	<p>Suffer from pollution they are not responsible for → Diseases (Hepatitis E outbreak in 2017), Cholera, diarrhoea etc.</p> <p>Contamination from environment → Impacts on quality of life & dignity (esp. solid waste).</p> <p>Often toxic / poisonous materials are dumped.</p> <p>Especially human waste and industrial wastewater.</p>
Water Contamination	<p>Surface and underground water affected by pollution –esp. surface water. (often coming from the agricultural sector) → Eutrophication (esp. Khomas Region)</p> <p>Also infiltrates into groundwater.</p> <p>Groundwater impacted by mining waste e.g. sulfuric acid transport in bulk. Train derailed → Limited soil rehabilitation. Once it rains the whole surrounding becomes contaminated. Some similar incidences.</p> <p>Integrated system: Pollution from river beds, dams are connected.</p>
Soil Contamination	<p>Agriculture → Indiscriminate application. Limited capacity.</p> <p>Mining</p> <p>Plastic / micro-plastics takes very long to decompose</p>
Biodiversity	<p>Biodiversity loss</p> <p>Impact of mining, fisheries and industrial effluents</p>
Air Pollution	<p>Cement industry incinerators, transport, veld fires, burning of solid waste</p>

Interventions and Stakeholders

Swakoppoort Water Management Committee / Catchment Forum	Rent a Drum: Clear & Black Bag System, Mobile Recycling Stations (ENP)	NamibGreen Recycling E-Waste
Plastic Bag Reduction / Levy – Recycling Forum	Recycling Forum / Hope Village: Buy-Back of Recyclables	OtjiToilet – Toilet Production and reuse as fertiliser.
DW: Sanitation & Solid Waste Management	<ul style="list-style-type: none"> Volunteers in 8 towns working on awareness (waste management) → Work with municipalities to find effective solution. Pilots of strategies & mapping of waste islands (in open spaces & river beds) → Work with communities to reduce waste islands & formalise waste sites. Promote community recycling: Sort waste, provide refuse bags → SMEs Advocacy for informal settlements (management & investments) & Work with local authorities Clean Up Campaigns & National Clean Up Day (Committee was set up) Exploring waste to energy Community led sanitation approach in 8 towns: Build own latrines to reduce public defecation. 	
Behavioural Change	Individual responsibility	

BREAKOUT ROOM/GROUP 3 (5 Participants):

Main Pollutants:

- Plastics
- Agricultural pollutants and pesticides

Main Sources:

- Industry
- Agriculture
- Mining
- Going forward
- Exploring fisheries and pollution as it's a driver of the economy – Namibia fishery already has MSC certification
- Covid-19 PPE as an emerging waste?

Impacts and Threats:

- Prevalent in the landscape – no proper management facilities
- Ends up in the food chain – human health impact
- Can contribute to climate change
- Need to understand the context
 - Plastic is in everything and there is no economical and environmentally viable alternative

Initiatives:

- Generally good intentions from industry, govt and citizenry to do something about pollution.

Industry

- Looking at best technologies to reduce waste.
 - o Newer technologies (e.g. solar power) less energy and water intensive – climate co-benefits.
- Clean up campaigns (also engaging schools) and workshops
- Govt. needs to come on board and support industry.

Government

- Policy action on waste management – pollution bill and efforts to ban certain pesticides. MEFT must play an important role in this.
 - Levies on plastic – EIF is working on this. Would be used for sustainable management of resources

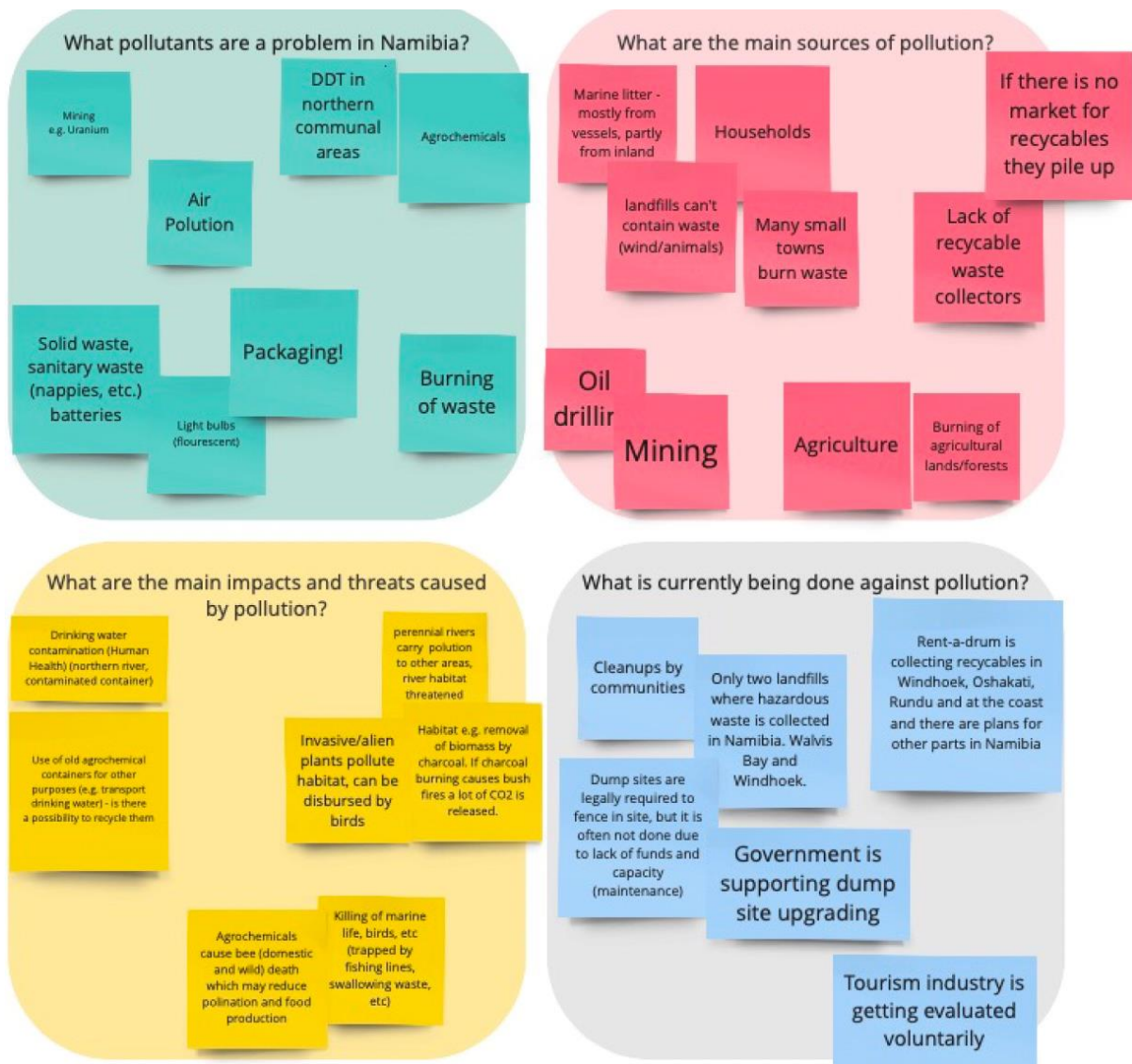
Other

- Leading organization in waste management and recycling in Namibia leading organization in waste management and recycling in Namibia: <https://www.rent-a-drum.com.na/about>
- Gathering, understanding and sharing knowledge about arid environments. Report on plastic pollution: <https://gobabeb.org/>
- Recycle Namibia Forum aiming for a zero-waste-to-landfill paradise: <https://rnf.com.na/>
- Pilot initiative at Etosha national park looking at solid waste management: <https://www.nwr.com.na/nwr-establishes-solid-waste-management-team-and-observes-arbor-day/>

What should be done?

- Education at junior level on environmental management.
- Monetary incentives for reducing plastics. Buy back schemes like in Europe. Pushing up the value and giving people a fair return. Profitable for people and industry.

BREAKOUT ROOM/GROUP 4 (6 Participants):



Increase
recyclable
waste
collection

ships need to
contain waste and
dispose of in inland
(education/policing
legal requirements
is very difficult)

increase value
addition
opportunities
for waste

COW wants
to set up buy-
back centers

What can we do?

-
- awareness creation "re-think"
e.g. environmental education in
schools
- project with MET and
secondment of an expert to
assist this municipalities to
speed up improvement of dump
sites

