APP-004884

AGRICULTURAL RELATED ACTIVITIES AND THE ENVIRONMENTAL RELEASE OF GENETICALLY MODIFIED MAIZE AND COTTON ON FARMS OTAGO AND HERMANSKAMP, OTJOZONDJUPA REGION

PROOF OF PUBLICATION PARTICIPATION

Assessed by:

Assessed for:

A Coetzee

October 2024

Proof of Public Consultation

Notified IAPs

Name	**Surname**	**Organisation**
Agatha	Mweti	Otjozondjupa Regional Council
Memory	Garonga	Otjozondjupa Regional Council
Sabine	Menne	Sasebo FMB/00025
Wim	Lubbe	Freinfelde FMB/00033 Lenzfield FMB/00357
Claudia	Dohman	Aachen FMB/00329 Einbaum FMB/00346
Mr.	Mwanxa	Texas FMB/00347 De rust ged.iii FMB/00348 Frankfort FMB/00360
Madelein	Malan	PfeiffersfeldeE FMB/00362 OdeumFMB/00363
Rakel	Johannes	Namibian Organic Association (NOA)
Mareike	Aufderheide-Voigts	
Eckhart	Förtsch	
Vera	Corry	

Notification Letter Otjiwarongo Regional Council

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To: **Chief Regional Officer**
Otjozondjupa Regional Council
Otjiwarongo
Namibia

29 February 2024

Re: **Environmental Scoping Assessment and Environmental Management Plan for Agricultural Activities and the Environmental Release of Genetically Modified Maize and Cotton on Farms Otago and Hermanskamp, Otjozondjupa Region**

Dear Sir/Madam

Geo Pollution Technologies (Pty) Ltd was appointed by A Coetzee to undertake an environmental assessment for agricultural activities and the environmental release of genetically modified (GM) maize and cotton on farms Otago FMB/00024 and Hermanskamp FMB/00361, in the Otjozondjupa Region (see location map on page 2). The assessment will be conducted according to the Environmental Management Act of 2007 and its regulations as published in 2012.

Project: Environmental Scoping Assessment and Environmental Management Plan for Agricultural Activities and the Environmental Release of Genetically Modified Maize and Cotton on Farms Otago and Hermanskamp, Otjozondjupa Region

Proponent: A Coetzee

Environmental Assessment Practitioner: Geo Pollution Technologies (Pty) Ltd

The Proponent has 310 ha utilized for dry-land cultivation. The main crops cultivated are maize, sorghum and cow peas. In order to improve productivity, the Proponent wishes to replace the traditional maize cultivars with insect and/or roundup resistant GM strains and also to cultivate GM cotton.

The main operational activities that will be addressed in the SR pertain to the transport, storage and planting of GM maize and cotton seeds, the management of the crops during the growing period, the application of pesticides to the crops, harvesting of the crops, and the handling and transport of the harvested maize and cotton to the markets. Fuel for farm vehicles is stored in an aboveground diesel tank. General operations also include activities such as electricity supply, waste handling and sewage disposal.

The Regional Council is invited to register with the environmental consultant to receive further documentation and communication regarding the project. By registering, a communication channel will be established between the Regional Council and the environmental practitioner. The Regional Council will further be provided with an opportunity to provide input that will be considered in the drafting of the environmental assessment report and management plan. Please register either by:

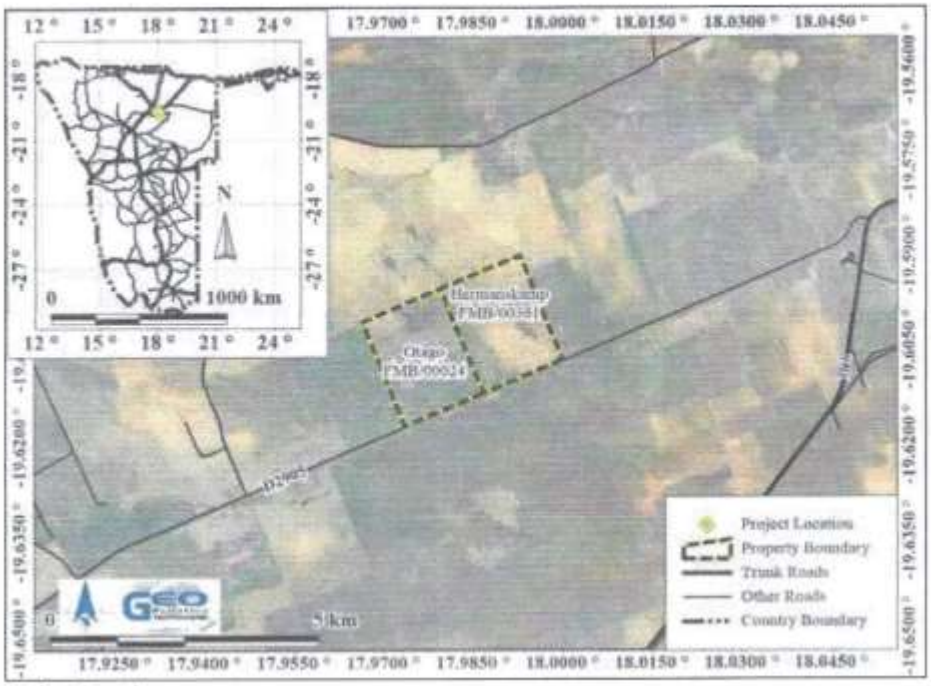
Fax: 088-62-6368 or

E-Mail: otago@thenamib.com

Should you require any additional information please contact Geo Pollution Technologies at telephone 061-257411.

Sincerely,
Geo Pollution Technologies

Quzette Bosman
Social and Environmental Assessment Practitioner



Project Location

Background Information Document

ENVIRONMENTAL SCOPING ASSESSMENT AND ENVIRONMENTAL MANAGEMENT PLAN FOR THE AGRICULTURAL ACTIVITIES AND ENVIRONMENTAL RELEASE OF GENETICALLY MODIFIED MAIZE AND COTTON ON FARMS OTAGO AND HERMANSKAMP, OTJOZONDJUPA REGION

BACKGROUND INFORMATION DOCUMENT

Prepared by:

Prepared for:

A Coetzee

February 2024

1 INTRODUCTION

Geo Pollution Technologies (Pty) Ltd was appointed by A Coetzee (the Proponent) to undertake an environmental assessment for the environmental release of genetically modified (GM) maize and cotton on farms Otago (FMB/00024) and Hermanskamp (FMB/00361) in the Otjozondjupa Region (Figure 1-1). The Proponent has 310 ha utilized for dry-land cultivation. The main crops cultivated are maize, sorghum and cow peas. In order to improve productivity, the Proponent wishes to replace the traditional maize cultivars with insect and/or roundup resistant GM strains and also to cultivate GM cotton.

An environmental clearance certificate (ECC) for the environmental release (cultivation) of genetically modified organisms (GMO) is required as per the Environmental Management Act No. 7 of 2007 (EMA). A scoping environmental assessment report (SR) and an environmental management plan (EMP) are proposed to be submitted to the Ministry of Environment, Forestry and Tourism's Department of Environmental Affairs (DEA) in consideration of an application for an ECC. The environmental assessment will include all operational aspects related to the cultivation of GM maize and cotton by the Proponent and will also include fuel storage and additional farming related activities.

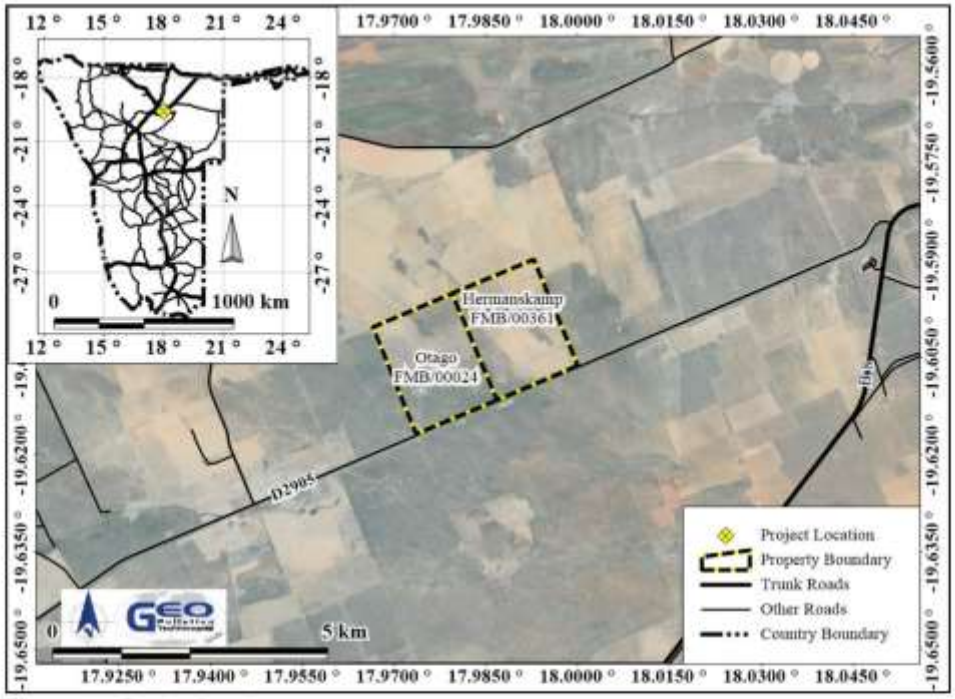


Figure 1-1 Project location

2 PURPOSE OF THE BID

With this background information document (BID), GPT aims to provide interested and affected parties (IAPs) with information about the project and interact with them regarding it. All IAPs are therefore invited to register with GPT for the project in order to:

- Provide GPT with additional information which should be taken into account in the assessment of impacts;
- Share any comments, issues or concerns related to the project; and
- Review and comment on the reports (SR and EMP).

3 PROJECT DESCRIPTION

The Proponent owns the farms with all infrastructure required for the cultivation of GM maize and cotton, already in place, since the farms have traditionally been a crop cultivation unit for many years. Activities associated with the project have been divided into the following phases: planning, operational and the decommissioning phase. A brief outline of expected activities for each phase is detailed below.

3.1 PLANNING PHASE

Planning is an ongoing process in preparation of the planting of GM maize and cotton as well as during and after the planting of such crops. As part of planning, it is the responsibility of the Proponent to ensure they are and remain compliant with all legal requirements. The Proponent must also ensure that all required management measures are in place prior to and during all phases, to ensure potential impacts and risks are minimised. Typical planning activities include:

- Obtain permits and approvals from local and national authorities including approval for environmental release of GMOs from the National Commission on Research, Science and Technology and a consumer fuel insulation certificate from the Ministry of Mines and Energy.
- Make provisions to have a health, safety and environmental coordinator to implement the EMP.
- Ensure provisions for a fund to cater for environmental incidents if ever required.
- Ensure all appointed contractors and employees enter into agreements which include the EMP.
- Establish and/or maintain a reporting system to report on aspects of operations and decommissioning as outlined in the EMP.

3.2 OPERATIONAL PHASE

Genetically modified crops have the potential to increase profitability by mainly reducing input costs related to pest control. The two main traits in the GM maize and cotton cultivars proposed to be planted are insect and RoundUp resistance.

Insect resistance is achieved by the insertion of certain gene segments of the *Bacillus thuringiensis* bacterium which produces a protein that is toxic to target pests of the insect order Lepidoptera (moths and butterflies). Specifically the larvae stages (caterpillars) are targeted as they die when eating the crops, therefore breaking the life cycle of the pest species.

RoundUp is the trade name of a systemic herbicide containing the active ingredient glyphosate. RoundUp resistance in crops has, among others, the advantage of a reduced need for mechanical weeding of fields. Also, often fields are prepared for planting by first allowing the weeds to germinate and grow, then spraying such weeds with herbicides, and once dead, planting of crops can commence. During short growing seasons, this is not always possible and by planting RoundUp resistant crops, you can immediately start planting and then spray while both the weeds and crops are on the field. RoundUp resistance is achieved by inserting gene segments from the bacteria *Agrobacterium* sp. strain CP4. It produces an enzyme that is tolerant to glyphosate, thus allowing the GM crop to grow in the presence of glyphosate.

The following is a list of the GM maize and cotton cultivars (or events) proposed for environmental release.

GM Event	Crop Type	Trait
MON 810	Maize	Insect Resistance
MON 89034	Maize	Insect Resistance
NK 603	Maize	RoundUp Resistance
MON 89034 × NK 603	Maize	Insect Resistance and RoundUp Resistance
NK 603 × MON 810	Maize	Insect Resistance and RoundUp Resistance
MON 88913	Cotton	RoundUp Resistance
MON89913 × MON15985	Cotton	Insect Resistance and RoundUp Resistance

The main operational activities that will be addressed in the SR pertain to the transport, storage and planting of GM maize and cotton seeds, the management of the crops during the growing period, the application of pesticides to the crops, harvesting of the crops, and the handling and transport of the harvested maize and cotton to the markets. Fuel for farm vehicles is stored in an aboveground diesel tank. General operations also include activities such as electricity supply, waste handling and sewage disposal.

3.3 Decommissioning Phase

In the context of GM crop cultivation, decommissioning refers to the termination of cultivation of any GM crop. Such decommissioning is not foreseen during the validity of the ECC. Decommissioning will however be assessed. Should decommissioning occur at any stage, aftercare will be required to ensure no GM maize and cotton remain on the cultivated fields and that regrowth be controlled by chemical and/or mechanical means.

Decommissioning of selected infrastructure may occur and will also be assessed. Should decommissioning occur at any stage, rehabilitation of the area may be required. Decommissioning will entail the complete removal of all infrastructure including buildings and underground infrastructure. Pollution present on the site, if any, must then be remediated.

3.4 Preliminary Identified Impacts

During the environmental assessment all components of the environment will be considered, however only those components which are being impacted on significantly, or are deemed to be sensitive, will be assessed. These include the following:

- Socio-economic contributions
- Health and safety risks
- Ecosystem and biodiversity impacts
- Cross pollination of GM and non-GM crops
- Soil and groundwater pollution
- Fire risks
- Waste and effluent generation and disposal
- Traffic
- Noise

4 PUBLIC CONSULTATION

GPT invites all IAPs to provide in writing, any issues and suggestions regarding the project. This correspondence must include:

- Name and surname
- Organization represented or private interest
- Position in the organization
- Contact details
- Any direct business, financial, personal or other interest which you may have in the approval or refusal of the application

All contributions become public knowledge and will be circulated along with the reports as per the EMA requirements. The comments, inputs and suggestions will also be submitted to the DEA along with how any issues have been addressed in the SR. The public participation process will remain ongoing during the environmental assessment.

The project team may be contacted on the contact details below

Geo Pollution Technologies (Pty) Ltd.
Telephone: (+264-61) 257411
Fax: (+264) 88626368
E-mail: otago@thenamib.com

Your Rights as an IAP according to the Environmental Management Act, No7 of 2007, Government Notice No 30 (Environmental Impact Assessment Regulations)

Section 23. (1) A registered interested or affected party is entitled to comment in writing, on all written submissions made to the Environmental Commissioner by the applicant responsible for the application, and to bring to the attention of the Environmental Commissioner any issues which that party, believes may be of significance to the consideration of the application, as long as -

(a) comments are submitted within 7 days of notification of an application or receiving access to a scoping report or an assessment report;
(b) the interested and affected party discloses any direct business, financial, personal or other interest which that party may have in the approval or refusal of the application.

(2) Before the applicant submits a report compiled in terms of these regulations to the Environmental Commissioner, the applicant must give registered interested and affected parties access to, and an opportunity to comment in writing on the report.

(3) Reports referred to in sub regulation (2) include (a) scoping reports; (b) scoping reports amended and resubmitted; (c) assessment reports; and (d) assessment reports amended and resubmitted.

(4) Any written comments received by the applicant from a registered interested or affected party must accompany the report when the report is submitted to the Environmental Commissioner.

(5) A registered interested or affected party may comment on any final report that is submitted by a specialist reviewer for the purposes of these regulations where the report contains substantive information which has not previously been made available to a registered interested or affected party.

Section 24: The applicant responsible for an application must ensure that the comments of interested and affected parties are recorded in reports submitted to the Environmental Commissioner in terms of these regulations, and comments by interested and affected parties on a report which is to be submitted to the Environmental Commissioner may be attached to the report without recording those comments in the report itself.

Press Notice: The Namibian Sun 22 and 29 February 2024

• AUTHORITIES TAKE URGENT STEPS TO PROTECT POPULATION

Oshikoto battles steep rise in malaria cases

More than 250 cases of malaria have been reported in the Oshikoto Region between January and 18 February this year.

CLAUDIA REITER
WINDHOEK

Oshikoto regional health director Joshua Nghipangelwa has urged community members to seek early treatment following an outbreak of malaria in the region.

According to Nghipangelwa, 256 cases of malaria were reported between January and 18 February this year.

"The regional crisis response team and the district response team have started responding to the outbreak," he said.

He added that the team has investigated a majority of cases and visited the most-affected areas to educate the population about the risks and to distribute long-lasting insecticidal mosquito nets.

"We have also introduced new methods to contain the increasing malaria cases in the region by combatting breeding sites with larvae and spraying houses that have reported cases," Nghipangelwa said.

On the ground

He said health authorities are testing and treating cases both at health facilities and within the community, conducted by community health workers.

"These cases are sporadic. The entire region is affected, but the most-affected constituency is Okankolo."

Nghipangelwa said Onandjokwe District Hospital has recorded the highest number of cases with 92, and most of these cases originated from the Okankolo constituency.

Tsumeb Hospital has recorded 84 cases and Omuthiya District Hospital recorded 80 cases from January to 18 February.

"Everyone is at risk of contracting malaria, so no one is safe," he warned.

He urged residents of the region to protect themselves from mosquito bites both outdoors and in their homes.

Ohangwena outbreak

In late January, Namibia Media Holdings reported that the Ohangwena Region had recorded a total of 392 cases of malaria.

Of these, 154 cases were documented locally in Ohangwena, while 238 cases originated elsewhere.

George Jeremiah, the acting regional health director, said at the time that there has been a shortage of testing materials over the past two months, and they now rely exclusively on microscopic tests conducted in laboratories in the region.

"Looking at the statistics for 2023, malaria cases have slightly increased. The local cases are very dangerous, indicating that the vector is within Namibia and not outside," he said in January.

In their efforts to contain the further spread of malaria, the region deployed a team of 241 sprayers to the three districts last year.

Justine Haikali, the senior environmental and health practitioner in Ohangwena and coordinator of the malaria spraying programme, said the teams had covered 35% of at-risk villages.

She added that only a few households still refused to have their houses sprayed – unlike in the past when many resisted.

Health authorities also reported that in 2023, four people in the region died from malaria.

AT RISK: Health authorities are taking steps to counter rising malaria cases in the Oshikoto Region. PHOTO: FILE

//Karas governor optimistic about regional development

ELIZABETH KHEIBES
WINDHOEK

//Karas regional governor Aletha Frederick says Namibia's oil and gas discoveries present unprecedented opportunities for the region's economic growth and prosperity.

"The potential for massive new green hydrogen development further solidifies our region's position as a key player in Namibia's sustainable energy future," she said during a recent regional consultative meeting for the National Development Plan 6 (NDP6).

The governor said she envisions the region becoming not only "a hub of economic activity but also a beacon of sustainable development in Namibia. With the right support and financing from the national government, we have the power to eradicate poverty, hunger and unemployment in our region."

In addition, Frederick highlighted the importance of local community participation in the vast opportunities presented by regional development.

"As we embark on this journey of envisioning the future of our region, it is imperative that we recognise the immense potential that lies within //Karas – a region blessed with abundant mineral and natural resources, a thriving fishing industry, significant mining activities and an expanding tourism sector," she said.

Frederick also called for the full development of the region's agricultural sector, which is currently "underutilised".

POTENTIAL: //Karas regional governor, Aletha Frederick. PHOTO: FILE

POLICE OFFICER'S FRAUD CASE CONTINUES

KRISTIEN KRUGER
WINDHOEK

The trial of the former police officer Ricardo Nestor, who was initially charged with fraud amounting to more than N$10 million, continued in court this week.

However, Nestor is now only facing three charges of fraud related to N$720 000 after the court acquitted him of six charges.

He has already taken the stand and testified in his own defence. The case has been postponed to 19 April for final submissions before conviction.

Nestor further filed an application under Section 174 of the Criminal Procedure Act, arguing that the State had not presented enough evidence for the court to find him guilty.

STILL IN COURT: Fraud accused Ricardo Nestor and his legal representative, Albert Titus. PHOTO: FILE

Direct evidence lacking

Judge Philanda Christiaan acquitted Nestor of six out of the nine charges he faced in November. She found that they had not succeeded in proving a case beyond a reasonable doubt against Nestor.

Christiaan further stated that the State's case is primarily based on circumstantial evidence, with no direct evidence linking Nestor to the crimes committed.

"There are no facts presented that prove that the accused had access to the computers, the login credentials or the internet banking profiles of any of the complainants," Christiaan said in her judgment.

She further said there is no evidence that Nestor received or drew on the funds transferred from these accounts.

The charges on which he was acquitted relate to allegations that Nestor defrauded Namibia Marble and Granite near Karibib and/or Carmen Bianca Wittvrich of an amount of N$10 million. Additionally, there is a further charge that he defrauded, among others, Spot-On Discount Liquor and Meransha Properties.

Additional charges

The charges that Nestor still faces pertain to Tayo Namibia. It is alleged that Nestor falsely represented to Tayo Namibia that the bank account of Walcon Construction had been changed from Bank Windhoek to Standard Bank and that Tayo Namibia should pay an amount of N$720 000 into the Standard Bank account for work that was purportedly done by Walcon Construction.

Nestor is currently in custody at Windhoek Central Prison.

kristien.kruger-hub.com.na

City acts swiftly against illegal paper dump

ELIZABETH KHEIBES
WINDHOEK

On Monday, a pedestrian in Windhoek's Agste Laan witnessed unidentified individuals dumping thousands of documents from the education ministry at an unauthorised location.

The documents included old question papers and curriculum vitae. The ministry's executive director, Sanet Steenkamp, confirmed that the photos and videos sent to her by Namibian Sun displayed several personal and public documents from the ministry being discarded unlawfully.

"These are indeed from the ministry, from the examination directorate. I have since given clear instructions that they need to retrieve these documents and correctly dispose of them," Steenkamp said. "Some things are usually kept for archival purposes, and in this case, I believe that someone did not do what was expected of them. We apologise for this," she added.

Aggressive

According to the witness to the unlawful document dump, the culprits passed a designated dumpsite in the Kupferberg area and "carelessly" got rid of the documents at a random place.

"I approached the private vehicle and tried to question the men about the dumping, but that led to aggressive responses instead," the bystander said.

"I started taking photos and videos that I planned to share to get help clearing up the area," the source, only known as Ruben, explained.

City acts promptly

City of Windhoek officials, who were given access to the photos and video, later tracked down the driver from a licence plate that was shown in the images and resolved the matter.

"We managed to locate the illegally dumped waste alongside Sam Nujoma Road on the way to Daan Viljoen. Due to the nature of the waste, which is paper that can easily blow away, our team cleaned up," the City said.

"We also managed to locate the culprit through the vehicle registration number and he will be fined an amount of N$1 608 for illegal dumping. This will be billed on his municipal account," city spokesperson Lydia Amutenya said.

Amutenya highlighted continuous efforts by the municipality to keep the streets of Windhoek clean and said they cannot tolerate illegal dumping of waste.

"Waste must be disposed of properly at our respective landfill. We also have waste recycling initiatives where this type of waste can be recycled," she said.

Ondangwa electrification project advances

• LIGHTS ON

The Ondangwa council has provided 300 electrical connections **and is working on connecting around 153 households at the moment.**

TUYEIMO HAIDULA
ONDANGWA

As the Omahenene electrification project in Ondangwa advances, the council hosted a community meeting on Tuesday to inform affected residents of the procedures that will be used to connect their houses.

The project, funded by the mines and energy ministry and executed by Nored, was initially scheduled to be implemented in the 2020–21 financial year, but due to Covid-19, it was rescheduled to take place between September 2023 and January this year.

Ondangwa town spokesperson Petrina Shitalangaho-Mutikisha said council provided 300 electrical connections and is currently working on connecting around 153 households.

"We would like to extend our heartfelt thanks to the residents of Uuskopa, Omahenene and Epya for their patience and cooperation during the construction work in Omahenene. Their understanding and support have allowed this project to be carried out as planned without any interruption or delay from their side," Shitalangaho-Mutikisha said.

Omahenene is one of the oldest informal settlements in Ondangwa and is classified as a low-income area.

Quality of life

Shitalangaho-Mutikisha added that the process of household connections has started, and homeowners who qualify for household connections will get connected.

"They will be required to have a letter of recommendation from the council with matching details of what is on their certified copy of the Namibian identification document," she explained.

"Overall, the importance of house electrical connections cannot be overstated, as they are integral to the safety, functionality and comfort of modern homes," Shitalangaho-Mutikisha added.

She said although in the past there were a number of challenges associated with an area without electricity, this will now be a thing of the past with streets, dark areas and homes being electrified.

She urged residents to look after their property, saying the council will focus on electrifying other areas and not repairing vandalised items.

PROGRESS: The Ondangwa electrification project is advancing. PHOTO: TUYEIMO HAIDULA

Press Notice: Die Republikein 22 and 29 February 2024

PUBLIC PARTICIPATION NOTICE

ENVIRONMENTAL IMPACT ASSESSMENTS FOR AGRICULTURE AND ENVIRONMENTAL RELEASE OF GENETICALLY MODIFIED MAIZE AND COTTON FOR CULTIVATION

Geo Pollution Technologies (Pty) Ltd (GPT) was appointed by the Proponents: A Coetzee, F Blume, H van Eeden, HB Eggert, JN Malan, JW Brandt, KJ Gönzel, NJ Jacobsz, RH van Eeden, RP Menne and WF Lubbe, to undertake environmental assessments for agricultural activities and the environmental release of genetically modified (GM) maize and cotton for cultivation on their respective farms in the Otjozondjupa and Oshikoto Regions, as indicated in the below map. Additional information about the respective Proponents' farms and farming activities can be obtained from GPT or viewed at: http://www.thesamib.com/projects/projects.html

The environmental assessments will be conducted according to the Environmental Management Act of 2007 and its regulations published in 2012. Depending on the respective Proponents' individual farming activities, aspects related to cultivation of GM maize and cotton, water abstraction, fuel storage and hospitality and tourism facilities, will be included.

All interested and affected parties are invited to register with GPT. By registering you are provided with the opportunity to share any comments, issues or concerns related to the projects, for consideration in the environmental assessments. Additional information can be requested from GPT. Tel: +264-61-257411; Fax: +264-88626368; E-Mail: geo@thesamib.com

Dr. André Faul
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PUBLIC PARTICIPATION NOTICE

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Fax: +264-88626368;
E-Mail: geo@thesamib.com

Site Notice

IAP Details	Comment / Concern	Response
Claudia Dohman WhatsAPP 2024/04/09	A bit late, but these are my concerns: 1. Cross polination with my maize....some of the fields are right next to mine. (6m and 100m) 2. A lot of Glyphosate will be used and as our waterlevels of our boreholes here are at 6 to 12m . I am concerned that the Glyphosate will end up in the groundwater. 3. I am just concerned that my neighbours won't adhere to the regulations of planting GMO maize. As I have seen in the past, the people who were supposed to check whether there were GMOs planted, were maybe scared of the farmers or the techniques were not right. The maize was there and nothing was found. Maybe it is very difficult to control what the farmer does. Thank you.	Thank you Kindly Claudia. We will consider it in our reporting. Your time is appreciated. Sincerely,

Comments and Responses Report: Comments from the Namibian Organic Association Received: 12 November 2024 via Email

Comment 1

12 November 2024

Subject: Response to the Environmental Impact Assessment by Geo Pollution Technologies for the cultivation of genetically-modified maize and Cotton Farms Otago and Hermanskamp, Otjozondjupa Region

Interested and Affected Party: Namibian Organic Association (NOA)

NOA Board members:

Mareike Voigts (Chairperson)
Eckhart Förtsch (Vice Chairperson)
Vera Corry (Secretary)
Selma Nasheya
Jacobina Lumambo
Johannes Negongo
Dirk Bockmühl
Immo Böhm
Lydia Nakupanda

To whom it may concern,

Please find attached here some comments and queries with regard to the Environmental Impact Assessment for the cultivation of genetically modified maize on farms Otago and Hermanskamp. Attached also is a position paper by the Namibian Organic Association from April 2023 in response to the importation of genetically modified feed by AGRA.

Response 1: The response is well received and the position paper by the Namibian Organic Association from April 2023, in response to the importation of genetically modified feed by AGRA, is noted.

Comment 2

Background

The Namibian Organic Association is a membership-based voluntary association that was founded in 2009 by producers and consumers passionate about healthy, sustainably produced food. The organization's mandate is to grow the organic sector in Namibia, thereby increasing the accessibility of local, healthy, nutritious food to all Namibians. This is done through awareness raising campaigns, training workshops, offering certification for organically produced food for the local market, and more recently, by engaging with government through the establishment of a Technical Working Group on Organic Agriculture and Agroecology which will form part of the Food Security Working Group under the Office of the Prime Minister (OPM).

Standing with organic movements across the globe, NOA and its members are guided by the four principles of organic agriculture, namely: Health, Ecology, Fairness and Care (as defined by the International Federation of Organic Agriculture Movements, IFOAM – Organics International), as well as by the 13 principles of Agroecology. These principles guide management practices across the value chain of the food system and contribute directly to multiple Sustainable Development Goals (SDGs): -

SDG 1: Eradication of poverty
- SDG 2: Eradication of hunger
- SDG 4: Ensuring quality education
- SDG 5: Achieving gender equality
- SDG 6: Increasing water-use efficiency
- SDG 8: Promoting decent jobs
- SDG 12: Ensuring sustainable consumption and production
- SDG 13: Building climate resilience
- SDG 15: Halting the loss of biodiversity.

NOA stands for food sovereignty through sustainable food production that is practiced through crop diversity, seed saving and seed sharing, using seeds adapted to local environments as well as conventional crop breeding methods to enhance production within local environments. Capacity building within the country through supporting farmers – subsistence, small-scale and commercial – is a main focus for NOA.

With regard to the cultivation of genetically modified organisms (GMOs), NOA calls for:
- Transparent processes and full public participation
- Fully independent research trials/studies
- Risk assessments for GMOs to include herbicide/pesticide impacts

- All GMO products to be clearly labelled to inform consumers.

NOA would also like to point to the study by Noack et al. (2024), which highlights that while much of the literature focus on yields of GM crops, there is very little focus on the social and environmental impacts of GMO cultivation. This is also highlighted in a report by the African Centre for Biodiversity, which NOA urges all decision-makers, environmental impact assessors and farmers to familiarize themselves with, as well as the references therein:

• Africa Centre for Biodiversity. 2020. GMOs in South Africa 23 years on: Failures, biodiversity loss and escalating hunger

Response 2: Background introduction is noted.

Comment 3

Queries/comments on the Environmental Impact Assessment (EIA):

1. GM Maize that is herbicide resistant (event NK603) is cultivated in conjunction with the herbicide 'Roundup', the active ingredient of which is glyphosate. While this product is still available in Namibia on the shelves, it is well documented that this chemical is carcinogenic (OEHHA, 2019) and has been linked to several chronic diseases, such as non-Hodgkin lymphoma, with exposure to glyphosate increasing the chance of cancer by 40% (Zhang, et al., 2019). Furthermore, the "adjuvants" (chemical additives) that are used in the formulation of Roundup make it even more toxic than glyphosate alone, which is largely unknown to the public and decision- makers (Mesnage et al., 2015). The EIA does not deal sufficiently with the impacts of glyphosate (the active ingredient in Round up) on the health of humans and animals.

Response 3: The authors of the EIA are well aware of the inherent dangers of not only an herbicide like glyphosate (and RoundUp), but also many other commonly used pesticides, including those used by the laymen around their own homes and gardens. Many of these have not received the attention of glyphosate, as they are not linked to GM crops. They are however used on crops we buy in our stores on a regular basis. In an ideal world, we think it is safe to assume that, all other things being equal, no single person will willingly choose a crop grown with pesticides over a crop grown without any. Unfortunately, reality is quite different from idealism, and factors like the price of organic vs non-organic foods influence this decision, especially in a country where a large portion of population lives below the poverty line.

The above being said, the debate on the carcinogenicity of glyphosate is ongoing. However, a critical analysis of the Zangh et al. (2019) paper by the US EPA, found various flaws in the Zhang et al. study and concluded that the study by Andreotti et al. (2018) remains the largest, best-designed high quality study, and their categorization of glyphosate as "*not likely to be carcinogenic to humans*" remains.

The very detailed review of GM crops by the National Academies of Sciences, Engineering, and Medicine (2016) had to conclusions on cancer incidence linked to GM crops:

FINDING: The incidence of a variety of cancer types in the United States has changed over time, but the changes do not appear to be associated with the switch to consumption of GE foods. Furthermore, patterns of change in cancer incidence in the United States are generally similar to those in the United Kingdom and Europe, where diets contain much lower amounts of food derived from GE crops. The data do not support the assertion that cancer rates have increased because of consumption of products of GE crops.

FINDING: There is significant disagreement among expert committees on the potential harm that could be caused by the use of glyphosate on GE crops and in other applications. In determining the risk from glyphosate and formulations that include glyphosate, analyses must take into account both marginal exposure and potential harm.

It may be worthwhile studying the National Academies of Sciences, Engineering, and Medicine (2016) document.

Ultimately, it remains crucial that farmers apply RoundUp, as with all other pesticides, according to the prescribed instructions and in a responsible manner.

References:

Andreotti G, Koutros S, Hofmann JN, Sandler DP, Lubin, JH, Lynch CF, Lerro CC, De Roos AJ, Parks CG, Alavanja MC, Silverman DT. 2018. Glyphosate use and cancer incidence in the Agricultural Health Study. JNCI: Journal of the National Cancer Institute. 110(5): 509–516. doi:10.1093/ jnci/djx233.

National Academies of Sciences, Engineering, and Medicine. 2016. Genetically Engineered Crops: Experiences and Prospects. Washington, DC: The National Academies Press. doi: 10.17226/23395.

Comment 4

2. Given that there are several movements in the EU and the US to ban this chemical for use in the agricultural sector, NOA would like to raise the question as to whether it is imperative to set up a cultivation

system that is totally reliant on the use of this herbicide? What would the economic implications be if this chemical is banned in the EU (and the US) where many of Namibia's beef exports are destined to?

Response 4: Most of, if not all, animal feed used to supplement cattle's diets, especially now during drought conditions, already contain GMOs. Also, as indicated in the specialist study, the Meat Board of Namibia has confirmed that the export status to the European Union are not negatively influenced by the fact that Namibian animal feed already contains GM ingredients, inclusive of RoundUp Ready Maize. It is also not an irreversible cultivation system. Permits for planting of GM crops needs to be renewed on an annual basis.

Comment 5

3. It is often argued that the cultivation of herbicide resistant GM maize leads to a decrease in herbicide use. There are, however, studies showing the exact opposite (Perry, et al., 2016). Not only does herbicide use remain the same as before, or even increase, but because herbicide resistance does develop in weeds, more herbicide is used, or even more toxic herbicide alternatives are being used, e.g. glufosinate, dicamba, 2-D (REFERENCE). Bayer recommends overlapping use of residual herbicides with glyphosate, the examples of which that are given are partly already banned in the EU or in the process of being banned (e.g. Atrazine, Simazine, Metribuzin, Metachlor). Is the cultivation of herbicide-resistant ('Roundup Ready') GM maise then a sensible and sustainable system to invest into?

Response 5: Likewise, there are studies indicating that there are no definitive proof that herbicide use increase. See the National Academies of Sciences, Engineering, and Medicine (2016) report. Furthermore, herbicide resistance in weeds is not a concern in GM crops only. It also develops under traditional crop farming where weeds are sprayed prior to planting of fields. The same argument can therefore be made for non-GM crops.

Comment 6

4. Pg. 21: It is argued here that GM crops need to be used because the use of herbicides (on non-GM crops) leads to weed resistance. This statement is problematic since it is also the use of herbicides in GM herbicide-resistant crops that leads to weed resistance (Heap and Duke, 2018; even highlighted in a report by Bayer on glyphosate), perhaps even more so as farmers that use herbicide-resistance GM crops start to rely on only one herbicide, rather than an Integrated Pest Management approach which entails a more holistic approach to pest management and thereby reduces the risk of herbicide or pesticide resistance developing.

Response 6: Noted. Throughout the EIA and specialist report it is clearly stated that weed resistance to herbicides can occur in both non-GM and GM crops. However, the statement referred to has been rephrased to better express the argument. It now reads: *Some weeds have developed resistance to some herbicides, leading to a need to*
rotate both crops and herbicide groups in order to keep crops weed-free. Where broad-leafed weeds developed resistance, glyphosate tolerant GM maize may be beneficial as such weeds can still be eliminated on post-emergent maize.
Ultimately, it is thus equally important to have adequate pest management systems for both GM and non-GM crops.

Comment 7

5. Further to the previous point, a reduced use of pesticides is typically only reported in cultivation systems that are already using significant amounts of agro-chemicals (IAAASTD Report, Pg 45). In this light, it is questionable whether the cultivation of Bt and herbicide-resistant maize in Namibia on a farm where the amount of chemical use might not have been monitored continuously, would realistically lead to a reduction in pesticide use.

Response 7: It is logical that the largest reduction in pesticide use would be in systems making use of a lot of agro-chemicals (pesticides). Subsistence farmers for example, seldom use pesticides at all. The National Academies of Sciences, Engineering, and Medicine (2016) report highlights numerous studies, all indicating reduced use in insecticides on GM crops. In fact their conclusion is:
FINDING: In all cases examined, use of Bt crop varieties reduced application of synthetic insecticides in those fields. In some cases, the use of Bt crop varieties has also been associated with reduced use of insecticides in fields with non-Bt varieties of the crop and other crops.
Furthermore, it is unlikely, especially in Bt maize, that farmers will willingly use expensive insecticides if they are not needed.

Comment 8

6. Maize is a wind-pollinated plant, which is not mentioned in the EIA report. Therefore, the risk of cross-pollination is very real as pollen can be carried across substantial distances by wind. This would impact

those neighbours that want to grow non-GM crops, and could also impact their aspirations for organic certification which would directly impact their economic resilience/status. Contrary to what the EIA states, contamination of non-GM crops on neighbouring farms have impacted these farmers' ability to pursue organic certification (Paull, 2019).

Response 8: In the climate section of the report mention is made, under implications, that pollen may be carried by the wind in a westerly direction. Furthermore, having reviewed the Paull 2019 article, of which he is the only author, it is safe to say that from the tone of the article, and the fact that the author is an advocate of organic agriculture, there is great bias towards organic agriculture. This also stems from his lack of including positive aspects of GM crops, which there definitely are.
Nevertheless, the EIA report indicates a buffer (isolation zone) of 800 m between GM and non-GM fields, or as directed by the seed supplier. A counter argument can also be made by farmers intending to plant GM crops. Many farmers have indicated losses of millions of dollars as a result of fall and African armyworms. If they are not allowed to plan GM crops to counter these losses, due to a nearby organic farmer, their own economic resilience is also impacted.

Comment 9
7. More difficult growing conditions can be expected in the future due to climate change, increased temperatures and unpredictable weather patterns. Resilience lies within crop diversity, which is more apparent in local varieties than in GMO crops.

Response 9: The statement *"More difficult growing conditions can be expected in the future due to climate change, increased temperatures and unpredictable weather patterns."* directly supports the idea of planting GM crops as it provides a level of flexibility not offered by non-GM crops. For example, with dry-land non-GM crops, farmers have to time field preparation and weed control based on weather predictions. Should the rain arrive too late in the planting window, farmers will either risk investing a lot of money by planting without good rains, or not plant at all. With herbicide tolerant GM crops, planting can occur much later in the planting window, as no weed control is required prior to planting, since weed control can be performed post emergent.
New GM traits are continuously investigated, with a strong focus on drought tolerance. Such a trait can play a crucial role in food security in dry African countries which already suffers food shortages.
Local varieties will still be planted as refuges when GM-crops are planted.

Comment 10
8. There are currently only 24 countries in the world that allow growing of GM crops (Paull, 2019), with most countries having strict rules and regulations in place that require food stuffs to be clearly labelled to contain GMOs, which highlights consumers reluctance to consuming GMOs.

Response 10: 27 countries planted GM crops by 2023and the area under GM crop cultivation, globally, has increased from 170.1 million hectares to 206.3 million hectares. Directly linking the number of countries planting GM crops to consumer reluctance, i.e. consumer reluctance causes fewer countries to plant GM crops, is inaccurate. There are numerous other factors to consider, among them the lengthy and cumbersome processes to follow in order to get approval for environmental release of GM crops. It therefore does not necessarily represent the populations' sentiment. This is also supported by the fact that many more countries, including Namibia, import GM crops for food and feed.
The luxury to refuse to eat food containing GM products, may be an affordable option in for example certain European countries. The reality of most developing countries is however very different. The following screen capture is just a single example that highlights this difference:

OPINION COMMENTARY Follow

We May Starve, but at Least We'll Be GMO-Free

Unlike the Europeans we copied, Zimbabwe can't afford such an unscientific ideological luxury.

By Nyasha Mudukuti
March 10, 2016 6:51 pm ET

From: https://www.wsj.com/articles/we-may-starve-but-at-least-well-be-gmo-free-1457653915

Comment 11

9. The EIA shows that insect and weed resistance needs to be monitored. How does the farmer undertake this, and is it a realistic actionable measure that the farmer is able and willing to continue to do? Who will regulate this? What happens when resistance is recorded? NOA cautions that once resistance has developed it cannot be undone. The proponent will be responsible for ensuring that resistance does not occur through implementing alternative pesticides, but how is this controlled and enforced?

Response 11: As stated earlier, weed and insect resistance to pesticides can occur in cultivation of both GM and non-GM crops. The advantage of GM crops is that there at least is legislation and controls in place to prevent and detect this, whereas with non-GM crops there are none. Ultimately the Biosafety Council under the National Commission on Research Science and Technology, Ministry of Higher Education, Technology and Innovation is mandated to prescribe regulations pertaining to the cultivation of GM crops, if permits for this are issued.

Comment 12

10. Given the stringent management plans and regulations/control of various aspect pertaining to the cultivation of GM maize (e.g. planting of refugia, avoiding crosspollination, use of herbicides, etc.) for which not only the proponent is responsible for, but also the environmental regulators/health & safety inspectors, NOA raises the question as to whether the relevant authorities actually have the expertise and capacity to regulate and control such a highly contentious cultivation scheme. This was also highlighted in a report for South Africa by the African Centre for Biodiversity in relation to GMO cultivation in the country (ACBio, 2020). Given that many Namibian farmers already seem to be illegally cultivating GM maize, it is questionable if the government institutions responsible for regulating and overseeing the legal cultivation of GMO crops in the country have the capacity and resources to do, to ensure that there is no contamination and cross-pollination.

Response 12: The application process for the planting GMO's is substantial. Apart from this EIA process, any applicant should also apply to the Biosafety Council under the NCRST. The requirements for this application include emergency response plans for both transport and cultivation of GM crops. Approved and legal cultivation of GM crops will be better controlled, with checks and balances in place.

Comment 13

11. The EIA/proponent argues that the cultivation of GM maize will lead to more employment opportunities and an increase in technical expertise in the country. The same can, however, be argued for adopting or integrating a more sustainable agricultural system as offered through organic agricultural and agroecological practices – both creating employment opportunities and improving technical expertise in the country as these farming systems are based on a foundation of a very good understanding of ecology, the environment, markets, etc., in order to flourish, while at the same time safeguarding the environment and producing food that is clean and nutritious. A report by the United Nations found that organic agriculture promotes job creation, providing for more than 30% more jobs per hectare than non-organic farms (De Schutter, 2011).

Response 13: The EIA report does not claim that that the cultivation of GM maize will lead to more employment opportunities and more technical expertise than organic agricultural and agroecological practices. It simply highlights potential benefits of this project. Naturally a farm making use of for example manual labour to eliminate weeds, will have to employ more people than when insecticides are applied. It however comes at significant cost which may ultimately be carried over to the consumer. As stated earlier, the Namibian population, save for a small niche market, cannot afford the prices that accompanies organic food production. A visit to the weekly biomarket in Windhoek presents a clear indication of this when the number and demographic of patrons are considered. Furthermore, the higher production costs can also reduce the feasibility of crop production to such a level where farmers stop producing crops, especially if pests continually result in significant losses.

Comment 14

12. Research has shown that there is already resistance that has developed in fall army worm and stem borer to the Bt toxin (Huang et al., 2014; Kruger et al., 2011). Furthermore, a study conducted in 2020, showed that despite initial reductions in pesticide use, farmers use more pesticides today compared to before the introduction of Bt cotton (Kranthi & Stone, 2020). Once resistance has developed, even if only after a few years, farmers need to start using insecticides again – resistance cannot be undone.

Response 14: This concern has already been addressed in previous points above and the specific case as discussed by Kruger et al. (2011) was presented in the specialist report (page 22 0f 71).

Comment 15

13. *Bt toxin*

a. Bt from plants can remain in the soil for over 2 months (Strain & Lidy, 2015; Feng et al. 2015) – the EIA does not address the long-term impacts of this toxin in the soil, especially on soil life.

b. The potential impact on higher tropic levels have also not been addressed.

Response 15: The same study by Strain & Lidy (2015) states: "The Bt proteins are highly specific and only lethal upon ingestion, limiting the scope of toxicity to target insects. However, concern of exposure to non-target organisms and negative public perceptions regarding Bt crops has caused controversy surrounding their use." Literature overwhelmingly reiterates that the Bt proteins are very species specific. No evidence could be found of Bt proteins being toxic in higher trophic levels. The conclusion therefore remains that Bt maize are less harmful in ecosystems than traditional insecticide application.

Comment 16

14. Another worthwhile read is the 2022 publication "Pesticide Atlas" of a consortium of different organisations under the leadership of the Heinrich Böll Stiftung, with statistics proving that GMO cultivation and the associated use of pesticides has been a failure and carries grave consequences for human health and the global environment (https://eu.boell.org/sites/default/files/2023-04/pesticideatlas2022_ii_web_20230331.pdf). This publication not only lists facts and statistics, but also reflects on the European public's resistance to GMO and harmful chemicals. Europe is the most important market for Namibian agricultural exports.

Response 16: The focus of the Pesticide Atlas is pesticides in general and not GM crops. In science, ideas are never entirely proven or disproven. Instead, they are accepted or rejected based on supporting and opposing evidence, with conclusions subject to revision when new evidence or perspectives emerge. The evidence presented in the Pesticide Atlas to "[proof]that GMO cultivation and the associated use of pesticides has been a failure and carries grave consequences for human health and the global environment" is weak and highly correlative. Furthermore, this concern has been addressed in the points above.

Comment 17

15. Pg. 51: The risk of biodiversity loss should be categorized as 'highly probable'. The following paragraph is relevant here, taken from the ACBio 2020 report: *'GMOs are central to the industrialised version and vision of agriculture punted across the globe. Expanding monocrops and GMOs severely affect global ecological functions through deforestation (specifically the large grain producers of the world) and encroachment into natural habitats, polluting soils and waterways by highly toxic chemicals. There is an overall reduction in the nutrition of food through the creation of nutritionally depleted soils (Schjoerring et al., 2019). The environmental and social toll of industrial agriculture has been recognised widely, with many experts calling for an urgent shift towards biodiverse agroecological production systems (De Schutter, 2010; HLPE, 2019; IPES-Food, 2016).'* If Namibia now allows GMO cultivation, it follows the trap of many industrialised countries of depleting soils and reducing productivity of their agricultural system.

Response 17: Refer to section 4.4.5 of the specialist report. Scientific studies have shown that biodiversity can actually improve under GM crop cultivation. The problem as illustrated in the concern is not directly correlated with GM crop cultivation, but goes hand in hand with industrialised agriculture, of which GM crop cultivation may be part of, but so is non-GM crop cultivation. Maize, whether GM or non-GM, remains a monoculture. That is why crop rotation is important, and is practiced by most Namibian farmers. Furthermore, in the Namibian setting, as far as commercial farming where GM crops will mainly be cultivated is concerned, "slash-and-burn agriculture" is not practiced. Thus, the statement "*Expanding monocrops and GMOs severely affect global ecological functions through deforestation" is not valid.*

Comment 18

16. NOA would like to raise the concern that the 'road back' from GM maize cultivation is even more difficult than converting to organic/agroecological systems now. For example, once herbicide resistant weeds have developed through incorrect and overuse of herbicides, we cannot simply undo this development. Furthermore, once soil health is destroyed due to the use of herbicides and other chemicals, it will become increasingly difficult to cultivate this land.

Response 18: As stated earlier, the same risks exist with non-GM crops cultivated under traditional methods of pesticide use. To try and achieve an agricultural industry where no pesticides are used at all, is, even though ideal, unrealistic.

Comment 19

17. NOA would like to highlight that the wording in the document does not reflect an entirely objective voice and could easily influence the reader: when talking about the risks of GM maize cultivation, the writer

uses the words 'it **may** lead to XYZ', whereas when highlighting the potential benefits of GM maize cultivation, the writer uses the words 'it **will** lead to XYZ'.
Response 19: It is not the intention to be subjective. Examples include: • In the sentence "Increased **potential** yields in maize crops, through the cultivation of GM maize, will improve the economic resilience of the farming unit by offsetting losses that may periodically be incurred in other income streams" it is stated that it is potential increased yields, and it is true that increased yields generate more income. • Various potential and definite impacts **will** emanate from the operations, maintenance/construction and decommissioning phases. • The use of GMO maize **is expected** to increase the success rate and nett economic benefit of operations. **However,** due to the variability of GMO seed prices, input costs etc, the nett benefit **will vary** year on year. It is nonetheless **foreseen**, based on historic cultivation of GMO in other developing countries, that the overall revenue generation capacity **will** be increased, contributing to the sustainability of operations and related employment.