Statement by
H.E Neville Gertze, Namibian Ambassador to Germany
at the Third United Nations International
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"Disaster Management and Space Technology –
from Concepts to Application"
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Langer Eugen UN Campus, Hermann-Ehlers-Str.10, 53113 Bonn

Mr. Czárán, Head of UN-SPIDER Bonn Office

Dr. Jörg Szarzynski, Senior expert, UN-SPIDER

Members of the UN Secretariats,

Representatives of the German Government

Representatives of the Diplomatic Corps,

Representatives of the various Space & Technology Institutions,

Ladies and Gentlemen

I feel very honoured having been invited to this high-level 3rd UN-SPIDER workshop to take a closer look at a subject of great concern and importance not only to Namibia, but indeed crucial to the whole world. The severity of the challenges posed by climate change on our planet and the future wellbeing of its people simply cannot be underestimated. I am particularly pleased for the opportunity to contribute in the debate around this important subject and to share the views, experiences and input from my country. I therefore, wish to sincerely thank the organisers of this important workshop for your kind invitation to me to speak about the political dimension of the Pilot Project with

the **ambitious name** "International Disaster Management SensorWeb – African Sub-Sahara Flood/Disease SensorWeb Pilot Project".

In Namibia this project is better known as "**sensorweb Namibia**".

While Namibia is a semi-desert terrain with low annual rainfall, we experienced devastating floods due to torrential rains in the North-Central (Omusati, Oshana, Oshikoto, /Southern Angola) and the North-East (Okavango, Caprivi, border to Zambia) regions of the country over two consecutive years, i.e. in 2008 and 2009.

National disasters that over time struck Namibia have rather been droughts and wildfires; previous big floods occurred in the Okavango and Caprivi regions as far back as the 1960s and 1970s. The main cross-border rivers in this region are the Cunene, Chobe, Zambezi and Okavango, which have their headwaters far upstream in areas of higher rainfall.

When in 2008, Angola's southern Cunene province experienced non-stop rain over about three weeks, the Cuvelai Delta - grouping the regions of Oshana, Oshikoto, Ohangwena and Omusati as well as the regions of Okavango and Caprivi – turned into a disaster area. The rivers' water levels increased and caused floods that had not been seen in over 35 – 40 years.

We have to bear in mind that the six affected regions are home to 57% of the Namibian population (around 1.2 million), who are mostly rural and rely on subsistence farming for survival, e.g. growing mahangu, sorghum and keep small herds of cattle and goats. The average income in these regions is half of the national average. Rural dwellers generally live in fenced homesteads consisting of mud huts covered with straw roofs. Due to the semi-arid climate the people are compelled to live nearby water. Since the early 80s climate change seems to have caused drier conditions with the population moving even closer to the remaining water sources. In this region the homesteads, crop fields and pastures are all located along the flood plains and rivers. By 2008, the memories of floods had completely faded away.

For instance, the town of Oshakati is the centre of trade of the region of Oshana and is located directly at the mouth of the Cuvelai Delta. Oshakati was built in 1960 with no proper planning in place and most people were settled on a piece of land through the traditional way of land allocation, therefore no one could ascertain if the land was located in a potential disaster area.

While at the time of the 2008 floods, hydrological monitoring systems in the flooded areas were well established, breakdowns in recording and transmission occurred, and two major problems were

- the limitation of monitoring to a few points mainly at the outskirts of the flooded areas with no direct information on the situation there, and
- the virtual absence of information from upstream, because of limited monitoring and communication from these areas.

Due to the assistance rendered to the Namibian Government by the UN-system and the activation of the International Space and Major Disaster Charter on 14 March 2008 through UNOOSA, we were able to obtain satellite images using radar sensors covering an area 100km north from the Angolan-Namibian border to the northern shore of the Etosha Pan. The resulting floodmaps of the affected area produced hitherto unknown insight into the complex drainage system of the Cuvelai Delta and for the first time allowed for an accurate prediction of how floods were moving downstream.

Not only did the floodmapping provide reliable information for the flood management operations in terms of identifying flooded and safe areas for evacuation purposes or access roads and navigation channels. The information is also now available to the regions and the Government as a unique record of the extent of flooding for future town and land use planning.

Since we considered the 2008 floods as an exceptional case that would not occur again for a long time to come, we were still in the process of evaluating this data, when early this year (2009) the floods came back again. We were ill-prepared to deal with the masses of water pushing in and the ensuing consequences.

Whole villages were cut off from the outside world and the people had to be relocated into camps. Some 50.000 people were displaced; 102 people died, livestock was stranded and died of hunger;

The 2009 floods affected a population that was still trying to cope with the cumulative disasters' effects of floods and droughts. On top of that the people in the area were already very vulnerable as the Okavango and Ohangwena regions have the highest level of poverty incidences: more than one third of poor households in the country are accumulated there. If we add the regions of Omusati and Oshikoto, the area makes up of almost 60% of all poor households in the country.

According to the "**Post Disaster Needs Assessment (PDNA)**" report, prepared and published in August 2009 by the Government of Namibia with the support from the World Bank through the Global Facility for Disaster Reduction and Recovery (GFDRR), the United Nations, the European Commission, and the United States Agency for International Development, **total damages and losses** of the 2009 disaster amounted to **US$ 214 million**, i.e. value of destruction of assets is US$ 136.4 million, and the reduction in flows of the economy, arising from flooding, amounts to US$ 78 million. Most of the destroyed assets (72%) fall within the private sector, including private individuals and enterprises, while 28% of damage falls within the domain of the public sector. (Losses in economic flows: 94% of economic losses were sustained by the private sector, and only 6% in the public sector.)

Breaking down the effects of the floods by individual sectors of economic activity, damages are concentrated heavily in the following sectors:

- housing = N$ 385.5 million, or 35% of the total
- transport = N$ 223.2 million, or 20%
- trade = N$ 209.7 million, or 19%, and
- manufacturing = N$ 143.5 million, or 13%

This clearly shows the efforts and investments that have to be made by the Government and the private sector to overcome the negative impact of the disaster.

This time around, the Namibian Government requested the activation of the Space Charter for the Central Northern areas very early, and requested a technical advisory mission of UN-SPIDER to assess the existing use of space-based technology and information for disaster-management and emergency response. On February 27, 2009, UNOOSA triggered the International Charter, and the accepted call was extended in time for specific regions in Northern Namibia. A second call followed for the affected area bordering the Okavango and the Zambesi rivers in North / North-eastern Namibia.

Subsequently, a team of three experts from UN-SPIDER and the German Aerospace Centre's Crisis Information team (DLR/ZKI) travelled to Namibia (27 January – 02 February 2009) to specifically identify potential areas in which space-based technology and information could play a greater role, and to propose recommendations on how to improve the country's access to, and use of space-based technology and information.

The team provided technical advice and trained local experts in remote sensing techniques for flood mapping. In an ensuing workshop funded jointly by the Gesellschaft für Technische Zusammenarbeit (GTZ) and the Namibian Ministry of Agriculture, Water and Forestry (MAWF), Department of Water Affairs and Forestry, technical experts were trained on how to improve end-user adapted geospatial emergency response products and services.

In the course of trying to deal with the effects of the floods, the Namibian Government has reviewed the Hyogo Framework for Action 2005 - 2015 and identified key areas in which Namibia requires strengthening; e.g. in the field of Disaster Risk Management legislation, mainstreaming disaster risk management into our economic planning, strengthening our early warning system and improving disaster contingency plans and ensuring that these are linked to the required resources.

Hence, cabinet and parliament recently approved the Disaster Risk Reduction Policy (DRRP); funding for disaster risk management increased from a recurrent budget of N$ 5 million to N$ 260 million between 2005 and 2009.

Namibia's arid environment with recurrent drought and desertification makes the country extremely susceptible to the negative effects of climate change. A 1998 Climate Change Country Study identified that the climate change risk for Namibia includes a warming of up to 2 Celsius (C) over the coming 50 years, and that an overall more variable and extreme climate with regional reductions of rainfall in some and increased rain and floods in other areas can be expected.

The Government of the Republic of Namibia recognizes that this phenomenon is considered one of the most serious threats to the country's environment, human health and well-being, as well as its economic development, which is very dependent on agricultural production.

It is very clear that early warning systems are extremely important and that further support is needed in terms of cooperation between Namibia and its regional water commissions (Zambia & Angola) for improved water management, capacity building, training, institutional strengthening and participatory flood zoning as well as integrated flood management. The Global Facility for Disaster Reduction and Recovery (GFDRR) indicated its willingness to provide institutional and capacity building support in this area.

The UN offices (UN-SPIDER, UNOSAT) have already worked very closely with the Namibian hydrological office where a substantial amount of maps has

already been produced. But I am sure that data sharing and strengthening early warning systems can be taken even further for the benefit of our country, our people and our region.

It is important to improve emergency management in Namibia together with neighbouring countries. South-South cooperation is an important mechanism to exchange experiences. Capacity building and training in mainstreaming disaster risk reduction is important.

In this context, the Namibian Government is highly appreciative of the fact that UN-SPIDER together with the National Aeronautics and Space Administration (NASA) and the National Oceanic and Atmospheric Administration (NOAA) initiated the implementation of a **pilot project**, which continues in the aftermath of the floods and not only supports us during relief situations. The main project idea is to combine high resolution satellite imagery with hydrologic ground data and modelling in order to derive useful flood tools for the next flood season, specifically taking into consideration trans-boundary flood management systems for local decision makers.

I am sure that this afternoon, our delegates from the Hydrology Division in the Ministry of Agriculture, Water and Forestry, Mr. van Langenhove and Ms Mufeti, will go into the finer details of this pilot project and specifically deal with questions of improved and wider use of space technology in Namibia.

The second part of this pilot project is the exploration of water and vector-borne disease modelling.

Due to a vulnerable sanitation system, even prior to the floods, – an average of 67% of the population in the region uses non-improved facilities such as pit latrines, open latrines, shared toilets between households, and given that only 29% of the population is connected to public sewerage systems – waterborne diseases remain a public health problem. This problem exacerbated the risk of an outbreak of cholera when flood waters mixed with raw sewage.

Unfortunately, we have to move on the basis that in the future the effects of global climate change will most likely aggravate the health situation. Resulting vector borne diseases and epidemics such as malaria, meningitis, and cholera, might increase. This development has a potential of seriously disrupting not only our society, but whole regions and will eventually become a huge burden on our national health systems.

We are aware that in order to improve the management of future disasters with all its secondary impacts, a strong focus has to be on capacity building, i.e. to develop our own operational capacity and human resources.

In June (18-06-09), the Namibian Government attended a meeting with the Director of the World Meteorological Organization (WMO) – Climate and Water Department.

The meeting proposed that Namibia, in collaboration with the World Bank, arranges for a workshop in Namibia to discuss developing a flood management strategy. Since funding is limited, it is advisable to start with a pilot phase in which capacity is built. The workshop should bring together technical experts from Namibia's relevant Ministries, Directorates and Institutions. WMO showed great interest in participating in such a workshop and to provide technical advice as well as input in the proposed Terms of Reference to carry out a Water Basin Management Plan. WMO asked the National Planning Commission (NPC) to arrange this workshop in Namibia.

Bringing together the international community and expertise is of increasing importance, since the disaster management agencies in Southern Africa have to adapt to a rapidly growing number of natural disasters caused by floods and droughts as a result of climate change.

Against this background the Namibian Government wishes to express its deep appreciation to the UN system, but also the other international actors for all the assistance that has been rendered to us not only during and after the 2008/2009 disasters, but also with the long-term perspective of learning to cope with potential natural disasters in the future.

I thank you very much!