

Hartbeespoort Dam Remediation Programme
Media Release by the Department of Water Affairs and Forestry
26 September 2007

The Department of Water Affairs and Forestry (DWAF) revealed the details of the Hartbeespoort Dam Remediation Programme - called *Harties Metsi A Me* - that is currently being implemented as an emergency measure, at a meeting on Thursday, 20 September 2007 at the DWAF's Hartbeespoort Area Office.

Mr Petrus Venter, DWAF: Water Resource Manager, Hartbeespoort said the Hartbeespoort Dam is the most significant dam in the economic hub of the Crocodile West Marico Water Management Area. However, the Hartbeespoort Dam is in a hypertrophic state which means there are excessive nutrients in the dam. According to him seven (7) of the nine (9) hypertrophic dams in South Africa are in the Crocodile West Marico Water Management Area of which Hartbeespoort Dam is one. He said these high nutrients can be ascribed to a combination of factors. Firstly, high nutrient levels are caused by waste or effluent such as fertilizers, washing powders and poorly maintained sanitation systems that flow into the dam; and secondly, weather conditions play a major role. He highlighted the fact that the Hartbeespoort area went from a cold winter to a hot summer with no spring in between. He said that usually the algal growth is much less during the cold winter months but as soon as the temperature warms up a significant amount of algal is being produced. "Global warming is taking its toll on what we regard as normal practices, as algal growth was evident from time to time even during the winter this year" Mr Venter said. He holds the view that the demands of high population and modern civilization on the ecosystem should not be underestimated. He said that the dam is a symptom of our modern lifestyles and the way we consume our resources cannot be sustained. The media has a very important role to play in communicating to consumers that they need to assess their respective lifestyles if we want our resources to survive for the next 100 years. It is imperative that we become aware of the limitations of our resources and start using them with more care.

Mr Venter said the remediation programme is being implemented according to Integrated Water Resource Management principles and it has a special focus on developing tourism in the area and job creation. Rand Water has been appointed as implementing agent to assist DWAF with implementing this fast tracking plan.

Mr Venter gave a comparison scenario and said if only the symptoms of a very sick person are being treated the sickness will more than likely reoccur. What is necessary is for the person to assess his or her lifestyle and address the imbalances that may exist as well as the causes of the sickness. Mr Venter explained that the unhealthy biological conditions which prove the imbalance of the dam are for instance the fact that about 80% of the algae on the dam is toxic and that the fish life and vegetation are distorted. He explained that the Department has attempted major efforts over the past years in an attempt to deal with the difficult conditions of the water, the catchment issues, and standards of diffuse sources. The symptoms have however prevailed and the dam is still in a sick state. In 2003 the Department started moving in a specific direction namely to look at the impoundment itself. Questions were asked about how the dam could be stabilised and made healthy again and the planning led to the development of the remediation programme which is now being implemented.

Mr Venter said that the Department needs to find ways to deal with the incoming water, the sediments, the treatment of the water and the litter as it is a complex problem. The Crocodile River flows into the Hartbeespoort Dam from Gauteng and ways need to be found to reduce the phosphate loads that come into the water. What is however important is to ensure that implementing one aspect does not impact negatively on another as the problem is then moved and not solved. Another important aspect is that although some of the activities can run parallel at times some activities cannot start before the other has not been put into position. For instance the fish programme cannot commence if there is no food chain to feed them.

Departement van Waterwese en Bosbou • Múhasho wa zwa Madi na Vhusimamadaka • uMnyango wezaManzi namaHlathi • Ndzawulo ya ta Mati na Swihlahla
Lefapha la Ditaba tsa Metsi le Meru • Kgoro ya Merero ya Meetse le Dithokgwa • Lefapha la Merero ya Metsi le Dikgwa • LiTiko le Temanti namaHlatsi
ISebe lezaManzi naMahlathi • UmNyango weeNdaba zaManzi namaHlathi

Formatted: Left: 89.85 pt, Right: 89.85 pt, Top: 72

Deleted: ¶

Deleted: ¶
<sp>For immediate release¶
¶

Formatted: Font: 10

Formatted: Centered

Formatted: Font: 10

Formatted: Font: 10

Deleted: ¶
Hartbeespoort Dam Remediation Programme to address imbalances on the dam and focus on local job creation ¶
¶

Formatted: Line spacing: single

Formatted: Spanish (Colombia)

Mr Venter said that the Department can insist that Municipalities comply with the standards of water quality and to control sewage spills into the water, but that will not change the conditions of the dam if the phosphate levels do not decrease.

Mr Venter highlighted some research and experiments that he had been exposed to and said the programme will break new ground. Although there are similar problems elsewhere, nowhere has such an integrated approach been followed. Some of the activities that will be implemented will restore the balance in the dam, but will also be a major source of employment creation around the Hartbeespoort area, such as:

- A Resource Management Plan is being developed by local stakeholders, which will have to be implemented by an institution to be established. This Plan will determine the use of the dam.
- The integrated monitoring programme needs to be upgraded and monitoring of the dam coordinated in order to ensure the water quality is being addressed.
- The shoreline vegetation is being restored and floating wetlands need to be introduced. The core of this programme is that a fish survey revealed that there are three fish species that are predominant in the dam. These need to be managed by a profitable fishery that is to be established. These fish species are Carp, Barbel and the Canary Kurper. The problem is that the Carp eat the whole food chain namely the zooplankton and they eliminate the riparian vegetation, which is important for the small fish species to survive. Both the Carp and the Barbel stir up the sediment which in turn enhances algal growth. These fish species will therefore have to be eliminated in order to give others such as the Tilapia, which eat the algal, a chance to breed. The Tilapia, especially the Daphnia (also called the freshwater flea) are known to feed on algal. There are examples of impoundments that have higher phosphate levels than Hartbeespoort Dam that do not have algal because it has Daphnia, grass and shoreline vegetation.
- Four to Five booms are being planned for the Dam which will assist with the physical removal of the algal and the hyacinths. One boom has already been placed on the dam as a pilot and much was learnt from this.
- The composting which will be as a result of the harvesting of the algal, hyacinth and sediment will allow the breeding of earth worms which is the highest source of protein for fish and agriculture, such as chicken farms and will need intensive labour.
- There is a major demand on the water of the dam which is most of the time 60% full. This demand has however to be balanced and the recreational and aqua culture aspects for this Dam need to be developed further. Fly-fishing is another aspect that is being investigated, which is a major source of income, tourism and job creation for the area.
- Practical research is needed as the implementation of the programme unfolds. The Water Research Commission has come on board as a partner in this programme and many disciplines will be brought together through this research. There are already six activities for assessment with the Water Research Commission.
- The project is focusing on wetlands and how to improve wetlands. A pre-impoundment is being planned which will be at the same level as the dam and it will manage water retention and act as a flood control.

Mr Venter said that the challenges, upstream of the catchment, involve a major education and awareness drive namely the need for waste minimisation, recycling, optimal use of water, the monitoring of our water resources and updating of phosphate loading for diffuse sources upstream.

The implementation of the Hartbeespoort Dam Remediation Programme will require approximately three years to reach its targets.

ENDS

For more information and to arrange media interviews contact Rachele Seymore at Zitholele Consulting at tel 011 254 4804, or e-mail her at RacheleS@zitholele.co.za.

Departement van Waterwese en Bosbou • Múhasho wa zwa Madi na Vhusimamadaka • uMnyango wezaManzi namaHlathi • Ndzawulo ya ta Mati na Swihlahla Lefapha la Ditaba tsa Metsi le Meru • Kgoro ya Merero ya Meetse le Dithokgwa • Lefapha la Merero ya Metsi le Dikgwa • LiTiko le Temanti nemaHlatsi ISebe lezaManzi naMahlathi • UmNyango weeNdaba zaManzi namaHlathi

Formatted: Bullets and Numbering

Formatted: Line spacing: single, Don't adjust space between Latin and Asian text

Formatted: Font: 10

Deleted: The Department of Water Affairs and Forestry (DWAF) revealed the details of the Hartbeespoort Dam Remediation Programme - called *Harties Metsi A Me* - that is currently being implemented as an emergency measure, at a meeting on Thursday, 20 September 2007 at the DWAF's Hartbeespoort Area Office. ¶

¶
Mr Petrus Venter, DWAF: Water Resource Manager, Hartbeespoort said the Hartbeespoort Dam is the most significant dam in the economic hub of the Crocodile West Marico Water Management Area. However, the Hartbeespoort Dam is in a hypertrophic state which means there are excessive nutrients in the dam. According to him seven (7) of the nine (9) hypertrophic dams in South Africa are in the Crocodile West Marico Water Management Area of which Hartbeespoort Dam is one. He said these high nutrients can be ascribed to a combination of factors. Firstly, high nutrient levels are caused by waste or effluent such as fertilizers, washing powders and poorly maintained sanitation systems that flow into the dam; and secondly, weather conditions play a major role. He highlighted the fact that the Hartbeespoort area went from a cold winter to a hot summer with no spring in between. He said that usually the algal growth is much less during the cold winter months but as soon as the temperature w...

Formatted: Spanish (Colombia)

The Department of Water Affairs and Forestry (DWAF) revealed the details of the Hartbeespoort Dam Remediation Programme - called *Harties Metsi A Me* - that is currently being implemented as an emergency measure, at a meeting on Thursday, 20 September 2007 at the DWAF's Hartbeespoort Area Office.

Mr Petrus Venter, DWAF: Water Resource Manager, Hartbeespoort said the Hartbeespoort Dam is the most significant dam in the economic hub of the Crocodile West Marico Water Management Area. However, the Hartbeespoort Dam is in a hypertrophic state which means there are excessive nutrients in the dam. According to him seven (7) of the nine (9) hypertrophic dams in South Africa are in the Crocodile West Marico Water Management Area of which Hartbeespoort Dam is one. He said these high nutrients can be ascribed to a combination of factors. Firstly, high nutrient levels are caused by waste or effluent such as fertilizers, washing powders and poorly maintained sanitation systems that flow into the dam; and secondly, weather conditions play a major role. He highlighted the fact that the Hartbeespoort area went from a cold winter to a hot summer with no spring in between. He said that usually the algal growth is much less during the cold winter months but as soon as the temperature warms up a significant amount of algal is being produced. "Global warming is taking its toll on what we regard as normal practices, as algal growth was evident from time to time even during the winter this year" Mr Venter said. He holds the view that the demands of high population and modern civilization on the ecosystem should not be underestimated. He said that the dam is a symptom of our modern lifestyles and the way we consume our resources cannot be sustained. The media has a very important role to play in communicating to consumers that they need to assess their respective lifestyles if we want our resources to survive for the next 100 years. It is imperative that we become aware of the limitations of our resources and start using them with more care.

Mr Venter said the remediation programme is being implemented according to Integrated Water Resource Management principles and it has a special focus on developing tourism in the area and job creation. Rand Water has been appointed as implementing agent to assist DWAF with implementing this fast tracking plan.

Mr Venter gave a comparison scenario and said if only the symptoms of a very sick person are being treated the sickness will more than likely reoccur. What is necessary is for the person to assess his or her lifestyle and address the imbalances that may exist as well as the causes of the sickness. Mr Venter explained that the unhealthy biological conditions which prove the imbalance of the dam are for instance the fact that about 80% of the algae on the dam is toxic and that the fish life and vegetation are distorted. He explained that the Department has attempted major efforts over the past years in an attempt to deal with the difficult conditions of the water, the catchment issues, and standards of diffuse sources. The symptoms have however prevailed and the dam is still in a sick state. In 2003 the Department started moving in a specific direction namely to look at the impoundment itself. Questions were asked about how the dam could be stabilised and made healthy again and the planning led to the development of the remediation programme which is now being implemented.

Mr Venter said that the Department needs to find ways to deal with the incoming water, the sediments, the treatment of the water and the litter as it is a complex problem. The Crocodile River flows into the Hartbeespoort Dam from Gauteng and ways need to be found to reduce the phosphate loads that come into the water. What is however important is to ensure that implementing one aspect does not impact negatively on another as the problem is then moved and not solved. Another important aspect is that although some of the activities can run parallel at times some activities cannot start before the other has not been put into position. For instance the fish programme cannot commence if there is no food chain to feed them.

Mr Venter said that the Department can insist that Municipalities comply with the standards of water quality and to control sewage spills into the water, but that will not change the conditions of the dam if the phosphate levels do not decrease.

Mr Venter highlighted some research and experiments that he had been exposed to and said the programme will break new ground. Although there are similar problems elsewhere, nowhere has such an integrated approach been followed. Some of the activities that will be implemented will restore the balance in the dam, but will also be a major source of employment creation around the Hartbeespoort area, such as:

A Resource Management Plan is being developed by local stakeholders, which will have to be implemented by an institution to be established. This Plan will determine the use of the dam.

The integrated monitoring programme needs to be upgraded and monitoring of the dam coordinated in order to ensure the water quality is being addressed.

The shoreline vegetation is being restored and floating wetlands need to be introduced. The core of this programme is that a fish survey revealed that there are three fish species that are predominant in the dam. These need to be managed by a profitable fishery that is to be established. These fish species are Carp, Barbel and the Canary Kurper. The problem is that the Carp eat the whole food chain namely the zooplankton and they eliminate the riparian vegetation, which is important for the small fish species to survive. Both the Carp and the Barbel stir up the sediment which in turn enhances algal growth. These fish species will therefore have to be eliminated in order to give others such as the Tilapia, which eat the algal, a chance to breed. The Tilapia, especially the Daphnia (also called the freshwater flea) are known to feed on algal. There are examples of impoundments that have higher phosphate levels than Hartbeespoort Dam that do not have algal because it has Daphnia, grass and shoreline vegetation.

Four to Five booms are being planned for the Dam which will assist with the physical removal of the algal and the hyacinths. One boom has already been placed on the dam as a pilot and much was learnt from this.

The composting which will be as a result of the harvesting of the algal, hyacinth and sediment will allow the breeding of earth worms which is the highest source of protein for fish and agriculture, such as chicken farms and will need intensive labour.

There is a major demand on the water of the dam which is most of the time 60% full. This demand has however to be balanced and the recreational and aqua culture aspects for this Dam need to be developed further. Fly-fishing is another aspect that is being investigated, which is a major source of income, tourism and job creation for the area.

Practical research is needed as the implementation of the programme unfolds. The Water Research Commission has come on board as a partner in this programme and many disciplines will be brought together through this research. There are already six activities for assessment with the Water Research Commission.

The project is focusing on wetlands and how to improve wetlands. A pre-impoundment is being planned which will be at the same level as the dam and it will manage water retention and act as a flood control.

Mr Venter said that the challenges, upstream of the catchment, involve a major education and awareness drive namely the need for waste minimisation, recycling, optimal use of water, the monitoring of our water resources and updating of phosphate loading for diffuse sources upstream.

The implementation of the Hartbeespoort Dam Remediation Programme will require approximately three years to reach its targets.

ENDS

For more information and to arrange media interviews contact Rachelle Seymore at Zitholele Consulting at tel 011 254 4804, or e-mail her at RachelleS@zitholele.co.za.