

## INFORMATION SHEET

# UMANI SPRINGS/ KIBWEZI FOREST

The Umani Mtito Andei water supply project implemented by the Ministry of Water and Irrigation in Makueni County is contributing to the receding of ground water levels and in all probability will lead to the drying of Umani springs and the demise of the groundwater-dependent Kibwezi forest ecosystem.



### LOCATION AND STATUS

The Kibwezi forest reserve, located between Makindu and Mtito Andei, was gazetted in 1936 covering an area of 58.6km<sup>2</sup>. It contains the very important Umani Springs. This ecosystem is rich in biodiversity with a groundwater forest of over 25 meters height of splendid trees and several hundred other plant species including a number of vulnerable and endangered subspecies. Vision 2030 looks to the Tourism sector to be a main driver of Kenya's economy and therefore Kenya's development.

The Kibwezi forest reserve, as part of a network of protected areas known as the Tsavo Conservation area covering 64,000km<sup>2</sup>, is a considerable asset in this regard. Secondly this forest, which forms a tight ecological unit with the adjacent Chyulu Hills National

Park, plays a key role as a dry season dispersal area. Thirdly local people derive many benefits from the productive forest in the form of water, firewood and traditional medicine. After having supplied the forest and wetlands the groundwater flows on to resurge as the Kibwezi River.

So why is there a real concern about using Umani Springs to supply precious water?

### THE UMANI-MTITO ANDEI WATER SUPPLY PROJECT

- Umani Springs has been used to supply water to two local communities as well as continuing to sustain the mixed forest and wetland ecosystem and a small but valuable tourist enterprise. Despite the lack of an adequate water supply to the local populations in this semi-arid locality, drying up Umani Springs is not the solution. Unfortunately the latest abstraction project for the supply of the towns from Kibwezi to Mtito Andei will do just that.
- An Environmental and Social Impact Assessment (ESIA) done in 2009 and revised in 2011 for this latest project is flawed. The study uses water flow measurements for May and December 2010 of 630 litres per second and 954 litres per second respectively against an average flow, as established over a 30 year-period, of 164 litres per second.
- These two measurements were not subjected to any independent review and the question has to be asked



as to why these exceptionally high and therefore unreliable flow measurements were used to justify further abstraction.

## THE DILEMMA

### 1. Hydrology issues

- The Kibwezi forest ecosystem has recently been showing signs of receding ground water levels: massive tree mortality, and drying out of perennial wetlands raising the question whether the flows from Umani springs is enough to supply water for both the ecosystem and an ever increasing human population along the Mombasa highway. This evidence coupled with the absurdly high flow rates was not challenged in the ESIA.
- Legally at least 30% of the base flow has to remain in the ecosystem to maintain its functions. This reserve flow amounts to 49 litres per second. In addition, any off-take should be reduced during drought periods. Currently none of the off-takes are metered or have any mechanism for limitation of flows. Under drought conditions therefore current abstraction invariably eats into the reserve flow.
- The most recent flow measurement (May 2012) indicated a flow of 56 litres per second (almost equivalent to the reserve flow) while abstraction continued at some 115 litres per second. This is the situation before the additional abstraction by the Umani – Mtito Andei water supply project. To make matters worse, the ESIA indicates that



a reserve flow of 46 liters per second should be maintained but at the same time proposes an additional off-take of 76 liters per second bringing the total off-take to 178 litres per second, higher than the average flow of 164 litres per second and almost twice the sustainable flow.

### 2. Legal issues

- Despite the ESIA being undertaken, the National Environment Management Authority (NEMA) has not issued an environment licence as required under Environment Management and Coordination Act (EMCA), 1999 as the proponent has failed to provide the newspaper advertisement as a precursor to the required public consultation. Yet the construction went ahead and continues. It is also not clear that procedures required under the Forests Act and Water Act have been correctly followed.

## CONCLUSION

Despite clear damage to the ecosystem by water over-abstraction, the use of erroneous data and in breach of various legal stipulations, the project is still going ahead. It will be impossible for the ground water forest and wetland ecosystems to survive if water abstraction from the springs is not brought down. The benefits local communities derive from both the forest and the Kibwezi River are severely threatened. It will also cause the existing supply to two local communities to dry up, with serious social consequences.

## RECOMMENDATIONS

- Implementation of the Mtito Andei water project be suspended immediately until the independent peer review evaluation is complete and recommendations incorporated;
- Redesign of the project based on the results of the independent peer review be implemented;
- Installation of proper monitoring equipment to ensure sustainable management of water off take including fair distribution and accounting.