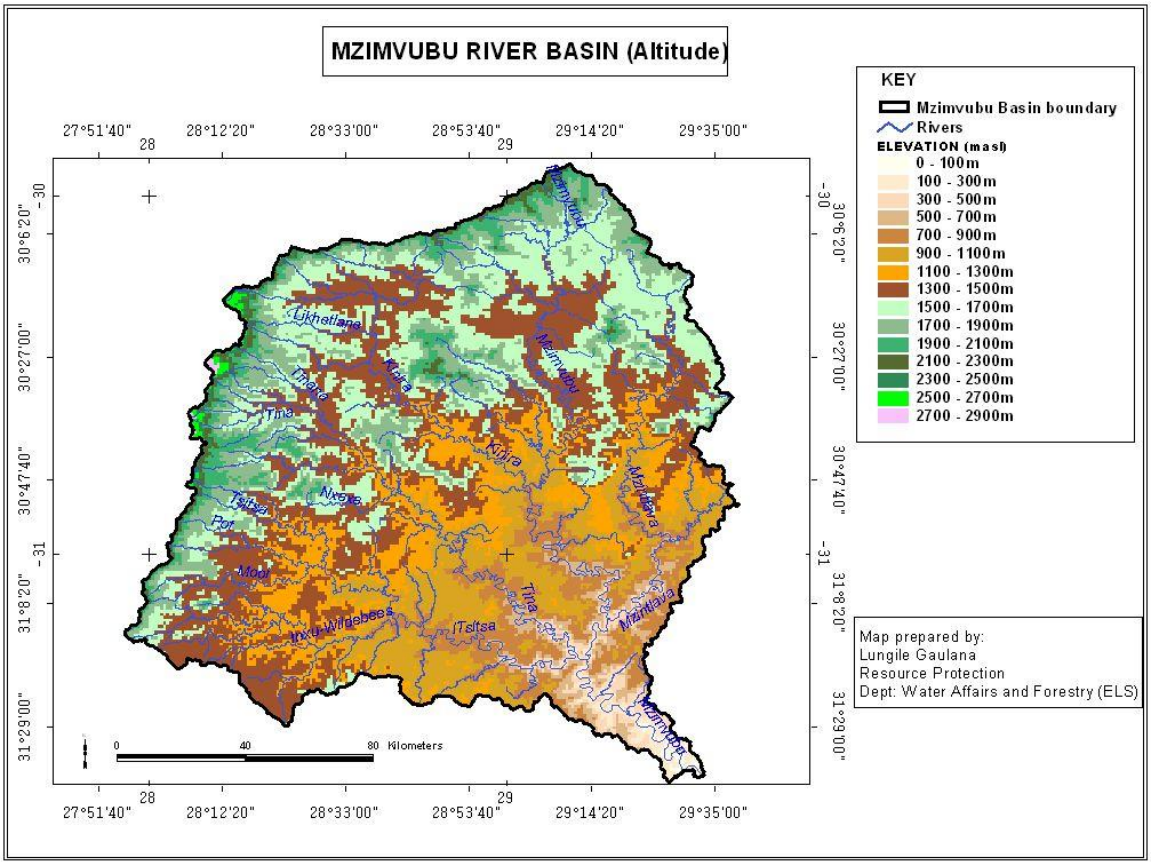
SNAPSHOT OF UMZIMVUBU RIVER BASIN STATUS – NOV 2014

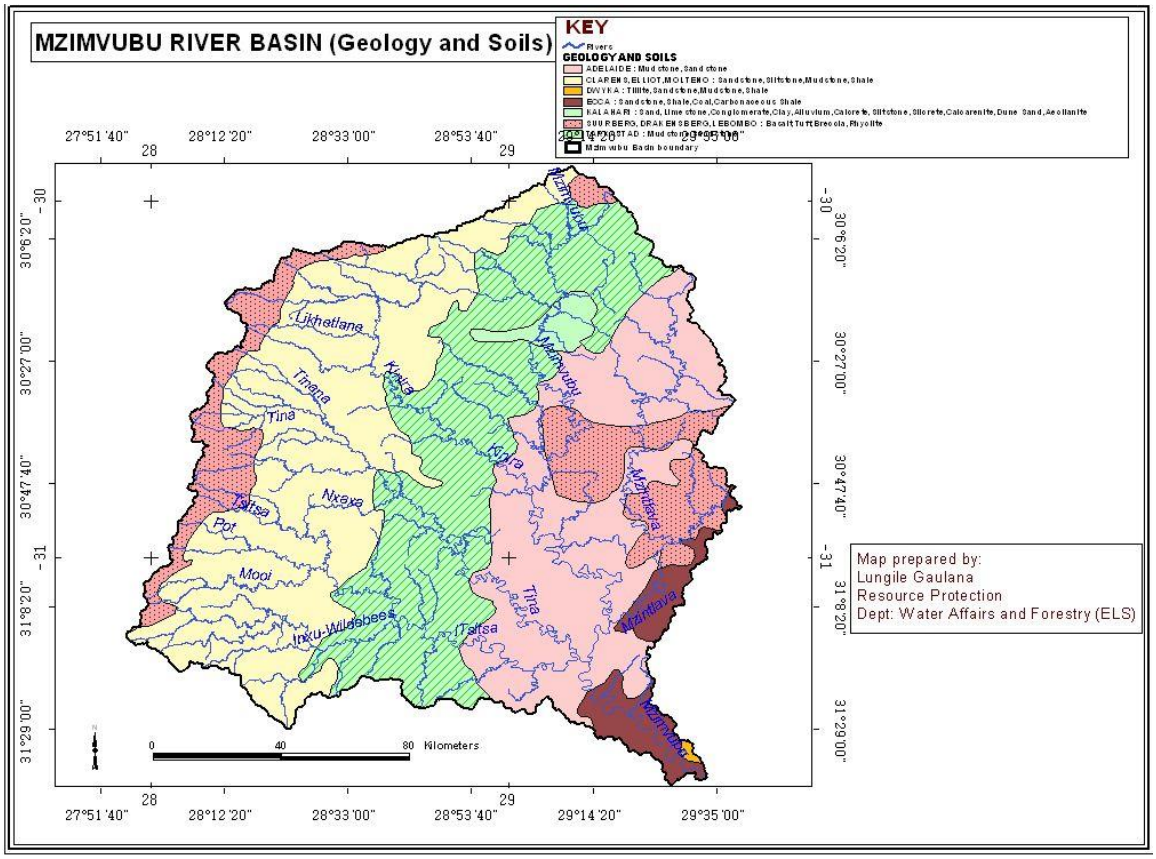
Draft compiled by ERS from various unpublished reports and sources kindly supplied by DWA and WRC.

uMzimvubu River starts from an altitude of about 2 700 meters above sea level (masl) on the Drakensberg escarpment on the KZN / Lesotho border, travelling over 408km to the Indian Ocean at Port St Johns. It drains a catchment area of approximately 19 853 sq. km (www.ewisa.co.za).

The main stem has four major tributaries; the Tsitsa, Tina, Kinira and the Mzintlava rivers, all of which their headwaters originate from the Drakensberg Mountains. After descending through the escarpment, the Mzimvubu River and its tributaries flow through deep and steep river valleys incised into the coastal belt, before discharging into the Indian Ocean. The figure below shows the rough terrain of the catchment and its longitudinal profile from source to mouth.



Showing altitude and topography of the Mzimvubu River drainage basin (Adapted from GIS coverage, DWAF: RQS). From DWA, Umzimvubu River Spring survey, Sept 2008



Geology and soils of the Mzimvubu River drainage basin (Adapted from GIS coverage, DWAF: RQS), from DWA, Umzimvubu River Spring survey, Sept 2008.

From WRC – Bonani Madikizela, March 2012 presentation to UCPP pre-meeting on water security:

- It receives above annual SA rainfall, by up to 1138mm
- High sediment loads due to sparse vegetation cover, highly erodible soil, high rainfall, ill managed land-use activities
- Upper reaches covered by virtually understudied wetlands (e.g. role in sustaining the Umzimvubu waters)
- Rich in endimism, nature reserves, heritage and archaeological sites
- With the exception of TSS, all physico-chemical variables were acceptable
- Though rivers were crystal clear in winter, TSS in summer could measure up to 8.5g/litre, a serious threat to any dam capacity and lifespan
- The impact of TSS on biodiversity, siltation risk, needs further investigation
- Similarly, the drivers of soil erosion and its mitigation/management need urgent research
- A trans-diciplinary catchment study approach involving many stakeholders is critical

Needed:

- The water baseline water quality of Umzimvubu R is good but needs to be updated (SASS4 – SASS5)
- Physico-chemical water quality, particularly nutrients and pesticides need to be affirmed, as these can easily lead to dam eutrophication and toxicity
- Role of wetlands in Umzimvubu upper reaches, including ground water recharge/discharge relationship
- Involvement of communities in Umzimvubu catchment management

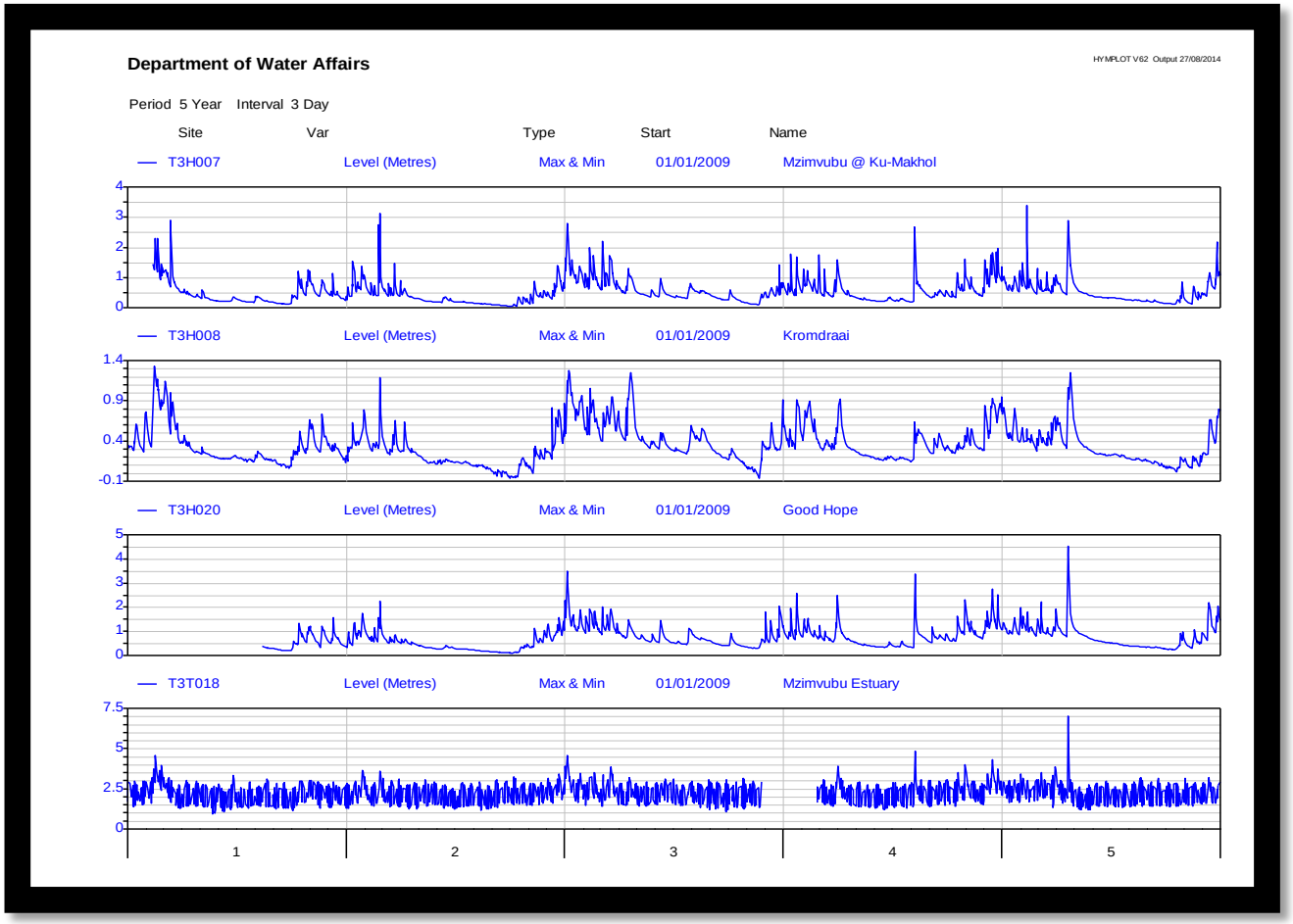
- River gauging weirs and rainfall data for proper planning and threat mitigation, such as climate change
- Impacts on Umzimvubu Estuary prior to impoundment

WRC funded research at March 2012

- Impact of sediment on selected macroinvertebrates-Rhodes Univ
- Development of procedures to test sediment toxicity- Completed by Golder & Ass
- Sediment water quality guidelines –Rhodes Univ/DWA/WRC
- Impact of the "***Green drop"*** on our aquatic ecosystems- by Golder & Ass
- Flow manipulation impact on vectors- completed by INR
- Wetlands vegetation database expansion- OFS Univ
- Design of wetlands monitoring programme – Starting-2013
- Development of buffer zone – INR
- Estuarine Biodiversity response to upstream flow manipulation-CSIR

Gauging weir data from DWA, Jean Volschenk

T3H007 - Mzimvubu River @ Ku-Makhola Lat:-30.86013889 Long:29.07125 Elev:0
T3H008 - Mzimvubu River @ Kromdraai Lat:-30.57066667 Long:29.15016667 Elev:0
T3H020 - Mzimvubu River at Ntontela Lat:-31.3955 Long:29.26508333 Elev:0
T3T018 - Mzimvubu River at Cameron Dale Lat:-31.59411111 Long:29.52788889 Elev:0



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