Ulawulo loKonga aManzi

Abophando be-IWRP babazisile aboMgaqo-Nkqubo woLawulo loKonga aManzi (WDM) kunye naboCwangciso-qhinga lokuMiselwa koLawulo lwaManzi (WDM) lweSixeko saseKapa abaphunyezwa ngokusesikweni ngoSeptemba no-Okthobha 2001 ngokulandelelanayo.

UMgaqo-nkqubo wale WDM ubhekiselele kummiselo ombaxa ololu hlobo: amanzi asisicwangciso-qhinga, axabisekile kwakhona ngumthombo/yimveliso engonelanga; kwaye inkcitho yawo ayinakunyamezelwa konke kwakhona amanzi asetyenzisiweyo kufuneka kwenziwe umlinganiselo wawo, kuzanywe imbuyekezo ngoko. Ummiselo wokwenziwa komlinganiselo wawo ngumbandela obaluleke kakhulu ukuze kuqinisekiswe ukuba amanzi alawulwa ngendlela eyiyo njengoko ibubuchule bendalo, iyinto exabisekileyo neyimveliso enqabileyo/engonelanga. Iinjongo eziphambili ezilungiselelwe ixesha elizayo eziqulunqwe kulo mgaqo-nkqubo ziquka ubulungisa bokusetyenziswa kwamanzi, umiselo oluqilima, ukufikeleleka nokukhuthaza ukusetyenziswa kwamanzi ngendlela efanelekileyo-kugunyaziswe ngokusemthethweni; kwakhona kusetyenziswe ezinye iindlela ukukhawulelana nenkcitho yamanzi kwaye kuqinisekwe ukuba umasipala uwasebenzisa ngobulumko amanzi. IsiCwangciso-qhinga solawulo lokusetyenziswa kwamanzi (i-WDM), iinjongo zaso zokunciphisa ukunqongophala kwamanzi nge-20% zibhekiselele ukususela ngoku, kuthi kufika u-2010, ibe iphele nya ingxaki yamanzi.

I-Projekthi yaManzi ase-Berg (ebisakuba yeyeDama i-Skuifraam)

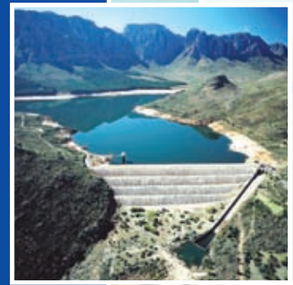
KwiProjekthi yaManzi i-Berg (BWP) kuye kwenziwa uphando olwahlukeneyo oko kwango-1995 liSebe leMicimbi yezaManzi namaHlathi (DWAF), kuquka nolwamkelekileyo kunye noVavanyo lweMpembelelo lokuSingqongileyo. NgoMeyi 1999, iSebe likaZwelonke leMicimbi yokuSingqongileyo noKhenketho liye lagunyazisa ukuba kudalwe iProjekthi ngokungqinelana noMthetho woLondolozo lokuSingqongileyo.

Ngo-Epreli ka-2002 iKhabhinethi kaZwelonke iye yaphumeza ukumiselwa kweProjekthi yaManzi ase-Berg, kwaye noMphathiswa we-DWAF uye wakhupha umyalelo kwabaseMagunyeni leTonela lase-Trans Caledon (TCTA) ukuba bamisele kwakhona bancedise ngezimali kule projekthi. Iprojekthi le iya kuncediswa kwakhona kukuthengiswa kwamanzi siSixeko saseKapa.

KwiProjekthi yaManzi i-BWP eyakunxulunyaniswa neNkqubo yaManzi yaseNtshona Kapa, kungafunyanwa amanzi angama-81 000 Ml ngonyaka. Iindleko zale projekthi (i-BWP) iqikelelwa kwibhiliyoni eyi-R1,5.

IQela lelityе eligcina nelikhupha amanzi (i-TMG Aquifer)

ISixeko saseKapa Sityumbe uMbimbi/ indibaniselwano (i-TMG Aquifer Alliance) ngo-Epreli 2002 ukuba liqhubekeke nophando olwaau kelekileyo neprojekthi elilinge. Kulindeleke ukuba iprojekthi le iqhubekeke isithuba esiyiminyaka emihlanu ukuya kwiminyaka esixhenxe. Kwakhona kulindeleke ukuba uphando olu nale projekthi ililinge ibangele ukuba iSixeko sithabathe izigqibo eziphaphileyo malunga neenjongo ezuliqilima zexesha elizayo, inzuzo kwezoqoqosho kunye neempembelelo zokusingqongileyo kumsebenzi wovimba wamanzi i-TMG Aquifer.



Ikamva elihle loPhuhliso leZkimu zeMithombo yaManzi neZkimu zoLawulo lokuSetyenziswa kwaManzi

Eminye yemibandela ephambili ejongene neSixeko saseKapa ukususela kwesi sithuba ukuya kwixesha elizayo, kukunqongophala kwemithombo yamanzi, kuloko kubalulekile ukuba ukusetyenziswa kwamanzi kulawulwa ngokungqinela nophuhliso lwezikimu ezitsha ezixandileyo. Zonke izkimu ezikuluhlu lweNkqubo yophando yaseNtshona Kapa (i-WCSA) kunye nezinye izkimu ezidalwe liSebe lezeMicimbi yaManzi namaHlathi (I-DWAF) nezikimu zokulondolozwa kokumpontshwa kwamanzi (i-CCT), ekungoku nje ezikwinkqubo zokuba zihlolwe kwakhona. Izkimu zemijelo yokusetyenziswa kwakhona kwamanzi (ukulungiswa kwamanzi aselesetyenzisiwe) nezo zikwiphulo lokusetyenziswa kwamanzi ngendlela eyiyo, zokuqwalaselwa kwakhona. Ezi zikimu ke kufuneka zidluliselwe okanye zibekwiphulo lokuhlolwa ngokwempembelelo yokusingqongileyo kwakhona ezinye zazo zinokufunyaniswa zingenakuqhubeleka phambili ngenxa yemeko emaxongo yezoqoqosho.

Izkimu zoLawulo lokuSetyenziswa kwaManzi ekungoku nje ezimiselweyo ziyahambelana, ziyamelana noxinzelelo okanye imeko yongxamiseko, zinemfundiso kwakhona zikwayimijelo yamanzi asele esetyenziswe -anokusetyenziswa kwakhona. Ekubeni iSixeko saseKapa siphumelele ekumiseleni iinjongo yaso yoLawulo lokuSetyenziswa kwaManzi (i-WDM), emva koko kulindeleke okanye kucingeleka ukuba kuya kuba yimfuneko yomthombo omnye kuphela- emva kokuba kumiselwe iProjekthi yaManzi ase-Berg, ngo-2012/2013 ozayo. Kubalulekile kakhulu ukuba ucwangciso luqale ngexesha njengoko kuthabatha ixesha elide lokuba kuqhubekeke okanye kumiselwe iskimu somthombo wamanzi (yiminyaka e-6 ukuya kwi-7). Seso sizathu ke kungoku nje iSebe lezeMicimbi yaManzi naMahlathi neSixeko saseKapa benika Ingxelo kwiNkqubo yezoHlalutyo yaseNtshona Kapa. Impembelelo efana nokutshintsha kwemozulu jikelele neziphumo zayo zokutshintsha-tshintsha kwamaqondo obushushu, kwakhona isenokuqhwalelisa ikamva lezi zkimu.

Ukulungiswa kwamanzi anetyuwa

Inkqubo yokulungiswa kwamanzi anetyuwa yenye yomthombo wamanzi elindelekileyo yeSixeko saseKapa eyaphandwa ngokwezinga elingekavunywa njengenxal 'enye "YoPhando ngokuHlangeneyo loPhuhliso lwe-Mithombo yaManzi".

Kungokunje le nkqubo yokulungiswa kwamanzi anetyuwa yeyona inendleko ngaphezulu kweskimu somthombo wamanzi esiqhelekileyo esiqhutywa ngezandla zabantu. Kodwa kuthe ngokunyuka kwezinga lobuchwepheshe, ziye zehla iindleko zale nkqubo (ukususwa kwetyuwa emanzini). Oku kusenokubangela ukuba le nkqubo imiselwe kuqala kunezkimu ziqhelekileyo zemithombo yamanzi sele zikhankanyiwe.

Kuloko iSixeko saseKapa sithabathe isigqibo sokumisela iprojekthi elilinge ukuze ikwazi ukuqonda esona sakhono siphambili esinekamva elihle leSixeko.

Iincwadi ezisetyenzisiweyo:

IsiCwangciso soPhuhliso seNkonzo zaManzi, Juni 2002
UPhando ngokuHlangeneyo loCwangciso lweMithombo yaManzi, 2001
UPhando lokuFumaneka kwaManzi, 2001
UMgaqo-Nkqubo woLawulo lokuSetyenziswa

ISHICILELWE NGOMATSHI 2006

CITY OF CAPE TOWN | ISIXEKO SASEKAPA | STAD KAAPSTAD

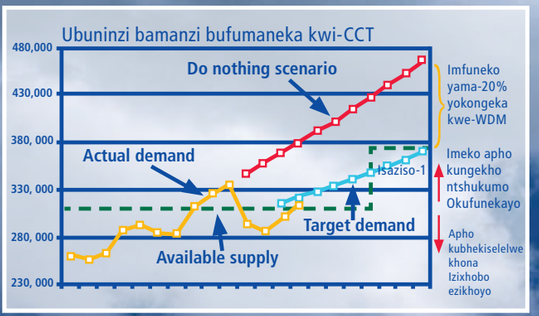
ESI SIXEKO SISEBENZELA WENA

Ukonga amanzi yeyona ndlela iyiyo yobomi

Avelaphi amanzi ethu?

YONGA
Yonga amanzi ethu.
Yonga isixeko sethu.

X01_Where.indd 1 3/14/06 1:48:03 PM



Imbali emfutshane

Amanzi ngumthombo onqongopheleyo eNtshona Kapa, kwaye ngokwembali kuye kwazanywa iindlela zezithintelo zokusetyenziswa kwamanzi, kwalandeliswa ngokuphuhliswa kwezikimu ezitsha ezandisiweyo zamanzi. Kude kube sembindini kuka-1990, bekusetyenziswa icebo apho bekujongwa umthombo apho afunyanwa khona amanzi kwakhona nokukhuliswa kwezikimu ezitsha zamanzi ukukhawulelana nokunyuka kwesidingo samanzi.

Intsusa yamanzi ebesetyenziswa ngabantu bomthonyama balapha eNtshaona Kapa kunye nabatyeleli kweli, ebephuma kwimisinga nemithombo eyahlukeneyo efumaneka phantsi kweNtaba yeTafile. Imbalela yokuqala eyabhalwa phantsi yafumaneka ekuqaleni kwexesha lasehlotyeni lomnyaka ka-1663 apho kwathi kwangqongophala amanzi okunceda ukuhamba kweenqanawa. Luye lwanda uluntu ngo-1806 ukuya kuma-17 000 kwakhona kwakhula nezenzo zenkcitho nongcoliseko olubangelo ukungonwabi nezigulo. Kuye kwadalwa amanyathelo okulawula inkcitho yamanzi. Oku kuye kwaquka ukutshintshwa kwemibhobho yamaplanga evuzayo kwafakelwa imibhobho yesinyithi(yentsimbi) esuka e-England (eNgilane) kwakhona kwatshintshwa amachibi okanye imithombo yamanzi anggonge iSixeko kwafakelwa iimpompo zamanzi eziphathekayo zamandulo (ii-swaaipompe). Iimpompo ezilolu hlobo zisekhona e-Prins street, e-Gardens. Kuye kwakhula ngokukhawuleza uphuhliso lwedolophu nobubanzi beSixeko emva kwenkulungwane, kwaye kwabangela ubunzima bokufumaneka kwamanzi. Oku kuye kwabangela ukuba kwakhiwe amaDama i-Woodhead ne-Hely Hutchinson elundini yentaba ye-Cape Peninsula kwinkulungwana yama-20. Nakubeni kuye kwakhiwa lamadama mabini, kuye kwanyanzeliswa kwakhona imiqathango yokusetyenziswa kwamanzi ngexesha lembalela ka-1904. Kuye kwathabatha ixesha ukugqitywa kwedama elikumlambo i-Steenbras, ngo-1921, kwagqitywa

itonela eliphumela kwiintaba zaMa-Hottentots Hollands, umtyangambo wombhobho wamanzi obude ongama-64km ukuya kwichibi i-Molteno, ukukhawulelana nale ngxaki. Emva kweMfazwe yeSibini yeHlabathi, siye senyuka isidingo samanzi, kwandiswa iDama i-Steenbras ngo-1928 kwakhona kongezwa ukumiselwa kwemibhobho yamanzi edibanisa iKapa. Kwangeli xesha, isidingo samanzi siye senyuka kwakhona (sangaphaya kwamandla amiselweyo), kwakhona kwamiselwa umbhobho wesithathu osusela e-Steenbras kunye nomzimveliso wokucoca amanzi, kwaggitywa ngo-1949 (ibe kokokuqala ukuba kususwe umbala omdaka emanzini). Kuye kwalandeliswa ngokwandiswa kwakhona kweDama i-Steenbras ngo-1954.

ISixeko siye saqalisa iSkimu esiBanzi saManzi e-Wemmershoek ngo-1953. Oku kuye kwaquka ukwakhiwa kedama elikhulu kumlambo i-Wemmers, umsebenzi wokucocwa kwamanzi nombhobho wamanzi obude obungama-80 kilometre ukuya kwichibi elise-Tygerberg. Kwakhona elinye ithuba elimiselweyo lwezithintelo zokusetyenziswa kwamanzi liye lakhokelela ekwakhiweni kweDama i-Wemmershoek, eligqitywe ngo-1957.

Ukwanda kwemithombo yeSixeko yamanzi ubengama-66 400 megalitres ngesabelo somnyaka, esusela kwiSkimu sasebuRhulumenteni saManzi i-Voîlvlei. Ngo-1971, kuye kwagqitywa umsebenzi weBhunga oquka imisebenzi eqhubekeka ngaphakathi, imizi-mveliso yococeko lwamanzi, izikhululo zokuthiwa kwamanzi kunye nombhobho ongama-80 kilometres ubude- ububanzi obuyi-1 500 mm.

Okulandelayo ibesiSkimu esiBanzi saManzi i-Riviersonderend, esiye saqhutywa ngokubambisene neSebe leMicimbi lezaManzi (i-DWAF) kunye neBhunga leSixeko saseKapa. Umsebenzi wokwakhiwa kweDama i-Theewaterskloof elikwi-Riviersonderend kufutshane ne-Villiersdorp netonela elingama-35 kilometers, uqhutywe li-DWAF. ISixeko sona siye sokha uMzi-mveliso wokuCocwa kwaManzi wase-Blackheath(i-WTP) (400 Ml/d) kunye nemibhobho enxulumene noko, ekwanika inkxaso kumachibi afanelekileyo eNqila yaseKapa. Kwakhona kuye kongezwa umbhobho oqhagamshelana neDama i-Theewaterskloof ukuya e-Wemmershoek- WTP ohamba ngomngxunya obunzulu obuyi-1 100 mm. Izicwangciso kunye nokuqhubekeka kokuhlolwa kwale nkqubo kuye kwabonakalisa imfuneko yokandiswa kwale nkqubo ngexesha lasehlotyeni lika-1993, kwamiselwa iSkimu saManzi i-Riviersonderend/Palmiet River, esiquka i-WTP ese-Faure (500 Ml/d) esingumthamo oyi-640 Ml kunye nombhobho wamanzi ongama-22.6 km. ISkimu sokuqgibela esikhulu esathi sakhiwa yaba yi-Palmiet, eqhagamshelana nomlambo i-Palmiet ukuya kwi-Faure WTP ophumela kwiiSkimu ezibini zokuGcina ukuMpontshwa kwaManzi i-Eskom's Palmiet Pumped Storage Scheme ne-CCT's Steenbras Pumped Storage Scheme.

Ngo-2002 uMphathiswa weSebe lezeMicimbi yaManzi kunye namaHlathi uye wathabatha isigqibo sokwaneliseka yinkqubela phambili yeSixeko ngokuphathelene kukumiselwa kolawulo lwengxaki yokunqongophala kwamanzi. UMphathiswa kwakhona uye waggiba ekubeni aqhubekeke nokumisela kweProjekthi yaManzi yase-Berg, phantsi komqathango wokuba iSixeko siya kuqhubekeka nokumisela uLawulo lokuNqongahala kwaManzi njengenkqubo enxusene neprojekthi le.

Imithombo ephambili yaManzi kunye neSixa sokuSetyenziswa kwawo(imfuneko yamanzi)

Amanzi alungele ukuselwa afunyanwa ngabantu abamalunga nezigidi ezisi-3.2 abakwalapha kuMmandla weNqila yaseKapa kwaye ubuninzi bawo afumaneka kummandla we-Drakenstein (ePaarl nase-Wellington) nakuMasipala wase-Stellenbosch. Amadama ekufumaneka amanzi liDama i-Table Mountain (3 500), i-Dama elukuMntla we-Steenbras neliseMazantsi (40 000), iDama i-Wemmershoek (54 000), i-Voîlvlei (70 400) neDama i-Theewaterskloof (118 000). Amanzi kwakhona angephi akwafumaneka kwiMithombo i-Albion (1 500) ne-Atlantis Aquifer (5 000). La manani akwizibiyeli abonakalisa isixa sokusetyenziswa kwamanzi esibhalisiweyo siSixeko kuyo yonke imithombo yamanzi. Umthamo womzi-mveliso wokucocwa kwamanzi umalunga ne-1500 Ml/d nomthamo wechibi/idamana elungivimba wamanzi umalunga nama-2 500 Ml. Amanzi emijelo/imilanjana acociweyo aphinde asetyenziswe kwimizi-mveliso nasekunkcenkcesheleni. Okokwangoku malunga ne-6% ukuya kwi-12% lamanzi emilanjana acociweyo aphinde alungiselelwe ukusetyenziswa kwimizi-mveliso, kumabala ezemidlalo, ezikolweni nakumabala egalufa. Umlinganiselo okhoyo wemfuneko yamanzi womnyaka-mali ka-2003/2004 ubungama-865 Ml/d.

UkuHlalutywa kweNkqubo yoPhando yaseNtshona Kapa

Ngo 1989, iSebe leMicimbi lezaManzi naMahlathi kunye neBhunga loLawulo leSixeko saseKapa laqalisa uphando ukuba kuqinisekiswe ngemithombo yamanzi engaba ikhona, kuquka nokususwa kwetyuwa kwimithombo ejikeleze iNtshona Kapa kwaye kuthelekiswe iindleko ngokweyunithi. Olu phando luye lwabizwa ngokuba yi-Western Cape Systems Analysis - Uhlalutyo laseNtshona Kapa leMithombo yaManzi (WCSA).

Ngo 1996 izigqibo okanye iziphakamiso eziye zaqatshelwa yi-WCSA ziquke inkqubo yentatho-nkxaxheba yoluntu. Oku kuye kwabangela ukuba kubekho izikimu ezilishumi elinambini ukuba ziphandwe nzulu.

Ibezezi ke: iSkimu soLawulo sokuSetyenziswa kwaManzi, Ukususwa kwezityalo ezingalunganga, iSkimu esikwisPhambuka seziThuthi i-Michells Pass, esikwisiPhambuka soMlambo i-Eester, iSkimu sase-Vollvlei/Lorelei 1, iSkimu esisesiPhambukeni soMlambo i-Lourens, ISkimu seLityeliGcina neLikhupha aManzi lase-Cape Flats, ISkimu seDama i-Skuifraam, eSofakelelo lwase-Skuifraam, ISkimu sokuSetyenziswa kwakhona kwaManzi oGutyulo, iSkimu sokuThungelana/ukuTshintshelana kweMibhobho yoGutyulo neSkimu sokuSuswa kweTyuwa eManzini.

Uphando olungekamkeleki okanye oluselamkelekile luye laqhutywa kuzo zonke ezi zkimu zikhankanyiwe ngentla apha liSebe leMicimbi lezaManzi namaHlathi okanye iSixeko saseKapa. ISebe lezeMicimbi lezaManzi namaHlathi liye laggiba ekubeni liqhubekeke nophuhliso lweProjekthi yaManzi ase-Berg (iDama i-Skuifraam neSkimu eSifakelelweyo e-Skuifraam). Ekuqaleni oku ibiliDama lomlambo i-Berg elongezeleleke kwiNkqubo yokugcinwa kwaManzi aseNtshona Kapa kwaye iye yasiskimu esibangele iindleko ezinkulu.

UCwangciso ngokuHlangeneyo lweMithombo yaManzi

Ngokuqonda ukuba ulawulo lwengozi yokunqongophala kwamanzi kuye kwangxamela ukubaluleka kakhulu ukuze kuqinisekiswe ngekamva elihle (eluqilima) lovimba wamanzi nanexabiso elifikelekayo, iSixeko siye saggiba ukuba sidale isicwangciso-qhinga ngokuhlangeneyo kunye nokwandisa kwemithombo yamanzi, kwaye kuthe ekupheleni kuka-1999 iSixeko siye saqhuba "uPhando lwesiCwangciso ngokuHlangeneyo sokuGcinwa kwaManzi" -IWRP (i-Integrated Water Resource Planning Study) "noPhando lokuFunyanwa koBuninzi/imithombo yaManzi" (i-Bulk Water Supply Study).

Injongo yezi zifundo ibekukuphanda izinga lephulo elingekamkeleki lesiqalo solawulo lokufuneka kwamanzi ngokudibeneyo nezkimu ezahlukeneyo zokufunyanwa kwamanzi ngokubanzi.

Iziphumo zolu Phando zibonakalise ukuba kuye kongiwa ngokufanelekileyo, ukukhawulelana nokushokoxeka kwamanzi, kunganempumelelo ngokumiselwa kwamaphulo athile olawulo lokusetyenziswa kwamanzi. Xa kuthelekiswa la maphulo okufunyanwa kwamanzi, amanye awo anganeendleko ezincinane, nje ukuba, angamiselwa ukuba agqitywe ngokwexesha elifutshane kwakhona kummandla osingqongileyo ofanelekileyo kwaye amnkeleke eluntwini lasekuhlaleni.

Abophando be-IWRP bandulule ukuba iSkimu eSandisiweyo i-Voelvlei Ibesesilandelayo ukumiselwa, silandele iProjekthi yaManzi ase-Berg (BWP). Ngokungqinelana noku kungentla kuye kwandululwa kwakhona ukuba kuqhutywe olunye uphando oluthe vetshe noluvunyiweyo kuMatye aGcina nakwaMpompoza aManzi akwiNtaba yeTafile (i-Table Mountain Group Aquifer).

Ukonga amanzi yeyona ndlela iyiyo yobomi