

## Great Ruaha River Water Level | 2004-05

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### October 2005

On the 29<sup>th</sup> October 2005 the Great Ruaha River ceased to flow at the Jongomero end of the park. It began flowing last year on 4<sup>th</sup> December 2004, having stopped on 2<sup>nd</sup> November 2004. This resulted in a total of only 31 days dry for 2004, a record for recent times.

Therefore, according to my records (1994-2005), for the years of 2004 and 2005 the river has flowed for approximately 5-6 weeks longer than in previous years. It is my belief that the valuable work that The Rufiji Basin Water Office (RBWO) is doing along the Ndembera River has contributed greatly to this increased flow.

The work that they are doing is simple but effective. They are making sure that from June to October all irrigation gates off that river are closed, so that the water may continue down to the Usangu Swamp. However, this is only one of the rivers entering the basin.

Therefore, I believe that if this simple operation was replicated on the other major rivers entering the swamp that it would be an excellent way to at least start combating the problem of flow during the dry season.

I would like to congratulate the RBWO office for their work.

Sue Stolberger

### November 2005

#### The most recent update from RIPARWIN, 2005

(The authority on research for the Great Ruaha River problem)

RIPARWIN have given invaluable insight to the problem via their extensive research.

They say:

Our understanding is that most actions are now with the RBWO. They, in support with WWF, are deploying policies that engage with upstream farmers constructively and are having an effect on downstream releases. They are also getting good support from FAO, and we are very impressed with RBWO's efforts given the constraints they face.

Our project is very much in its final stages - dealing with uptake and dissemination of key ideas. Our project is trying to get the key players in Dar to think about revising intakes which will make it easier to release more water downstream, as well as resolve conflicts between them. We've already opened the debate on this, and are having a follow up meeting.

The other thing is to get the river basin game taken up formally as a means of ensuring that river users realize how to share water, save water and release water. This game goes alongside the intake revision ideas. There is now good interest in this tool, and we are demo-ing the game to the two key ministries at each opportunity.

Our team is also about to deliver the Ruaha Basin Decision Aid (RUBDA) which will support the RBWO in taking decisions about water rights, so that they can address the balance between upstream and environmental needs. This training is in December, and is a follow up to initial training held in September.

We have also submitted documents to the RBWO that specify how the river may be kept flowing year round, including the amounts of water needed below the intakes to ensure dry season flow. This is about 5-7 cumecs.

We have also been working quite closely with the Ministry of Agriculture so that they revise their irrigation efficiency. We believe it is important to realize that smallholders are generally efficient, but are facing structural constraints that make it difficult for them to change their activities, but lining canals are not related to these types of problems and will not resolve water losses.

We have also generated several other small documents that pose various questions about water management, and allocation of water between different sectors.

They also say:

It is interesting that the concept 'that Usangu irrigation is inefficient so that improving irrigation management can help fill the hydropower dams' (not a quote but an interpretation) remains so resilient - this was the rationale for the RBMSIIP project.

The SMUWC project and the RIPARWIN project has long argued that the major water waste in irrigation occurs during the dry season and that these savings are probably only enough to provide extra water during the dry season to keep the wetland topped up and therefore to give some hope to the notion of returning the Ruaha to year-round flow. It is not helpful to argue that the trade-off exists between irrigation waste and hydropower, though one can argue that a balance exists between irrigation and hydropower. However, even that has to be qualified because of the fact that Mtera/Kidatu receive their flows from many other rivers, and that the proportion of water depleted by irrigation is probably in the region of 15 to 35%, and that the manageable and useable waste part of this is an even smaller fraction. It has long been established that the power cuts from Mtera/Kidatu are a result of excessive and relatively inefficient water releases, due in part to a divergence between technical and political objectives for power management.

Much more work can be done in terms of the trade-off between irrigation and the environment, not in terms of large quantitative water releases but in getting this highly valuable dry season water better managed between sectors. I believe that this can be done via better water management. In turn, the question, "how to do this?" remains key.

We need a discussion on this and RIPARWIN has been holding meetings on this with various stakeholders. The idea that lining canals underpins improved water efficiency is far-fetched, and yet this remains common theory within the irrigation profession and can be found frequently mentioned in the literature related to irrigation efficiency in East Africa. Likewise, I keep coming across the notion that 'farmers need training on irrigation management', when in reality they are year-round highly-experienced experimenters and observers of irrigation. A better approach would be help them frame their experience so that they can solve their issues between them, and take more major priorities to service-oriented authorities. This is the big difference between conventional 'farmer training' and the river basin game, a problem-framing tool that the RIPARWIN project designed.

With my 21 years of experience in irrigation, I would not have 'found' the RBMSIIP link/rationale between efficiency and high-volume downstream releases because that is not how I conceive of, or measure, irrigation efficiency.

In the final few months of RIPARWIN, I hope that we are able to disseminate our message of what irrigation efficiency consists of, and how best to improve it, and that related to this, some key organisations are able to hear us.

Bruce Lankford

## **December 2005**

The following in reply to the above sums up the situation very well:

### **A personal view from Robert Robelus, World Bank Environmental Specialist**

5<sup>th</sup> December 2005

I agree with you that irrigation has no or only a very slight impact on the filling of the Mtera reservoir (the SMUWC project demonstrated this). The low water level in the reservoir is a combination of reduced rainfall and overdraft for electricity production (reduced rainfall has been occurring as well in other parts of East Africa during the last few years).

When the World Bank started the RBMSIP project:

- (i) In the beginning we did not have an idea of the project losses and impacts. It was a black box.
- (ii) When the SMUWC project demonstrated that irrigation doesn't have an impact on hydropower, but did have an impact on the environment, the implications were quickly adopted (e.g., no construction of weirs that enable schemes full dry season abstraction) and closure of irrigation schemes during the dry season to be enforced by the Rufiji Basin Water Office.

Irrigation has a clear impact on the downstream environment (Usangu wetlands), and especially the impact during the dry season on the flow of the Great Ruaha River is significant. Closure of the irrigation systems during the dry season and the use of groundwater for vegetable farming and drinking water would greatly improve the situation of the river and likely restore the flow. The water redirected from the river during the dry season should be zero. These actions need to be further detailed and enforced. Also the need to rehabilitate existing irrigation schemes and improve water management during the wet season and increase incomes for farmers is clearly a priority.

Robert Robelus

## **20<sup>th</sup> December 2005**

Though we did enjoy an extended 5 weeks of flow this year, as I look outside the door of my tent right now the so called 'Great Ruaha River' is no more than a very hot, dry, rock bed with a few scummy pools. The animals are drifting about aimlessly in search of water. The remaining pools are covered in green scum; the smell of putrid water is everywhere. The rain is late so there are still some weeks to go before we can hope for 'a river'.