

PROFESSOR AHMED'S REPLY

What did Professor Moid U. Ahmed had to say to such an extremely dangerous accusation? In a letter dated October 10, 1984 to Mr. Fred Pearce, the News Editor of New Scientist, Dr. Ahmed pointed out that the article of Dr. Ed Wright included several inaccurate statements. Below is the reply of Prof. Ahmed:

Dear Mr. Pearce:

I read your article, «Why Gaddafi's Wells May Run Dry?» in the New Scientist of Sept. 1984. I have found several inaccurate statements that should be corrected and published.

1) «Kufra is now virtually abandoned as an agricultural scheme» according to Dr. Wright. Kufra still is a viable agriculture project. This is now a wheat producing farm instead of sheep raising farm. This year the production of wheat was 5 ton/hectare. As a matter of fact, I have been contacted on the feasibility of drilling more water wells for this project.

2) In you article, you stated «Only a small percentage of the water (in the wells) come from storage. This is out of context. In my paper «A Quantitative Model to Predict a Safe Yield for Well Fields in Kufra & Sarir Basin, Libya» published in «Ground Water» Feb. 1983 (Not in the Journal of Hydrology) I stated «This simulation indicated that a small percentage of water came from storage, and that its effect was almost insignificant. By relying on the leakage of $116 \text{ m}^3/\text{s}$ and intercepted flow of $29 \text{ m}^3/\text{s}$ the aquifer is assured of being productive. The well design plays an important role in obtaining the leakage from zones above the screened interval». This simulation indicated only a small portion of underflow can be intercepted and the rest of the water is obtained from leakage and storage. As a matter of fact most of the water would be obtained from storage.

3) Your statement -- «Colonel Gaddafi's «Eighth Wonder of the World» a plan to pump water from beneath the Sahara up to 2400 kilometers to coastal farms, could turn from a flood to a trickle within a few years — is not based on scientific facts. I designed the North & South Sarir Production Project consisting of 240 wells (Ahmad 1979). So far the well field is behaving very well with no serious drawdown problems. Last year this well field produced enough water to grow 90,000 tons of wheat. I designed for the West Sarir Transportation project a total of 126 wells with 42 wells in each row. The distance between the rows is 10 kms and the distance between each well is 2 kms. this field is designed to pump 1 million m^3/day (Each well @ $0.09 \text{ m}^3/\text{sec}$). The maximum drawdown in some of the wells would be 100 meters in 50 years. This data is based on a simulation that does not take into account of underflow or recharge. This well field is 25 kms west of North Sarir well field. Our maximum drawdown prediction of Tazerbo well field for 108 wells (36 wells in each row, row spacing 10 kms; each well 2 km apart, $Q = 0.11 \text{ m}^3/\text{sec}$ per well) is 70 meters. This drawdown is based on a simulation that does not take into account the underflow or recharge. Monitoring the behavior of Kufra and Sarir well fields has been underway for 10 years. After running hundreds of simulations, we are confident that these wells will behave according to our predictions (perhaps even better, since pessimistic scenarios are used) if the wells are constructed properly.

4) Tahir Abufila in his MS thesis completed in 1984 — «A 3-D Model to Evaluate the Water Resources of the Kufra & Sarir Basin» determined the affect of 14 well fields in the Kufra & Sarir Basins on neighboring countries. He found that groundwater resources in Sudan and Egypt would be minimally effected. As a matter of fact in 50 years of pumping of wells in Libya only a small fraction of underflow going to Egypt would be intercepted and there would be hardly an affect on Sudan.

I am neither a Libyan nor an Arab but an American scientist. I have devoted 10 years of my life for these projects so that the Saharan countries could benefit from the enormous quantity of underground water and feed the people of Africa (The Role of the Sahara in Food Production, Water International 6, 1981, 126-129).

I would suggest you to visit Kufra and Sarir and ascertain the facts.

Sincerely,
Moid U. Ahmad
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Geological Sciences