

Disi Water Conveyance Project



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Jordan is Water Poor

- Jordan is a magnificent place.
- It is one of the most arid countries in the world with 83% of the country dessert and steppe.
- 94% of the country gets less than 200mm of rain.
- In 2008, 140 m³ per capita. There is less every year
- Jordan is a medium income state with 6.3 million and rapidly growing population
- The Jordan River is not deep or wide. It is almost gone and highly polluted.
- Political disputes have separated Jordan from the West Bank and Lake Tiberias.
- The Dead Sea, one of the natural wonders of the world, is drying up.

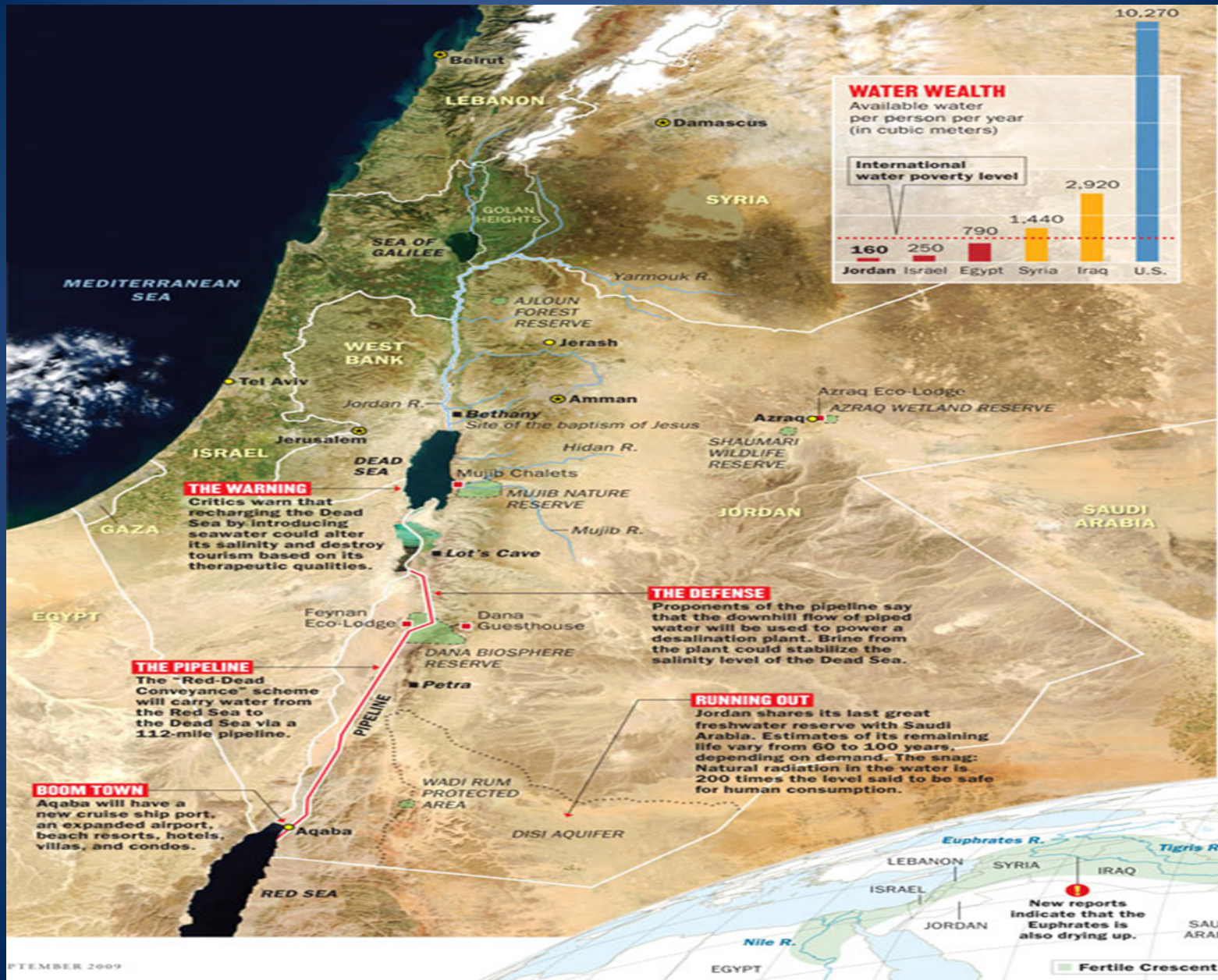












Conflict between Urban and Rural Users - Urban

- Almost half the country lives in Amman.
- Water in Amman is rationed. Water runs a few hours a week or less. If you run out, or if it does not run, you have to buy it from private dealers.
- The rest of the time it sits in dirty tanks. It is not clean. No one drinks it. People try not to cook with it. Sometimes you can't even wash in it. Private water is expensive, but sometimes it is needed.
- Total municipal water demand is 33% of total, almost all from groundwater. 78% of the population is urban.
- "Half of Amman's water supply is "lost" or unaccounted for somewhere in the nation's distribution network. " (USAID) In addition, tariffs are low and do not cover total operation and maintenance costs. The system is leaky literally and figuratively.
- Continuous flow would clean the system somewhat.







Ground water?

Conflict between Urban and Rural Use

- Agriculture

- Uses 3% of Land, produces 3% of GDP and uses 60% of water (industry, tourism and livestock use only small % of water)
- Rain and surface water are very limited. Agriculture depends on groundwater.
- The most profitable segment of Jordan's agriculture is fruit and vegetable production (including tomatoes, cucumbers, citrus fruit, and bananas) in the Jordan Valley.
- Sustainable use rate is about 275m, now used at double that. So the groundwater is being depleted at an alarming rate. Mostly in the north supplying agriculture and cities.
- Many illegal unlicensed and unmeasured wells—corruption and political influence keep them going.
- Depleting the aquifers, many of which are becoming saltier and depth to ground water is increasing.
- Summary—Jordan is running out of water.
 - The situation in Amman is dire.
 - The situation with agriculture is dire and getting worse.
 - Those two are fighting over a scarce resource.







The Jordan River Valley Large Scale Agriculture

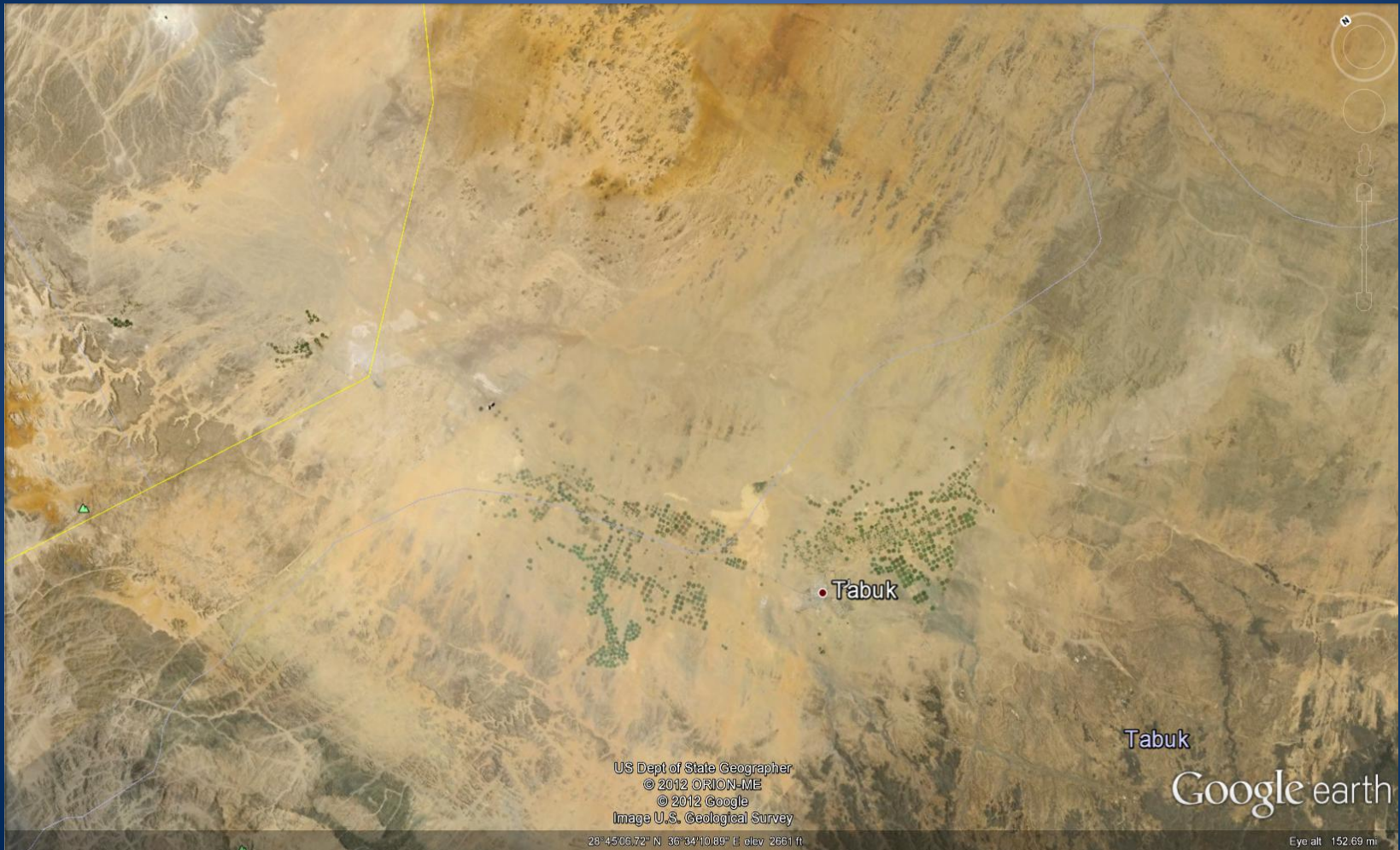


The Disi Aquifer

- Considered a “fossil aquifer” it has a slow recharge.
- The aquifer is large extent 320 kilometers long. Mostly under Saudi Arabia.
- It is Jordan last water resource. Its final reserve. When it's gone, it's gone. It is the definition of unsustainable use.
- Quality (issue with radium/radiation—not clear, not public and not resolved)
- Long term, Jordan versus Saudi Arabia—a pumping war on a cross-border resource

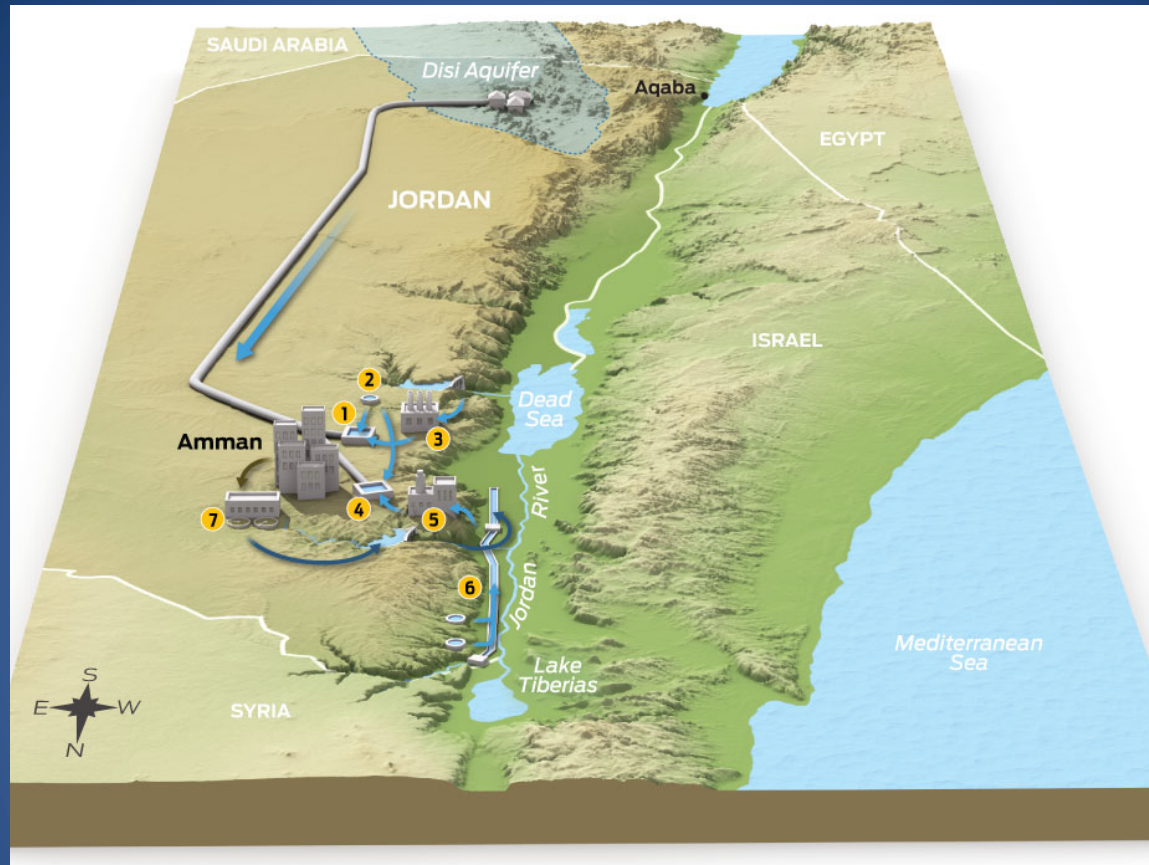


Pumping War









The Sources of Water for Amman

The Disi Conveyor

- Well field—46 wells
- The pipe is large, 325 km long and will carry 110m³ of water per year.
- It is said to last at least 50 years. The hydrology to support this has not been made public.
- Pump stations along the way and a lot of electricity to pump uphill to Amman.
- The communities along the way are not supposed to participate. They are supposed to watch the water go by.
- Very publically get unused water to people in Amman who need it.







API 5L PSL 1 SAWH
SPEC SL-0453 ©NOVEMBER/2010
Pipe No: HATBORU 136-6 -247
HEAT NO: 910648
P PA 2 X42M D 1600mm t14,29mm L13,04m 47 bar
W 7201 kg

DISI

API 5L PSL 1 SAWH
SPEC SL-0453 ©NOVEMBER /2010
Pipe No: HATBORU 136-6 -242
HEAT NO: 10220540
P PA 2 X42M D 1600mm t14,29mm L13,04m 47 bar
W 7201 kg

DISI

API 5L PSL 1 SAWH
SPEC SL-0453 ©NOVEMBER /2010
Pipe No: HATBORU 136-6 -291
HEAT NO: 910662
P PA 2 X42M D 1600mm t14,29mm L13,04m 47 bar
W 7206 kg

DISI

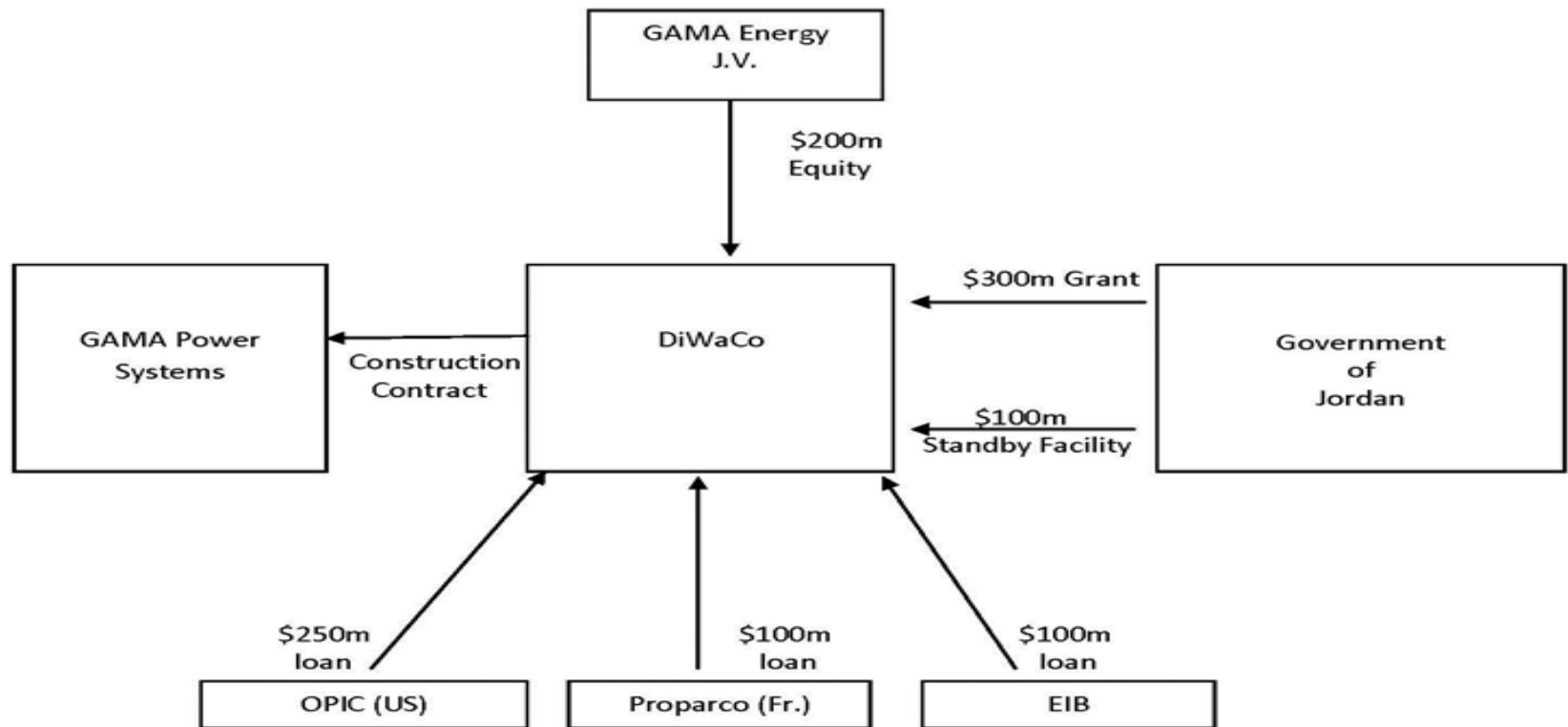




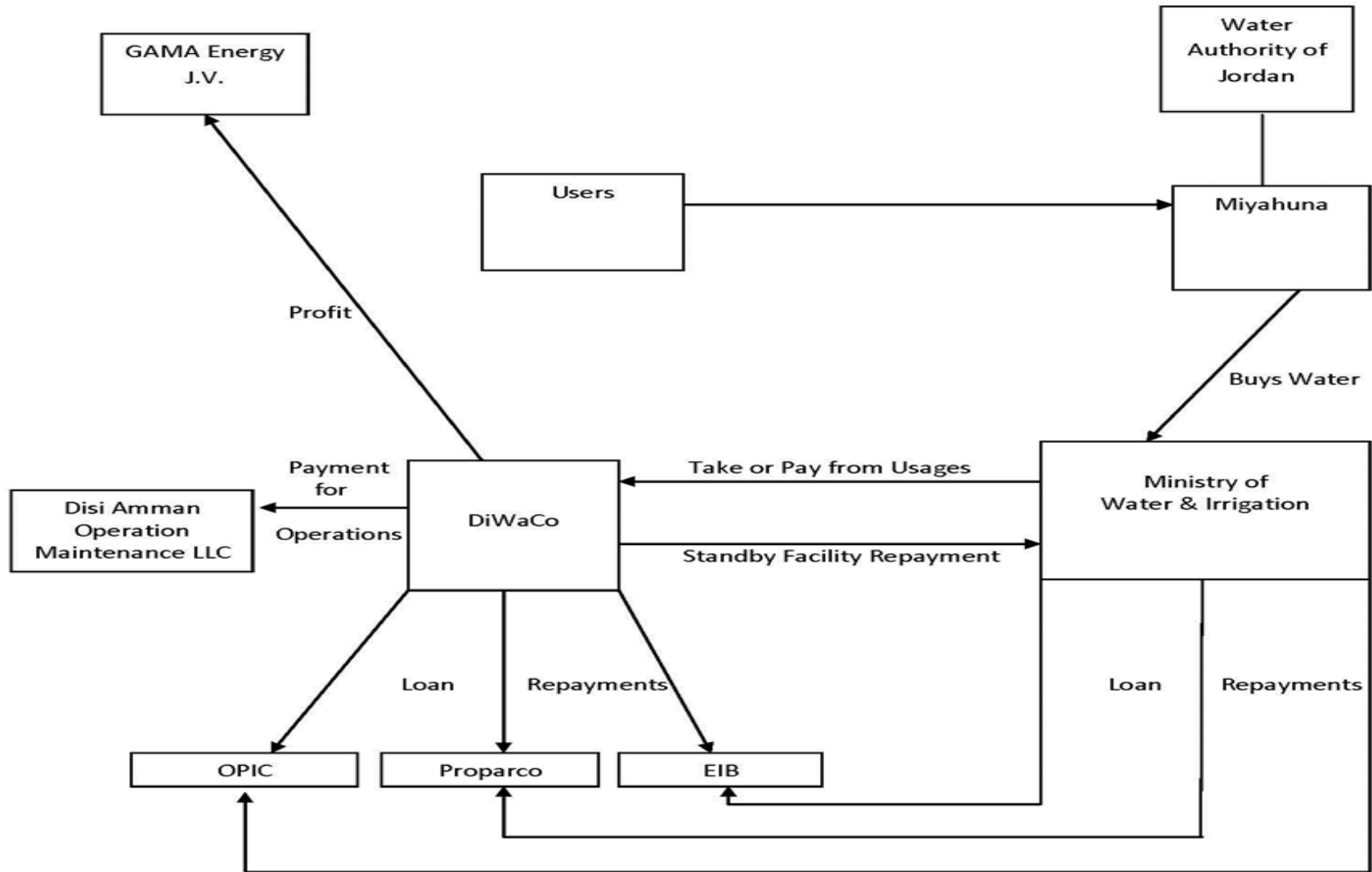
Follow the Money

- Cost is now estimated at \$1.1 Billion (it constantly increases and we will see what the final number is).
- That is a lot of money for Jordan. (3% of GDP, 15% of all government revenue on one pipe).
- This is very expensive water.
- Jordan is a debtor nation dependent on foreign aid.
- Finance is from American and European Development Banks.
- GAMA a Turkish construction company and GE are the corporate Participants in the Public Private Partnership.
- The payment scheme is not clear. It is supposed to depend on user fees. No public explanation on how this would work.
- The project has been paid for with International Loans
- So this politically motivated project, which does not support development in any rational sense, is likely to be paid for, at least in large part, by the politically motivated Donors.

MONEY FLOW FOR CONSTRUCTION



MONEY FLOW DURING OPERATIONS





From: **GE** in the Middle East



GE Capital

Disi Water Project
in Jordan

In an effort to alleviate a severe water shortage in Jordan's capital and the surrounding area, the Government of Jordan conceived the Disi Water Conveyance Project, through which a 325 kilometer pipeline will be built, pumping water from the ancient Disi aquifer in Mudawarra to Amman.

A Mixed Political Message

- But we were told the plan is not to increase water to Amman.
- What? Isn't that the whole idea?
- The plan is to use the Disi water to turn down the pumping of the overtaxed groundwater now used to supply Amman and let the aquifers refresh. That is good, right?
- But no one believes this will happen. Not even officials in the Ministry of Water. Everyone believes that water not used will go to agriculture. Particularly the politically connected big business farms.
- So what is Disi for? The net effect is simply a water subsidy to political powerful profit seekers. Dressed up as supplying much needed water to a thirsty city.

مياها
miyahuna
الإدارة العامة







Disi: Not What it Seems

- It appears to be an infrastructure project that transports unused water from where it is to where it is needed:
 - Unused water from an aquifer
 - Piped to urban areas that need it.
 - Relieving aquifers which can recharge.
- What is likely is that it
 - Is wasteful of money and water
 - Is not a long term solution
 - Allows politically powerful groups to make money exporting fruits and vegetables
 - Does not improve Jordan's severe water challenge
- It is, in fact, a wasteful political move funded by the Donors
- Conflicts:
 - People versus agriculture
 - Amman versus everyone else
 - Jordan versus Israel turns into Jordan versus Saudi Arabia



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