**Simulation Challenge – Developing a Robust Performance Improvement Plan**

The relevant government agency has requested yourutility management to put together a cohesive plan to improve service and performance over the next 5 years. In response your Water Utility Board of Directors have approved a maximum public budget spending of FM 7500MM for external funding which has to be spent on a performance improvement actions described below in any combination. As AD Water Utility management team, your goal is to derive your best solution through the external investment FM 7,500 MM. The most attractive solution is the one that satisfies ***two*** important requirements:

1. **Be financially sustainable**. In other words, the projections do not yield a financing gap in any given year that requires additional government contributions.
2. **The highest NPV is achieved from the money invested**.

**Parameters**

* Funding:
  + **Grant**: Maximum 15% of the total FM 7,500 investment
  + **Donor Financing**: Maximum 85% of the total investment cost at 4% for 15 years with 3 year grace period on principal only.
  + **Own Resources**: Excess Cash derived from operations can be invested beyond the external financing amount of FM 7,500 MM.

Your staff has provided you with the following assumptions on the cost and benefits of various performance improvement actions.

* **Leakage Reduction Program**: Investment costs are fixed at FM 500MM for each 1% reduction in unaccounted for water in same year.
* **Customer Connection Program**: Each connection costs FM 2 MM to the utility. The Utility however can charge a connection fee of FM .6MM. Your Team can increase connections at 375 max per year.
* **Increase Treatment Capacity**: Increments of 50,000 m3 of increased capacity can be made at a cost of FM 3500MM in same year.
* **Collection program**: Maximum 50 households can be disconnected annually at costs of FM 1MM per household incurred due to legal fees. Your Commercial people indicate that for each 50 households disconnected your receivables decline by one (1) month. Bad debt expense also is reduced by 5% for each 50 disconnections.
* **Tariff Increase**: The Ministry has given you a one-time increase in tariff over the 5 year period of 5%. However, your Commercial staff has indicated that for each percentage increase in tariffs, consumption also decreases by .09%.
* **Inventory Management System**: An FM100 MM Investment in an Inventory Management System will be able to reduce your inventory balances to 2 months of operating costs. Minimum Requirements are 3 months of operating costs.

Instructions:

1. Name Your Team: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. Put together Your Best Plan Utilizing the financial model
3. Identify Policy Reforms Needed by Government in Order to Achieve your Plan
4. Put together a communication strategy