

Review of: "Reducing non-revenue water in Luxor-Egypt using GIS"

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Potential competing interests: No potential competing interests to declare.

This paper reports on the activities done to reduce UFW in Luxor, Egypt. It is a very practical article from which the outcomes can be beneficial for other utilities as well. However, there are several points that should be addressed properly in order to improve the quality and clarity of the text.

1-Abstract: "Unaccounted for Water, referring to all losses from the water system, illegal or otherwise, frequently exceeds 40% of all water produced." This percentage is for which country or region?

2-Abstract: "The issue of Unaccounted for Water, encompassing losses from the system, whether legal or illegal. This places a significant burden on both utility operations and budgets. A substantial volume of Unaccounted for Water signifies considerable revenue losses for the utilities, and the financial constraints often translate into performance deficiencies within the utility." Repetitive sentences.

3-Abstract: Please add 1-2 sentences about the main findings of your work.

4-In the title, the term "non-revenue water" is used. However, in the text, mostly "Unaccounted-for Water" is used. Please note that they are 2 different terms (<https://thewaternetwork.com/article-FfV/water-losses-non-revenue-and-unaccounted-for-water-raoNh8dY0nlBOYV0qfLbpA#:~:text=Unaccounted%2Dfor%20water%20is%20the,consumption%2C%20both%20metered%20and%20unmetered.&text=System%20Input%20Volume%20is%20the,enters%20the%20water%20supply%20system>). Please use the right term based on your research aim in the whole paper.

5-"Commercial losses" is not the correct term. Please use the standard terms from IWA (<https://www.leakssuitelibrary.com/iwa-water-balance/>)

6-Previous studies on the topic should be mentioned in the introduction section, and the novelty of the present work should be highlighted. The novelty of your work is highly missing. Some of the previous studies are:

<https://iwaponline.com/ws/article-abstract/5/1/41/25972/Developing-a-non-revenue-water-reduction-strategy>

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<https://link.springer.com/article/10.1007/s00477-020-01858-1>

7-Please add a flowchart to the methodology section to make it clearer.

8-Please add more information on the system under study, such as total pipe length, pipe material, number of connections, etc.

9-“Three locations were identified to measure the water quantity, two for water in, and one for water out.” Please show them on your map.

10-“A second round of measurements has been carried out in the pilot area in the same three locations to know the effect of repairing the discovered leaks.” Please add some time scale for these activities as they are normally very time consuming, and by mentioning the time, readers will have some sense that they were done within which period.

11- Activities like “Install meters in the governmental buildings and in the non-governmental connections, or convince them with a suitable flat rate until the installation of meters.” are normally very time consuming. It is important to address the time which was spent on them in the text.

12- It is mentioned that the reduction in the UFW = 4.5 %. I do not understand how that division is equal to UFW. By definition, UFW is the difference between the volume of water delivered in a network and legitimate consumption, both metered and unmetered.

13- In some parts of the paper, it is mentioned that the pilot program happened in 2010 and somewhere else, 2021-22. It is confusing. What is the correct period?

14-In the title, Geographic Information System (GIS) maps is highlighted, but in the method and results section, there is not a specific role for this software in improving UFW management/reduction. Please provide more clarification on the benefits of GIS in your discussion section or consider revising the title of the paper.

15-The conclusion should be the last part of the paper. Please merge the later sections into the conclusion or earlier sections.