

Technical Proposal: Smart Urban Rebuilding for Gaza

Title

Smart Urban Rebuilding for Gaza

1. Problem Statement

Gaza has been heavily damaged by war, leading to pressing environmental and infrastructure challenges. Key problems include:

- High levels of air pollution from destroyed buildings, debris, and lack of green infrastructure.
- Water scarcity and contamination due to damaged pipelines and stressed water sources.
- Loss of agricultural land and soil degradation, weakening food security and livelihoods.

These challenges reduce quality of life, pose health risks, and make the process of rebuilding harder if not addressed in a climate-resilient way.

2. Project Objectives

- Use NASA Earth observation data to compare environmental metrics **before vs. after** the war in Gaza.
 - Highlight key areas of concern in **air quality, water resources, and agriculture**.
 - Create data visualizations, articles, photos, and videos that are accessible to local planners, NGOs, and the public.
 - Propose actionable, sustainable solutions to guide urban planning, focusing on rebuilding with resilience to climate and environmental stressors.
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3. Proposed Solution

We will build **Educational and solution driven website** , containing:

- Interactive graphs showing air, water, and agriculture metrics over time.
- Written articles in both Arabic and English explaining what the data shows and the recommended solutions.
- Photos and at least one short video to illustrate the human and environmental impacts.
- A media gallery with before/after comparisons.


The solution aims to inform urban planners and decision-makers, empower NGOs with evidence, and engage the community via an easy-to-navigate website.

4. Tools & Technologies

- HTML, CSS, JavaScript (vanilla JS) — core tools to build the site quickly. Optionally React.js if time permits and team is comfortable.
 - Visualization library (e.g. Chart.js or D3.js) for graphs.
 - Static datasets: CSV or JSON files derived from NASA (e.g. Landsat, MODIS, SMAP).
 - Media: volunteer or stock photos; video footage if available or simulated.
 - Hosting: Vercel or GitHub Pages for static site hosting.
 - Multi-language support: Arabic and English.
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5. Deliverables

By the end of the hackathon, we will deliver:

-  A prototype website with:
 - Home page (introduction, objectives)
 - 3 sections/pages: **Air, Water, Agriculture**

- Each section with: graph(s), article, at least one photo/video example
 - Before-and-after comparison visuals
 - Media Gallery page (photos + video)
 - Articles in both English and Arabic for each of the three themes
 - Interactive graphs showing changes over time (pre-war vs post-war)
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6. Team / Roles

- **Mustafa Elsebaey** – Developer, Website Structure, Designer & Mobile Responsiveness
 - **Mostafa Tarek** – Developer, Charts , Graphs Integration & Data Visualization
 - **Maria Akram, Linah Mohamed** – Content Creator, Articles & Data Storytelling
 - **Habiba Adel** – Media & Design, Photos, Videos, and Visual Layout
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7. Benefits & Impact

- Provides decision-makers with visual, data-driven insights to inform rebuilding policy in Gaza.
 - Helps NGOs and donors prioritize interventions in air, water, and agriculture.
 - Engages community through accessible media, raising awareness of climate impacts.
 - Sets a foundation for longer-term tools/platforms beyond the hackathon.
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8. Conclusion & Call to Action

We aim to deliver a compelling prototype in two days that demonstrates how NASA Earth observation data can guide Gaza's path to sustainable rebuilding. With your support—feedback, data sources, or mentorship—we can make this more than a demonstration: a springboard for a lasting tool that benefits communities, planners, and the environment.