

Group 4 - Workshop ATC320 - from 10.30 to 12.30

ACTIVITY 2

1. Defining our problem statement

Problem: Problem Statement

Access to safe and reliable sources of fresh water is a critical issue in many remote Indigenous communities in Northern Territory, including Yuendumu.

Background: Situation of water problem in Northern Territory in general and Yuendumu Community in particular

- According to a 2018 report by the Australian Bureau of Statistics (ABS), access to safe and reliable sources of water remains a significant challenge for many Indigenous Australians living in remote communities. The report found that around 12% of Indigenous Australians living in remote areas did not have access to a reliable source of water, compared to just 1% of non-Indigenous Australians living in remote areas. The report also highlighted the impact of water quality issues, such as contamination from mining and other industrial activities, on the health and wellbeing of Indigenous communities.
- A 2020 report by the Northern Territory Department of Health identified several water quality issues in Yuendumu, including high levels of fluoride, nitrate, and total dissolved solids in the groundwater. The report also noted that the community's water supply was vulnerable to contamination from sources such as mining activities and unauthorized dumping.

References:

- Yuendumu in Central Australia at 'severe risk' of running out of water. Retrieved from <https://www.abc.net.au/news/2019-08-13/remote-community-yuendumu-running-out-of-drinking-water/11405024>
- Not enough water for Yuendumu to grow. Retrieved from <https://alicespringsnews.com.au/2018/09/21/not-enough-water-for-yuendumu-to-grow/>
- Aboriginal community in NT at 'severe risk' of running out of water. Retrieved from <https://www.sbs.com.au/nitv/article/aboriginal-community-in-nt-at-severe-risk-of-running-out-of-water/lgfp1q6z1>

Relevance: Why this problem matters

- The problem of limited access to safe and reliable sources of water in remote Indigenous communities in Australia, such as Yuendumu, is a critical issue that matters for a number of reasons.

- + Firstly, access to safe and reliable sources of water is a fundamental human right, as recognized by the United Nations General Assembly. The lack of access to clean water can have serious health impacts, including waterborne illnesses such as diarrhea, which can be particularly dangerous for children and other vulnerable members of the community.
- + Secondly, water-related issues can have a significant impact on Indigenous peoples' ability to maintain and practice their cultural traditions, including their relationships with the land and water. Water is a critical part of many Indigenous cultures and is often regarded as a sacred resource. Limited access to safe and reliable sources of water can therefore have a significant impact on Indigenous peoples' ability to maintain their cultural identity and connection to the land.
- + Finally, water-related issues are often closely linked to broader issues of social and economic disadvantage, including poverty, poor health outcomes, and limited access to education and employment opportunities. Addressing these issues requires a holistic approach that takes into account the complex social, economic, and cultural factors that contribute to them.
- In summary, the problem of limited access to safe and reliable sources of water in remote Indigenous communities in Australia is an issue that matters because it is a fundamental human right, has cultural significance, and is closely linked to broader issues of social and economic disadvantage.

References:

- + Right to an adequate standard of living, including water. Retrieved from:
<https://www.ag.gov.au/rights-and-protections/human-rights-and-anti-discrimination/human-rights-scrutiny/public-sector-guidance-sheets/right-a-dequate-standard-living-including-food-water-and-housing#:~:text=The%20UN%20Committee%20has%20stated%20that%20the%20human%20right%20to,personal%20and%20domestic%20hygienic%20requirements>.
- + Cultural significance of water in Australia. Retrieved from:
<https://www.waterquality.gov.au/anz-guidelines/guideline-values/derive/cultural-values>
- + Chapter 6 Indigenous Peoples and Water. Retrieved from:
https://humanrights.gov.au/sites/default/files/content/social_justice/nt_report/ntreport08/pdf/chap6.pdf

Objectives: What might be done to find the solution

To develop in order to conduct effective research in different areas, including researching, cross-cultural competency, environmental science knowledge and communication skills. Also, we would like to consider a range of training opportunities, including academic courses, workshops, as well as seek out mentors or advisors with expertise in relevant fields.

2. Defining the project requirements

- Challenges against the population of the community: The problem of lack of fresh drinking water is a major problem for any community, including indigenous communities in Australia. Because it will lead to health problems, diseases, which will eventually lead to a reduction in the average life expectancy of the community, including children. Furthermore, because the Northern Territory is considered a quite harsh area in Australia, and the community is located in a remote area, the problem becomes even more difficult to solve.
- Analyse user access, and affordability to use Solar water purification/filtration: In this project, we think that our team may need to conduct different researches to answer these questions:
 - + Infrastructure: Does Yuendumu have the necessary infrastructure to support solar water purification/filtration systems, such as adequate space for installation and maintenance, access to electricity, and storage capacity for treated water?
 - + Cost: What is the cost of installing and maintaining solar water purification/filtration systems, and is it affordable for the community? Are there funding opportunities or subsidies available to offset the costs?
 - + Technical expertise: Does the community have the technical expertise to install and maintain solar water purification/filtration systems, or would outside assistance be needed?
 - + Cultural considerations: Are there any cultural factors that may impact the acceptability of solar water purification/filtration systems within the community? For example, would the use of this technology be consistent with traditional water use practices and beliefs?
 - + Community engagement: How can community members be engaged and empowered in the decision-making process regarding the adoption of solar water purification/filtration systems? Are there opportunities for capacity building and community-based training to support this process?
- Analyse any potential environmental consequences while using this technology: Also, this need to be considered more clearly by us in the following weeks, however, initially, we think that there might be several

potential environmental consequences to consider when implementing solar water purification/filtration technology in remote Indigenous communities like Yuendumu, including disposal of waste, energy usage, impact on water sources, by-products of materials and manufacturing, ...

3. Design Idea:

From our perspective, we think it is possible to seek help from individuals and organizations, including investors, philanthropists, even the government, for investment, construction infrastructure, connect with engineers, experts, and discuss the project with them. In addition, it is also important that we also need to get in touch with the Indigenous Community (Yuendumu) to find an effective measures for ensuring widespread access to this water purification technology, as well as focus on the traditions, culture, lifestyle of the local people.