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## Water Misuse in Tourism and Link to Poverty Cycles

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# **WATER MISUSE & OVERUSE IN TOURISM**

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**LINKS TO THE CYCLE OF POVERTY IN DESTINATIONS**

# WHAT IS WATER POVERTY?

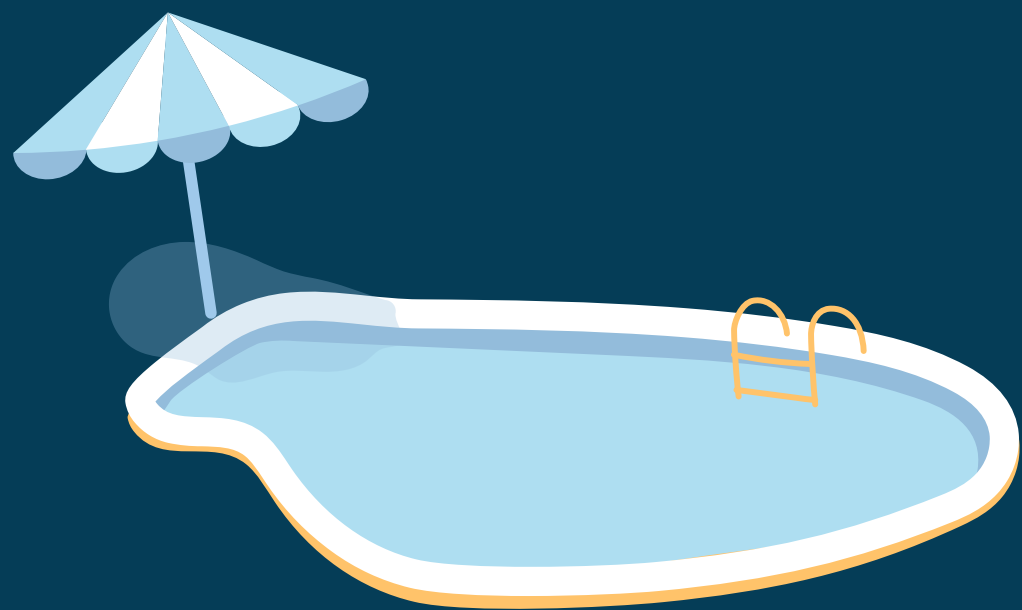
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- Issue of access to water services are linked to poverty & inequality, causing difficulties in accessing water, creating a **cycle**
- Lack of water leads to limitations for households deprived of employment/ education from lack of obtaining water- thus water poverty & economic poverty are intertwined; those suffering from water poverty are the poorest of the population, and become even poorer from lack of water

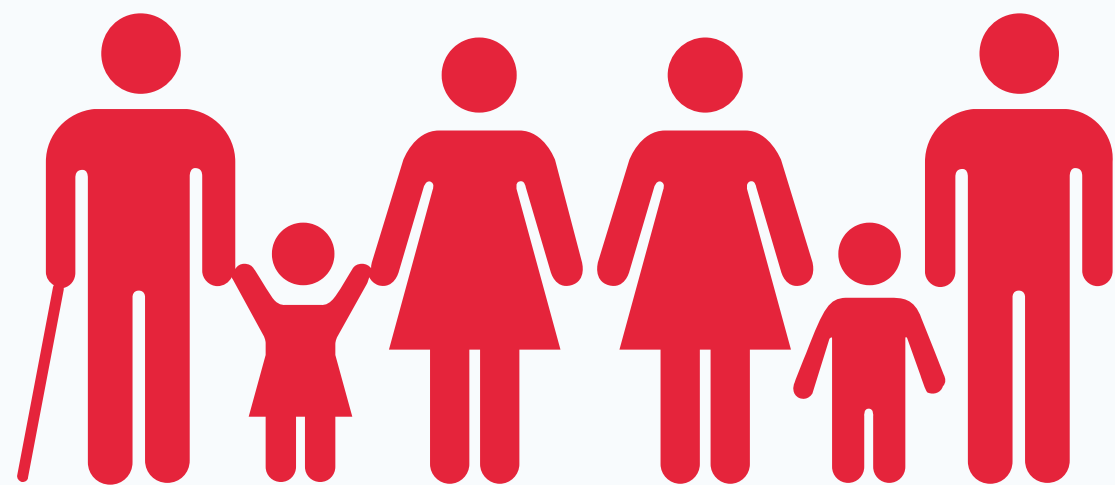
# BACKGROUND STATISTICS

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- Average citizens consume 127 liters per day; average tourist 450-800 liters per day
  - Calculated based on hotel and restaurant expenditure and activities involving water as well as hygienic services
- Consumption may reach 2000 liters per day in areas along the tropical belt
  - Overlooks how important water is for **locals**
  - Large companies including hotels and resorts will control water when it becomes scarce to enhance their own guest experience
  - **Keep it out of reach from people who won't/ can't pay for it**
- **Direct usage:** water used for showers, toilets, kitchens, laundry, swimming pool, cooling, irrigation

# WHY THIS MATTERS



- Water poverty affects not only populations but **economies**; specifically within the hotel and tourism industry
  - Countries with the highest water stress in coming years are also among those with great tourism growth
- Water scarcity affects more than 40% of the global population with projections to rise
- **Access to water is important when speaking of eradicating poverty, creating adequate sanitation, promoting economic growth, reducing inequality, and environmental sustainability**

# CAUSES & CATALYSTS

- Many countries are pulling themselves out of poverty whilst dealing with **drought and environmental issues**
- Rising sea levels have impacts of flooding and pollution of wetlands and coasts
  - Pollution of aquifers negatively affects supply of freshwater & flora/fauna habitat loss
- **Inability to obtain employment/ education makes it more difficult to get out of bad situations**, thus preventing the society as a whole from economic gain, slowing down achievement of guaranteeing water for population
- Problems extend to greater society from severe **lack of basic services and reduced accumulation of human capital**; essential for solving water issues

# EXAMPLES OF MISUSE

## ZANZIBAR, EAST AFRICA

- Locals allowed 30 liters water per day per local
- Tourists use 2,000 liters per day per tourist

## KERALA, INDIA

- Backwaters, beaches, nature reserves disturbed by rise of tourism

## COSTA RICA

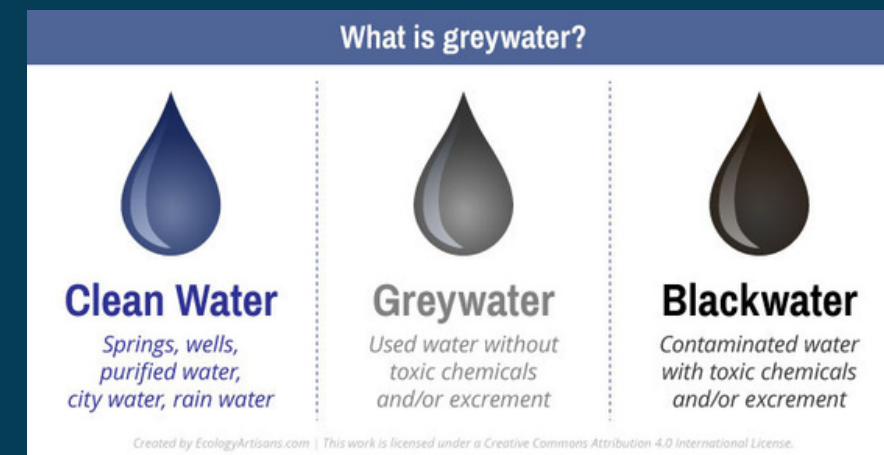
- Locals make sure water isn't being sold from under them
- 2009- controversial water pipeline project threatened to disrupt villager's water supply

## SAO PAULO

- In 2014, São Paulo nearly ran out of water
- Schools closed, crops faltered and reservoirs were left at 5% capacity for the city and its surrounding population of 22 million

# WHAT IS GRAY WATER ?

- GREYWATER: GENTLY USED WATER FROM BATHROOM SINKS, SHOWERS, TUBS, WASHING MACHINES; NOT IN CONTACT WITH FECES BUT MAY CONTAIN TRACES OF DIRT, FOOD, GREASE, HAIR, & HOUSEHOLD CLEANING PRODUCTS
- A SAFE SOURCE OF IRRIGATION WATER FOR YARDS
  - VALUABLE FERTILIZER FOR PLANTS
  - SAVES \$\$\$
- REUSING KEEPS IT OUT OF SEWERS & SEPTIC SYSTEMS- REDUCING CHANCE OF POLLUTING LOCAL WATER BODIES
- EACH TREATMENT SYSTEM FOR GRAYWATER HAS UNIQUE STRENGTH IN REMOVING A TARGETED GROUP OF POLLUTANTS
  - NATURAL MATERIALS SUCH AS SAWDUST CAN BE USED TO REMOVE TARGETED POLLUTANTS





# POLICIES & INITIATIVES

- **“GRAYWATER TOURIST REGULATION ACT”**
  - MOTIVATE THE LOCAL GOVERNMENTS TO CONTINUE TO GIVE PERMITS AND FURTHER RECYCLE WATER
  - IF A BUSINESS OR LOCAL WERE TO OBTAIN A PERMIT TO RECYCLE GRAYWATER, THERE WOULD HAVE TO BE NO RUNOFF ONTO PUBLIC OR OTHERS PROPERTY, AND LITTLE SKIN CONTACT WITH IT
    - EASIER TO OBTAIN THE PERMIT IN A FAMILY HOME THAT WILL USE THE WATER FOR THEIR OWN IRRIGATION SOLELY
  - EDUCATION IN PLACE FOR LOCAL REGULATORS
  - WATER SUPPLY FOR AREAS THAT ARE IMPOVERISHED CAN BE REPLENISHED WITHOUT GREAT FINANCIAL AID BY AN OUTSIDE SYSTEM-OFTEN WHY ECO-PROJECTS FAIL
    - AS LONG AS THE LOCAL GOVERNMENT CAN FOLLOW THE REGULATIONS WITHIN THE POLICY, ANY DESTINATION CAN IMPLEMENT GRAYWATER RECYCLING AS A SOURCE OF WATER

# Applications

- Auroville, India
  - Created irrigation beds using banana
    - Treats from a student dorm
- Koulikoro, Mali
  - Vertical flow filter and graywater garden
    - Used in irrigation of fruits and vegetables
- Tufileh, Jordan
  - Automated graywater system
    - Used for home gardens
- Mexico
  - Bioreactor & mulch bed
    - Used for a child rehabilitation center

# WHO NEEDS TO TAKE ACTION

National & International institutions should focus on obtaining necessary financial resources for improvements, and an adequate governance to ensure water sustainability/ equity



Tourists & tourist organizations should focus on implementing sustainable water practices as mandatory elements of trips to these destinations

Local governments should enact legislation to implement policies and other legislation that empowers the locals economically and regulates water usage for tourists



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