

Localizing the SDG's through Decision Support System and use of NWASH-MIS

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Constitution of Nepal

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graph TD; A[Central government:  
Large scale Projects  
Rules , Guidelines, policies,  
international commitments  
Central Data Management] --> B[Provincial government]; B --> C[Local government];
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Central government:
Large scale Projects
Rules , Guidelines, policies,
international commitments
Central Data Management

Provincial government

Local government

Constitution of Nepal

Central government:

**Central Data
Management**

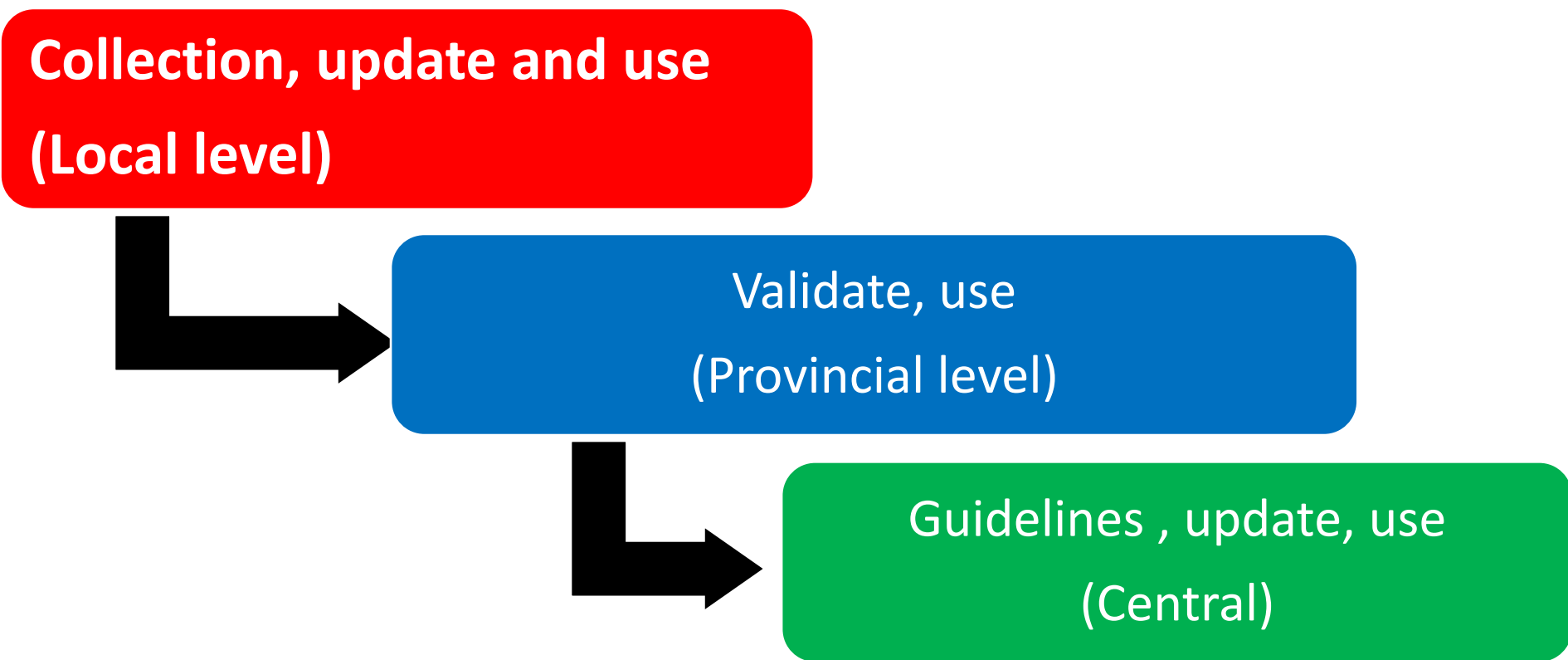


If you can not measure it, you
can not improve it.

~ Lord Kelvin

AZ QUOTES

Data layers



To achieve this we thought of

Localizing the

SDG's

by strengthening the

local

governments capacity of

WaSH planning, Monitoring

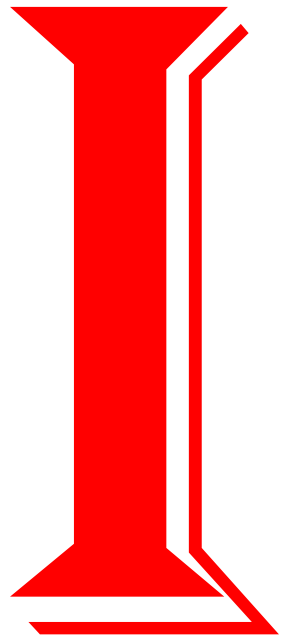
the projects , reporting as per

SDG requirements assessing

the gaps

and being prepared for the future

Possible Gaps in Local governments



INSTITUTIONAL CAPACITY

INVESTMENTS

INFORMATION

Documents prepared under WaSH plan

- **Guiding principle** of WaSH plan
- **Manual** on How to Use NWASH to formulate WaSH plan
 - Process Manual
 - Estimation Manual
- **Automated WaSH plan Draft report** , which will make Local governments job easier

Guiding Principles

1. Leaving No One Behind

Financing instruments should be such that it would make whole WaSH facility accessible & affordable to everyone

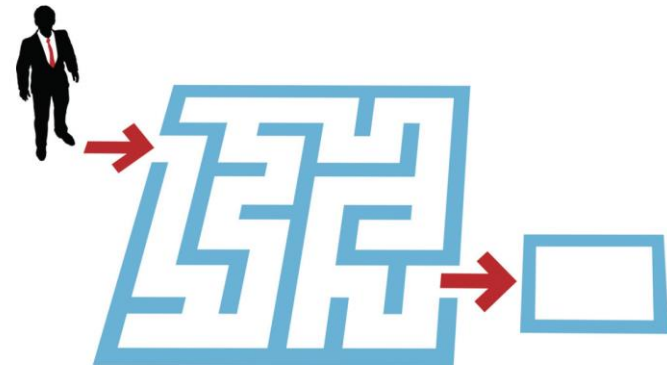
including the marginalized communities. Local government should be aware that for some marginalized groups even operational costs might become the cause to limit access the facility.



Guiding Principles

2. Monitoring of the Service

Local governments should be aware about the service level they have planned to provide in this WaSH plan and monitor the services. **The obtained data after monitoring should be submitted to National MIS portal which can be accessed by provincial government and federal government** and that would show the Local governments WaSH performance. Provincial and Federal government can assist temporarily in monitoring the service..



Guiding Principles

3. Institutional Setups

Local governments should be fully aware about the institutional arrangements needed to ensure WaSH facilities. In this WaSH plan HR cost such as Technical assistance in each scheme, monitoring cost in each scheme, Cost for Hygiene Inspector, Hygiene promoter and Human resources set up in

Schools and Health care facilities are mentioned . **Local government should try to ensure the human resource arrangement** Provincial and Federal government can assist temporarily in setting up the institution.



Guiding Principles

4. Capacity Development of Service Providers

This WaSH plan has estimated the **resources for capacity development.** However before developing the capacity the current capacity should be assessed. Depending upon the human resource and sustainability requirements from MIS data capacity development master plan of local government can be formulated. Local government can develop their capacity based upon the requirements suggested by MIS. This can be assisted by Provincial and Federal governments.



Guiding Principles

5. WaSH in All Situation

This WaSH plan has allocated the resources for WaSH in

emergencies /disaster. **It is expected that Local government would form its own contingency plan so that service could be continued in all situation** and keeping special attention to vulnerable peoples.

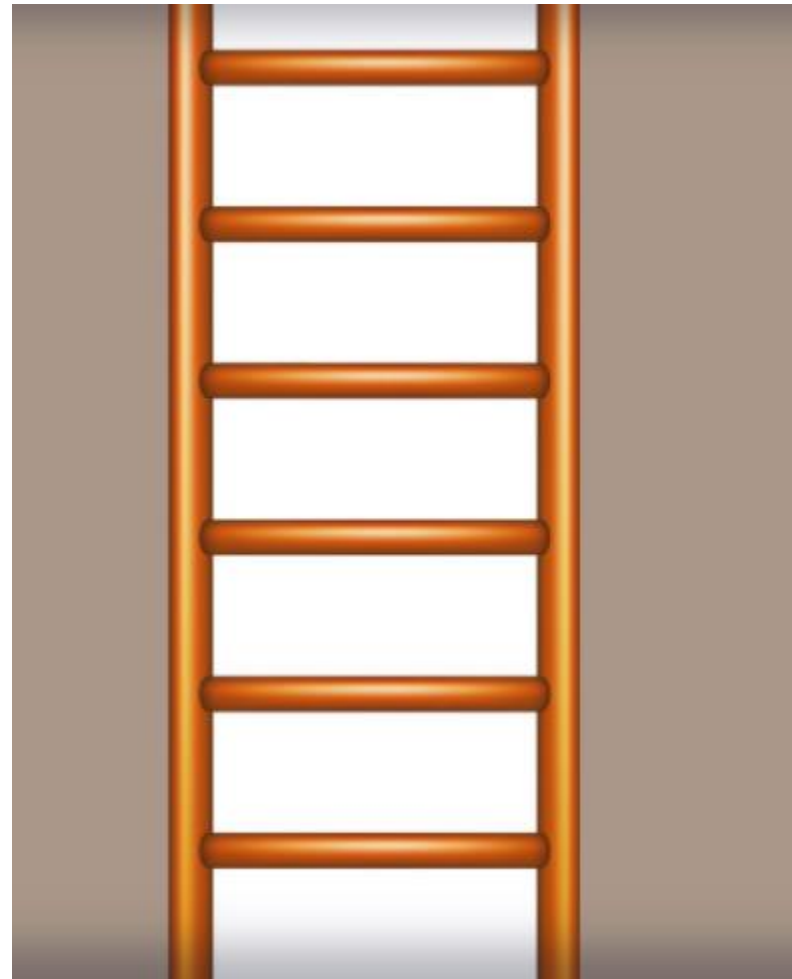


Guiding Principles

6. Priority Setup

While setting up the Priority it is expected that the planners would keep special considerations in development of managerial capacity of the utilities in

first few years, **small level capital investments in medium term and ,big capital investments in later years** so that investment generation becomes easier.



Guiding Principles

7. Availability of Fund and Bridging the Gap

The Life-Cycle Cost Approach (LCCA) provides useful frameworks, tools and methodologies for providing better insight into this in the future.

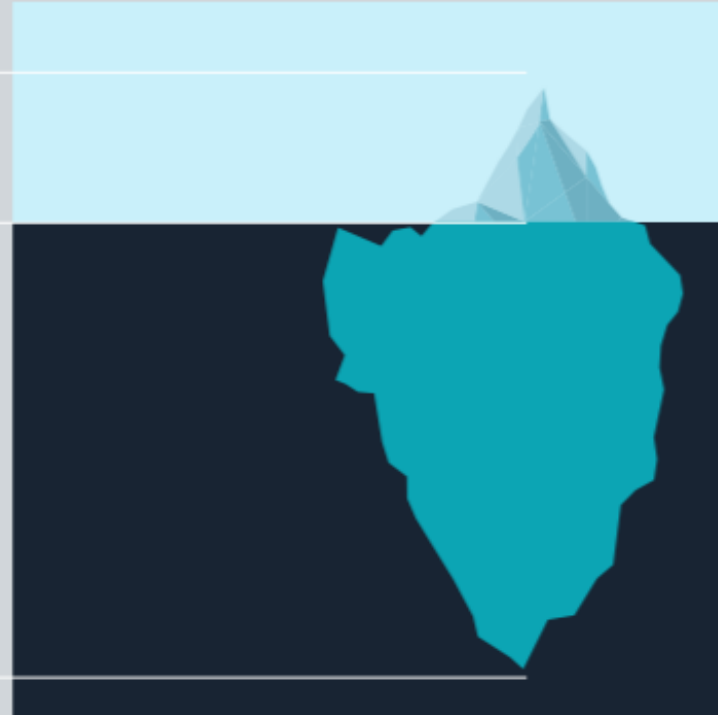
- While bridging the gap local government should be fully aware that there may be requirements of guidelines, procedures for accessing different investments. Local government should try to formulate those in the first few years and develop it as a milestone. Local government can take help from Federal government, Provincial government ,NGOs, INGOs in doing so.



THE MAJOR FUNDING REQUIREMENTS ARE NEITHER SEEN NOR ADDRESSED

CAPITAL
EXPENDITURE

ALL REQUIRED
OPERATING EXPENDITURE



Source:SWA ,financial handbook

Components of WaSH plan



Generation of investment as per resource requirement



Capital expenditures



Capital maintenance expenditures



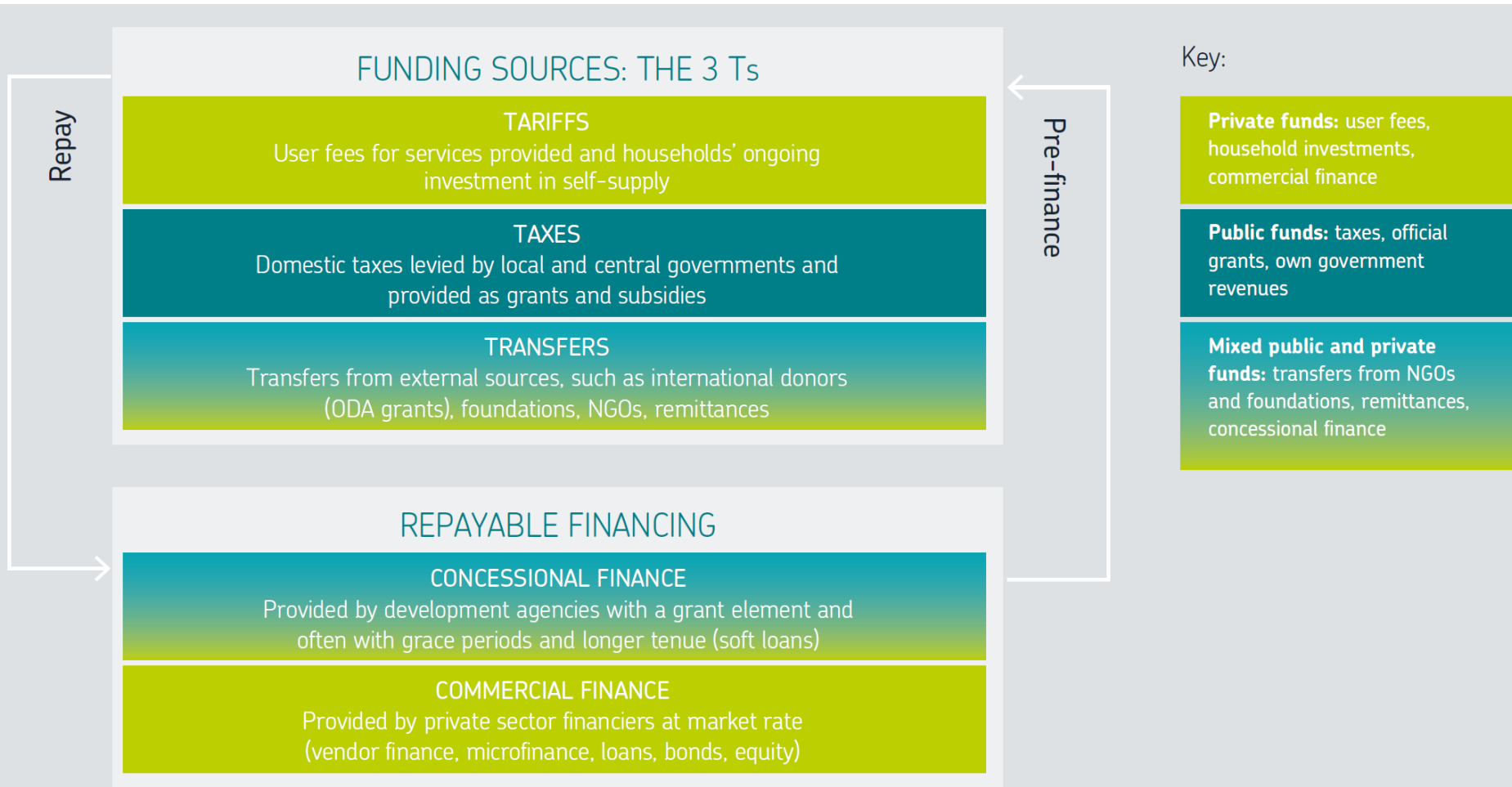
Operational Expenditure



Direct support

3T's

Funding and financing sources



Source: Adapted from World Bank⁽³⁶⁾

Guiding Principles

8. Monitoring, Evaluation and Reporting

- A monitoring, evaluation and learning (MEL) framework has been developed to provide comprehensive information on the reporting mechanisms needed by stakeholders to monitor the performance of the WASH delivery process. **The reporting system of WASH Plan should be capable to report in line with the national and international, mainly SDG 6.1 & 6.2, goals and commitments.**





So before planning we need to know what do the goals mean exactly?



All exposures and settings including households, schools, health facilities, workplaces, etc.



Safely managed Water service to all households and in institutions , previous 89% needs to be revisited

Universal



progressive reduction and elimination of inequalities between population subgroups



Planning should focus on tariff patterns and subsidies in various aspects to marginalized group

Equitable



sufficient water to meet domestic needs is reliably available close to home



In Nepals case one house one tap policy where all water needs (drinking,cooking and hygienic needs are met

Access



So before planning we need to know what do the goals mean exactly?



free from pathogens and elevated levels of toxic chemicals at all times



In Nepal's case we can focus on Coliform and Arsenic (Globally there is fluoride too *)

Safe



Payment for services does not present a barrier to access or prevent people meeting other basic human needs



Planning should focus on tariff patterns and subsidies in various aspects to marginalized group

Affordable



Water used for drinking, cooking, food preparation and personal hygiene



Suitable for use by men, women, girls and boys of all ages including people living with disabilities

Drinking water



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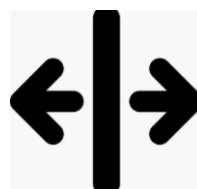


So before planning we need to know what do the goals mean exactly?



Access

facilities close to home that can be easily reached and used when needed



Adequate

A system which hygienically separates excreta from human contact as well as safe reuse/treatment of excreta in situ, or safe transport and treatment off-site



Equitable

progressive reduction and elimination of inequalities between population subgroups



Planning should focus on tariff patterns and subsidies in various aspects to marginalized group



Sanitation

Provision of facilities and services for safe management and disposal of human urine and feces



the conditions and practices that help maintain health and prevent spread of disease including handwashing, menstrual hygiene management and food hygiene



So before planning we need to know what do the goals mean exactly?



For all

Suitable for use by men, women, girls and boys of all ages including people living with disabilities



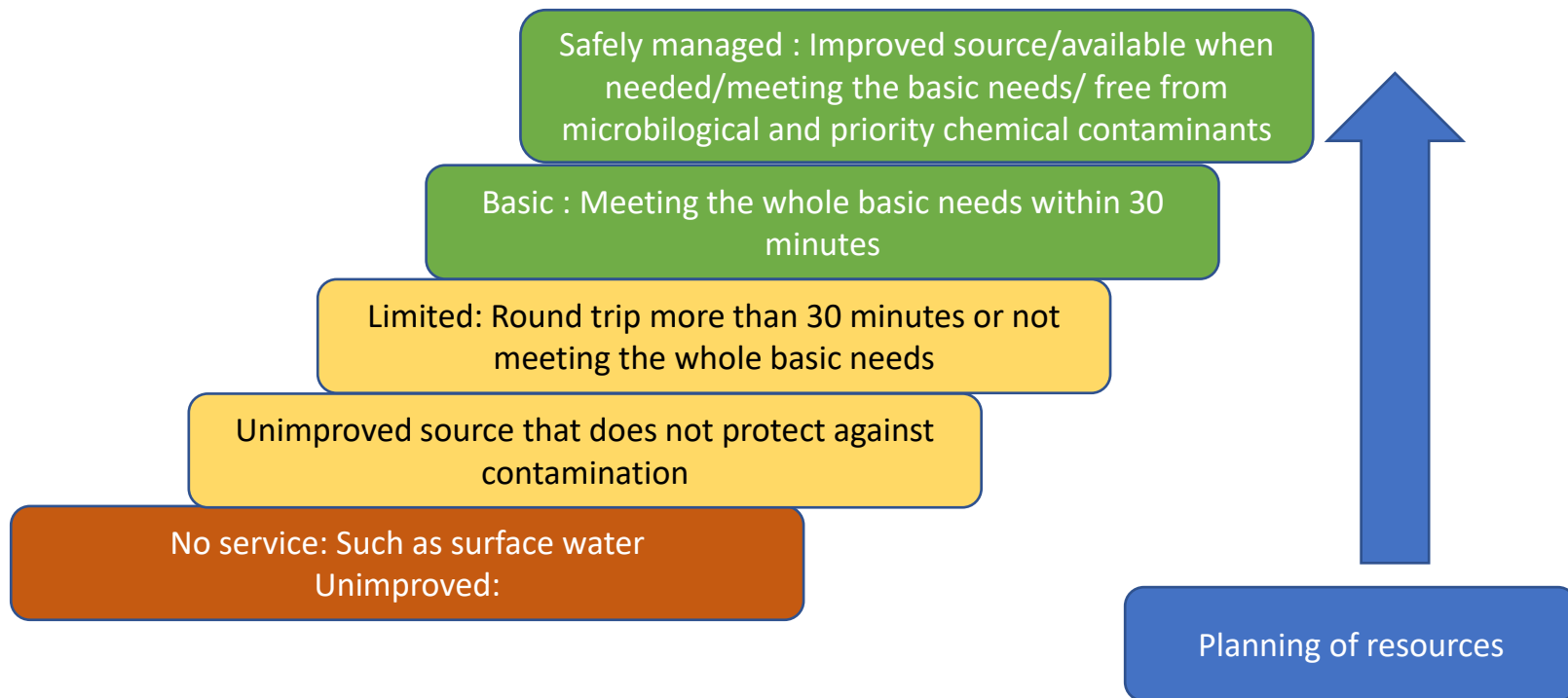
Paying special attention to the needs of women and girls

Reducing the burden of water collection/ hygiene needs with dignity/ special attention to women and vulnerable people in high use settings such as school /hospital etc.

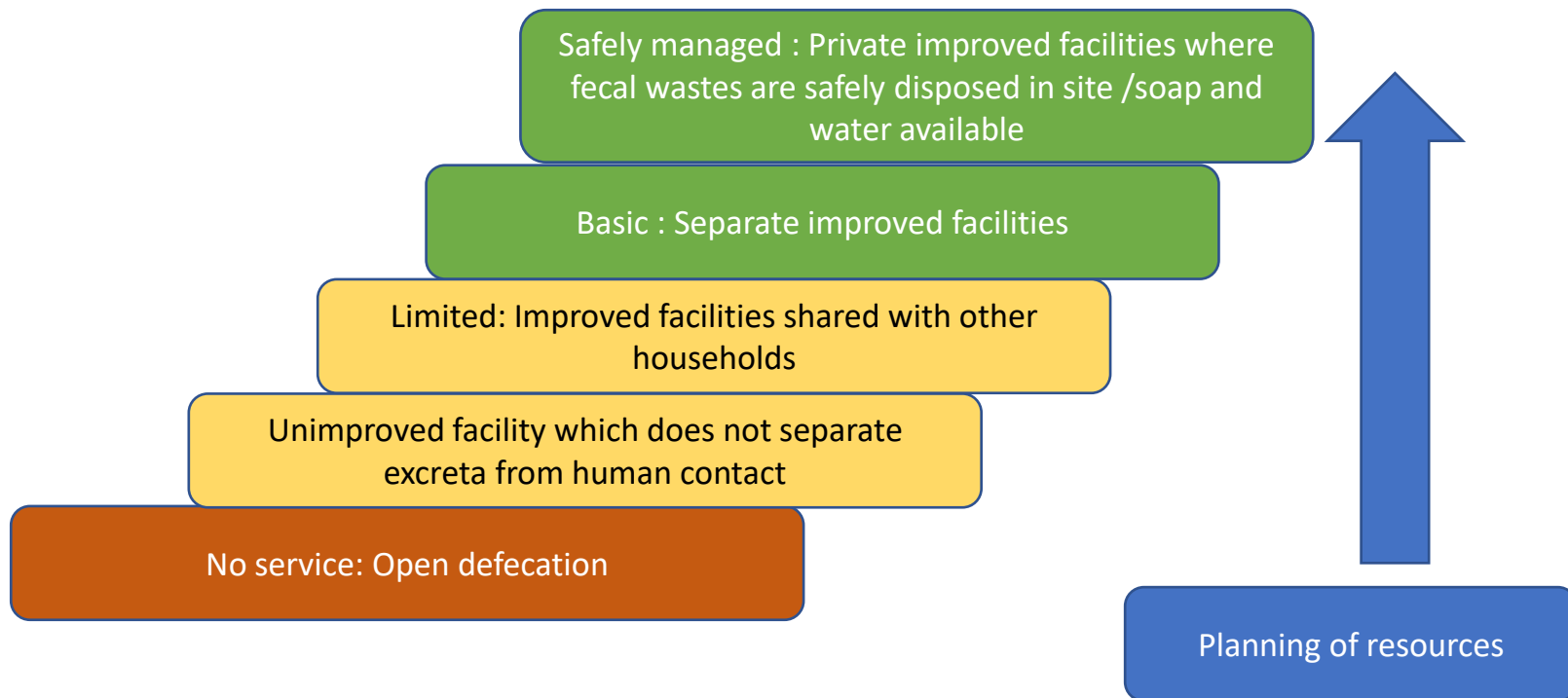


Implies attention to specific WASH needs found in 'special cases' including refugee camps, detention centers, mass gatherings and pilgrimages

Water Supply (Ladder of services)

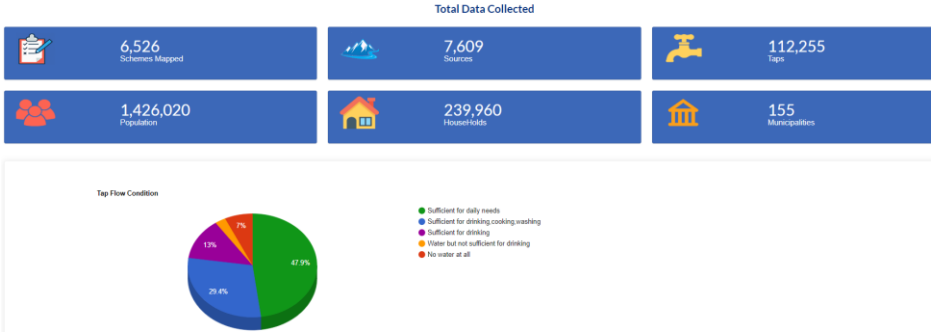


Sanitation & Hygiene (Ladder of services)



Components of WaSH plan

Profiling



Components of WaSH plan



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graph LR; A[Profiling] --> B[Goal setting];
```

The diagram illustrates the components of a WaSH plan. It features a large, light blue arrow pointing from left to right. Inside this arrow, there are two rounded rectangular boxes. The first box, on the left, is orange and contains the word 'Profiling' in white. The second box, on the right, is green and contains the words 'Goal setting' in white. Below the green box, there is a block of text providing context for the goal setting process.

Profiling

Goal setting

Road Map to SDG

5 Year plans and other national plans can be reference documents for local level
(Recent analysis tool as taken SDG as reference for minimum goal)

Components of WaSH plan



Profiling

Goal setting

Develop the
activities

Development of projects
and other activities

Components of WaSH plan



Profiling

Goal setting

Develop the
activities

Prioritization
of projects &
gap options

Setting the priorities short
term/medium term/long
term and options for
bridging the gap

How the MIS will be used? DSS for WASH UTILITIES

WASH Utilities

Utilities vision might be to cross 70 Number
in Functionality or sustainability
Or satisfying SDG criteria
Or being efficient after satisfying SDG
criteria



Indicators of MIS



Giving the Utilities Business plan as per their vision



How the MIS will be used? DSS /MIS for Local governments

Local governments

WaSH plan development



SDG reporting



Identifying the investment options



Identifying the Material requirements per year can help business development

How the MIS will be used? MIS for Federal & Provincial governments

Federal and Provincial governments

SDP revision /tracking



SDG Monitoring



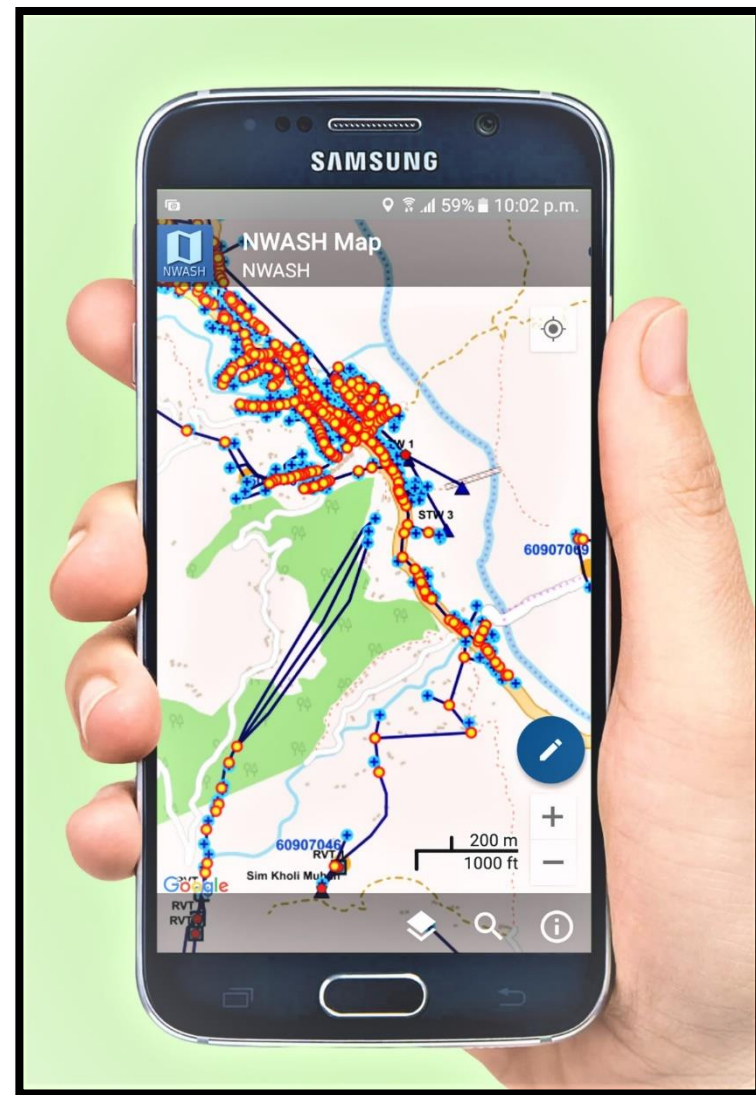
Identifying the investment options
Developing result based financing
Developing guidelines/policy etc.





NWASH

Web based & GIS enabled MIS



NWASH WEBSITE

<http://nwash.mows.gov.np/>

NWASH APPLICATIONS

Apps



NWASH
Softwel



NWASH Inventory
Softwel
★★★★★



NWASH Household
Softwel



NWASH Project Sus
Softwel



NWASH Unserved P
Softwel



NWASH Community
Softwel



NWASH Map
Softwel



NWASH Drainage
Softwel



NWASH School Que
Softwel



NWASH Grievance
Softwel



NWASH Health Car
Softwel



NWASH Solid Wast
Softwel



NWASH Condition
Softwel

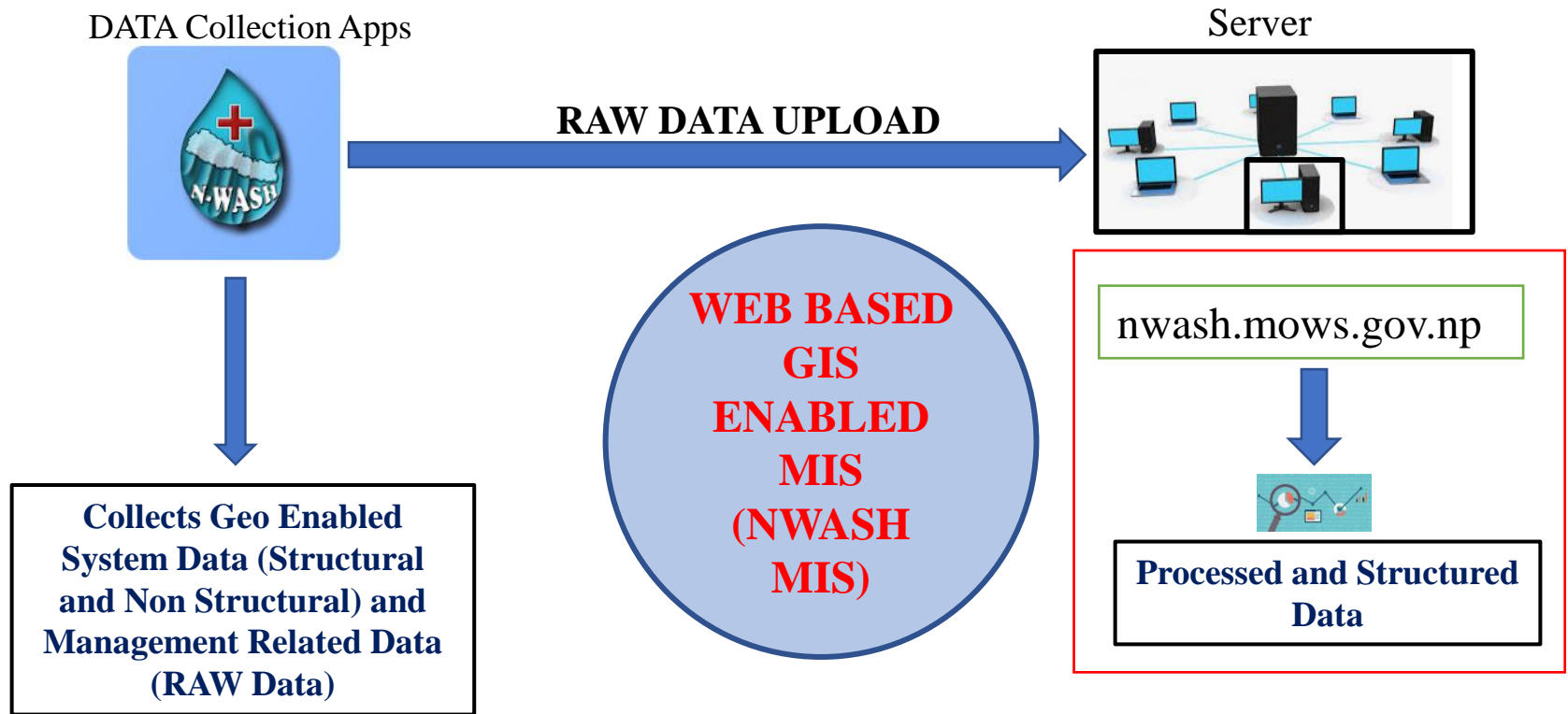


NWASH Institution
Softwel



NWASH Public Toile
Softwel

PROCESS INVOLVED



National level Progress

Water Supply system

13,673

Community Sanitation

3,476

WASH in SCHOOL

13,684

WASH in Household

1,079,289



Public Place

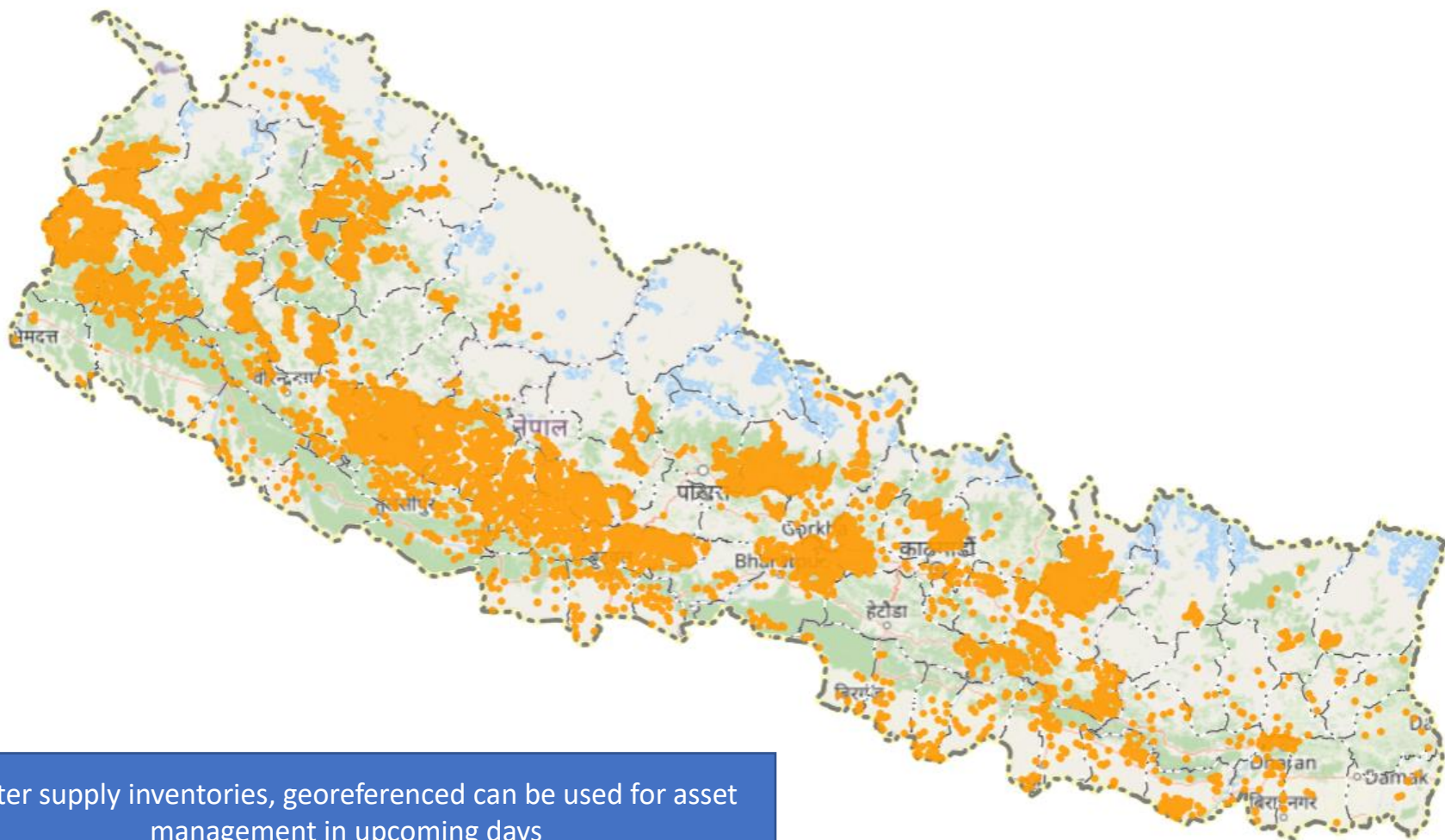
2,152

WASH in HCF

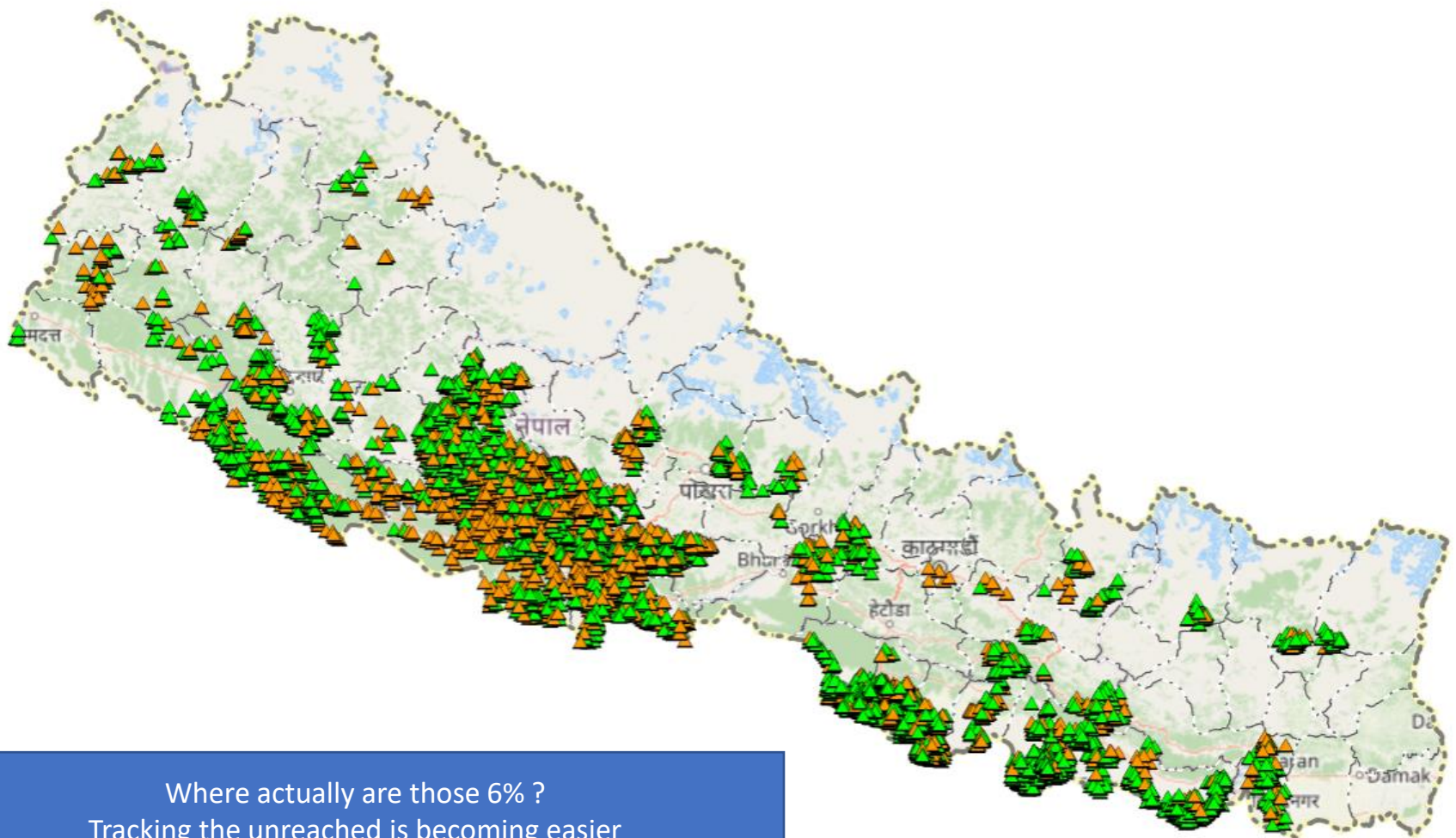
3,499

Unserved Community

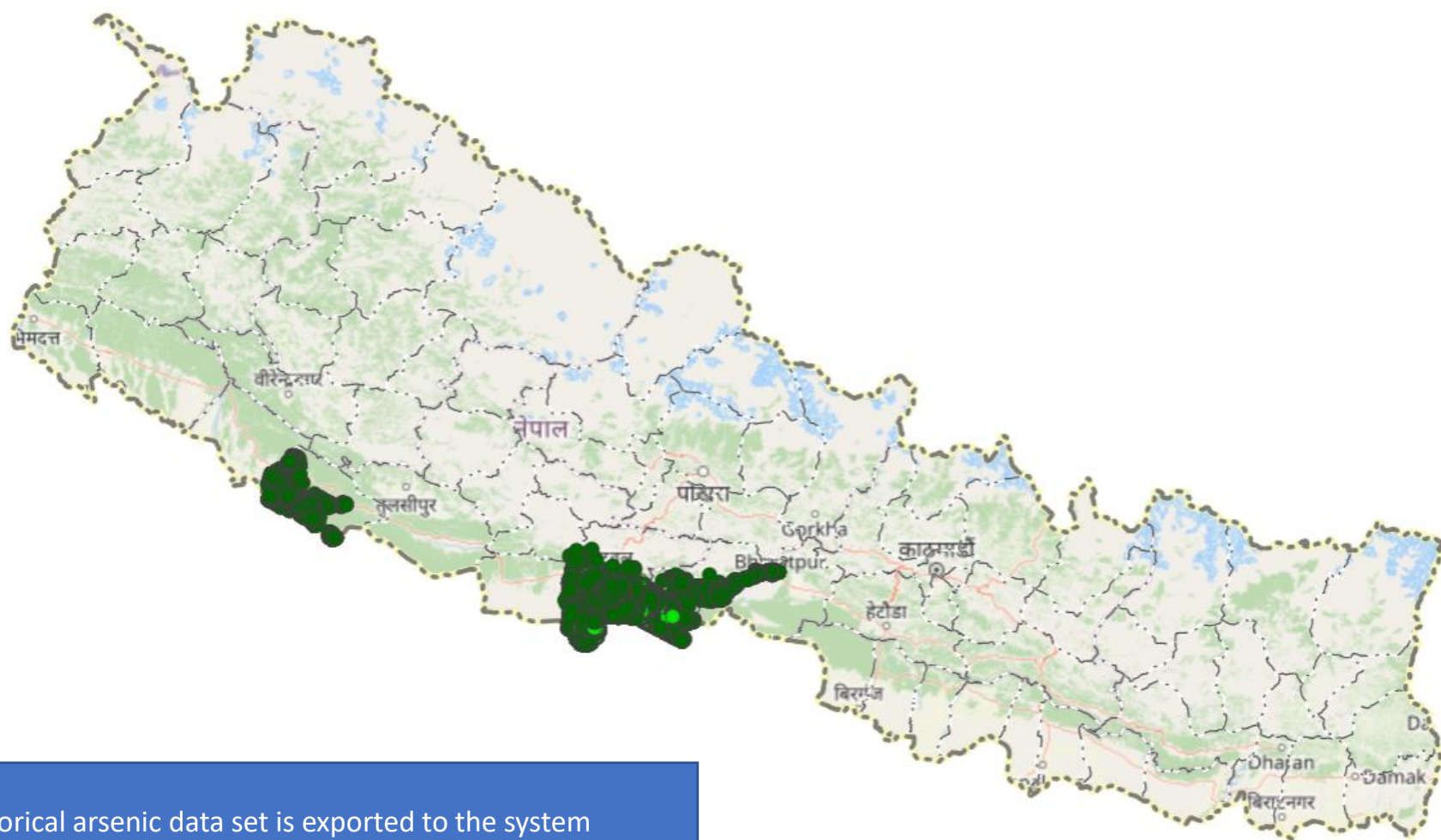
8,132



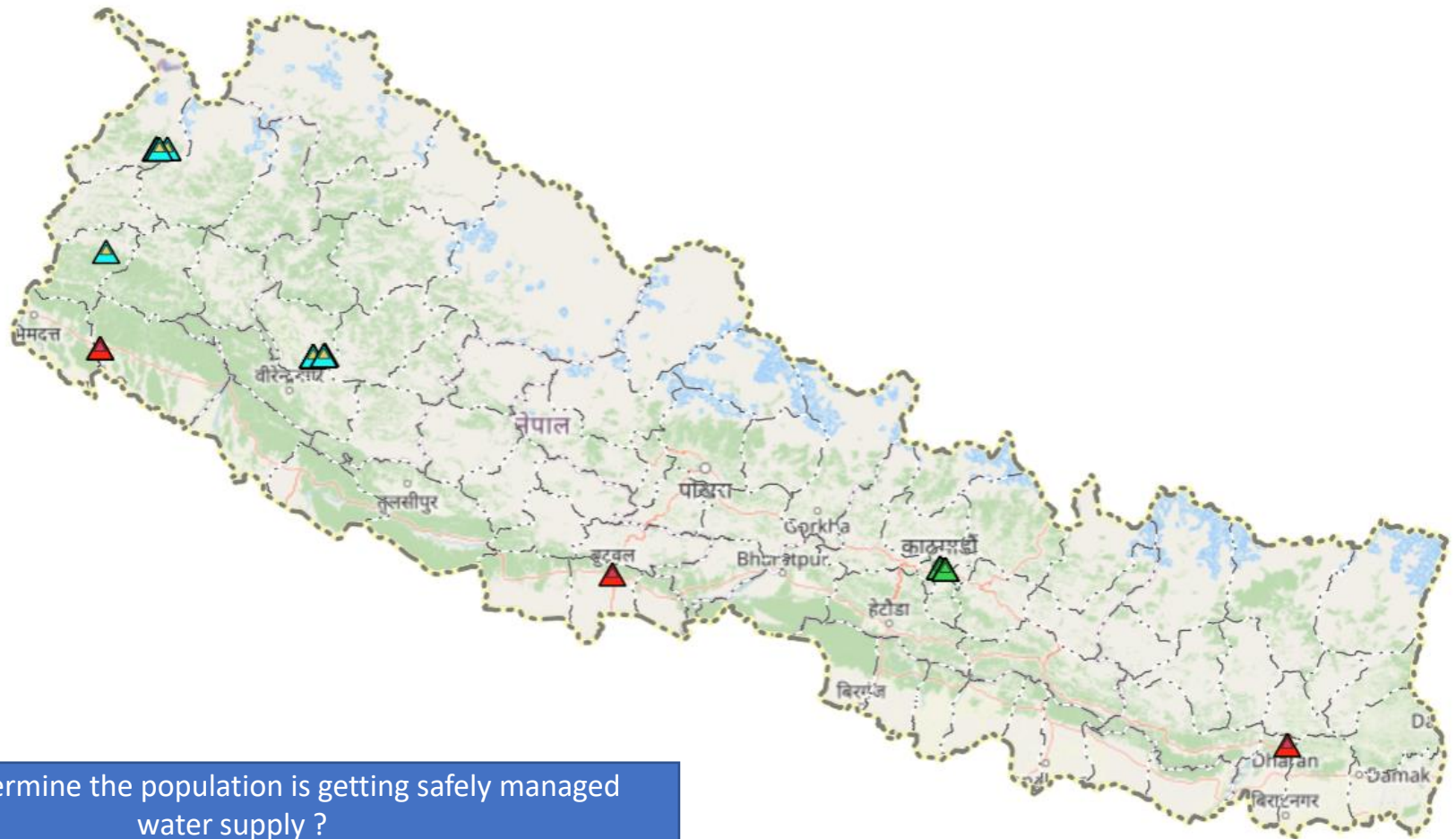
Water supply inventories, georeferenced can be used for asset management in upcoming days



Where actually are those 6% ?
Tracking the unreachable is becoming easier

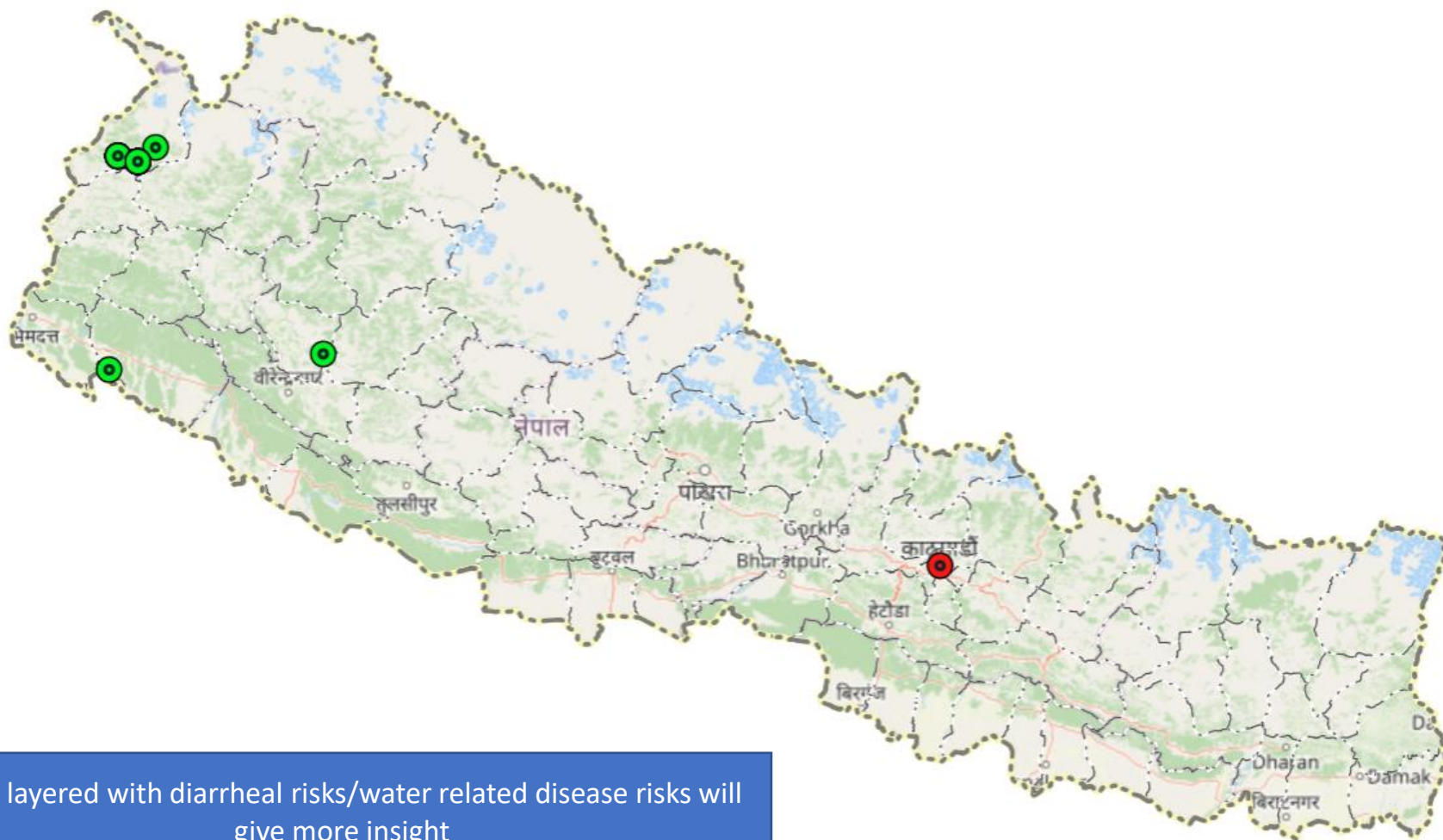


Historical arsenic data set is exported to the system



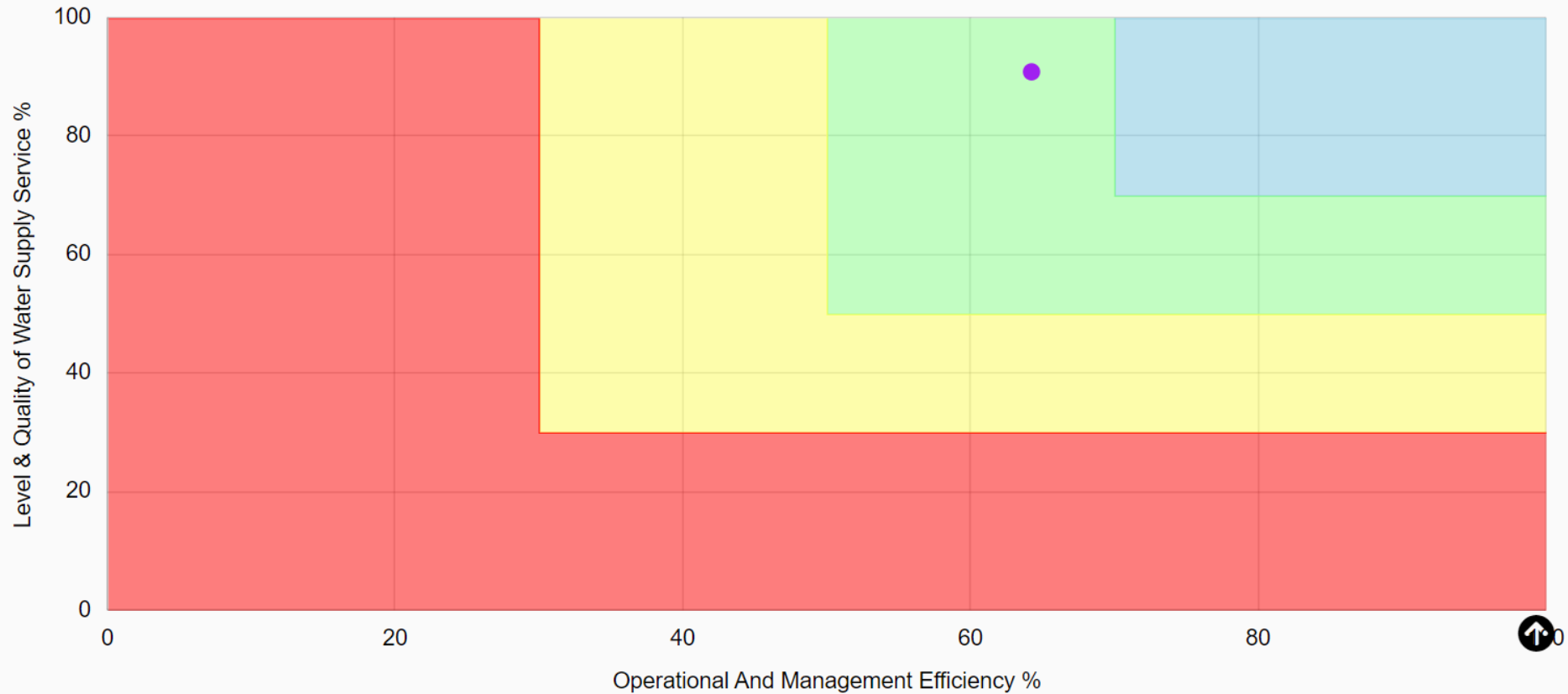
How to determine the population is getting safely managed water supply ?

This is day to day residual chlorine data



Data layered with diarrheal risks/water related disease risks will give more insight

Career Path and Categorization of Water Supply Service Providers(2078/79)

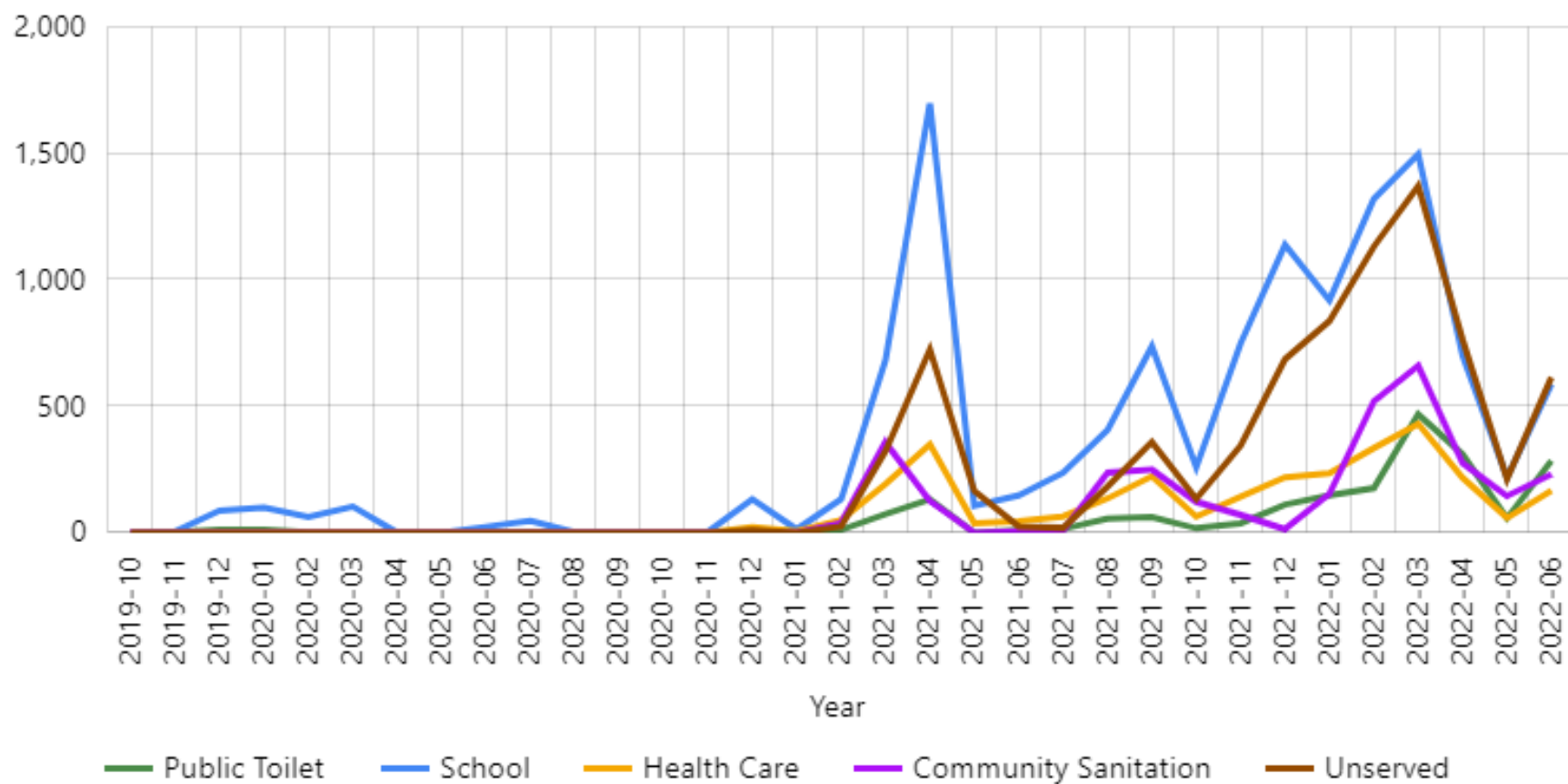


How to determine which utility requires what kind of support to reach SDG's (KPI based tracking)

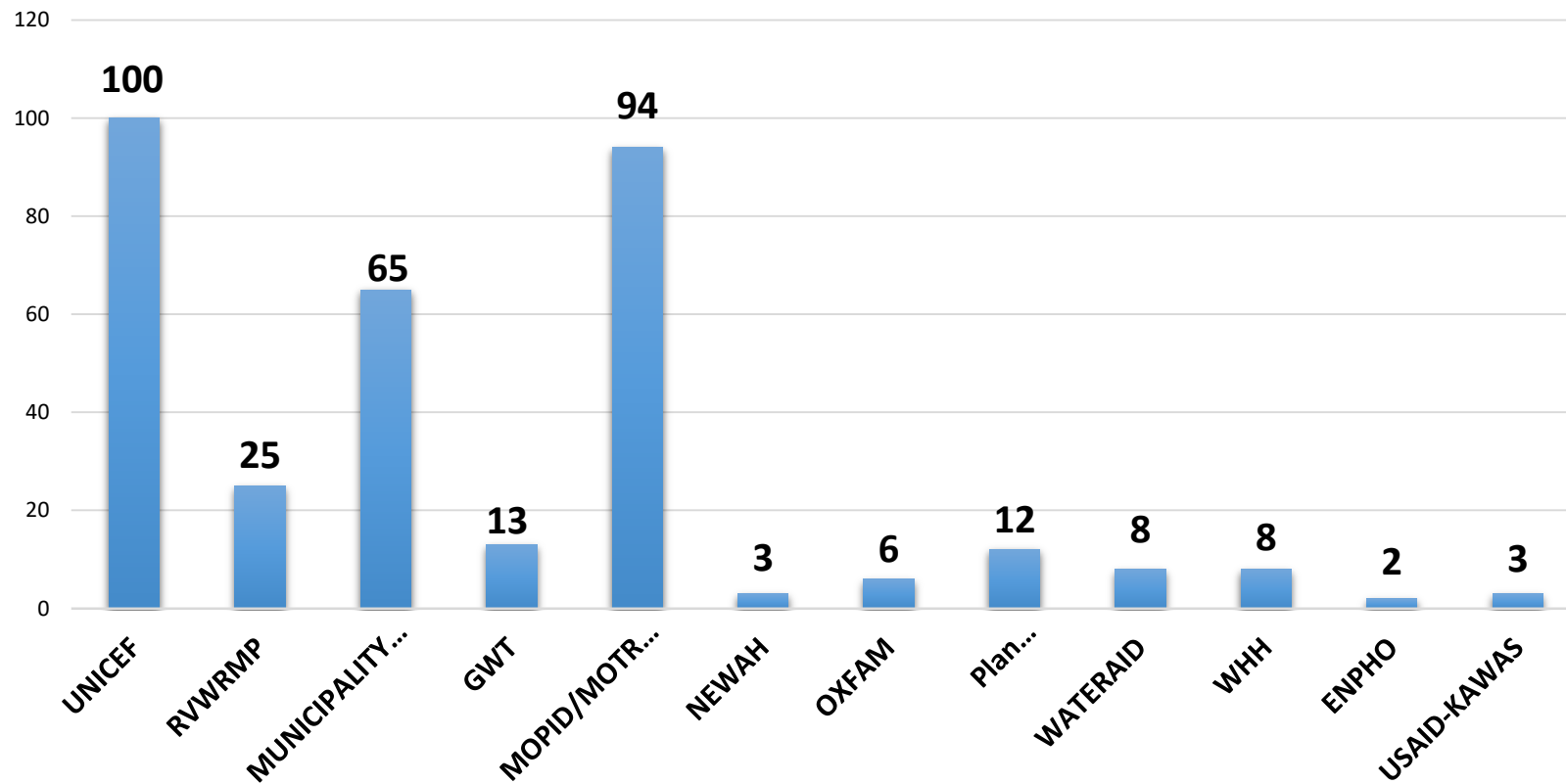
This initiative is still
evolvingwe can
grow together



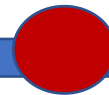
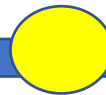
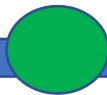
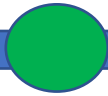
Data collection Progress



AGENCY COVERAGE



MIS TIMELINE AND COLLABORATORS INVOLVED



FUNCTIONALITY & SUSTAINABILITY M&E



WASH PLAN/SDG 6.1 AND 6.2 REPORTING/SERVER SUPPORT TO GOVERNMENT/HR SUPPORT TO MIS UNIT



WATER QUALITY HR SUPPORT TO MIS UNIT/TRACKFIN



UTILITY CAREER PATH/BUSINESS PLAN OF UTILITIES/TARIFF CALCULATOR



MARKET DASHBOARD CWIS/SANITATION BENCHMARKING GOVERNANCE ASSESSMENT

MIS- the success story

- Sectoral acceptance/recognition
- Praised in SWA (Demonstrated to SWA,Cambodia government)
- Presented with JMP and GLAAS team
- Presented in Climate forums
- Enumerators trained virtually

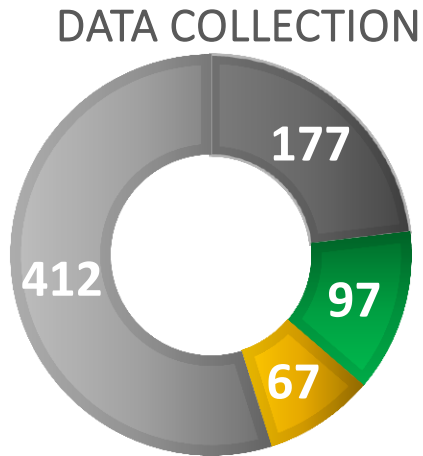


PROGRESS STATUS

■ Complete
d

■ Ongoing

■ Agency
Mobilized
but not
initiated



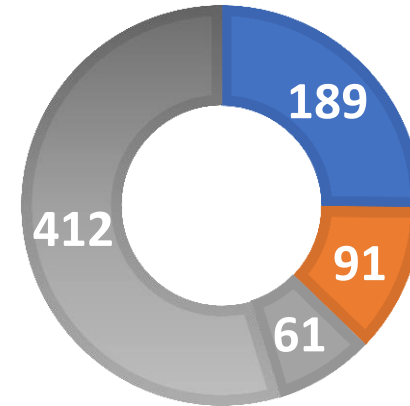
WASH PLAN

■ Not
started

■ Ongoing

■ Completed

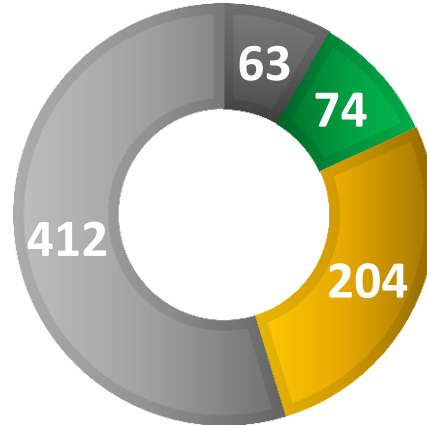
■ Unregister
ed



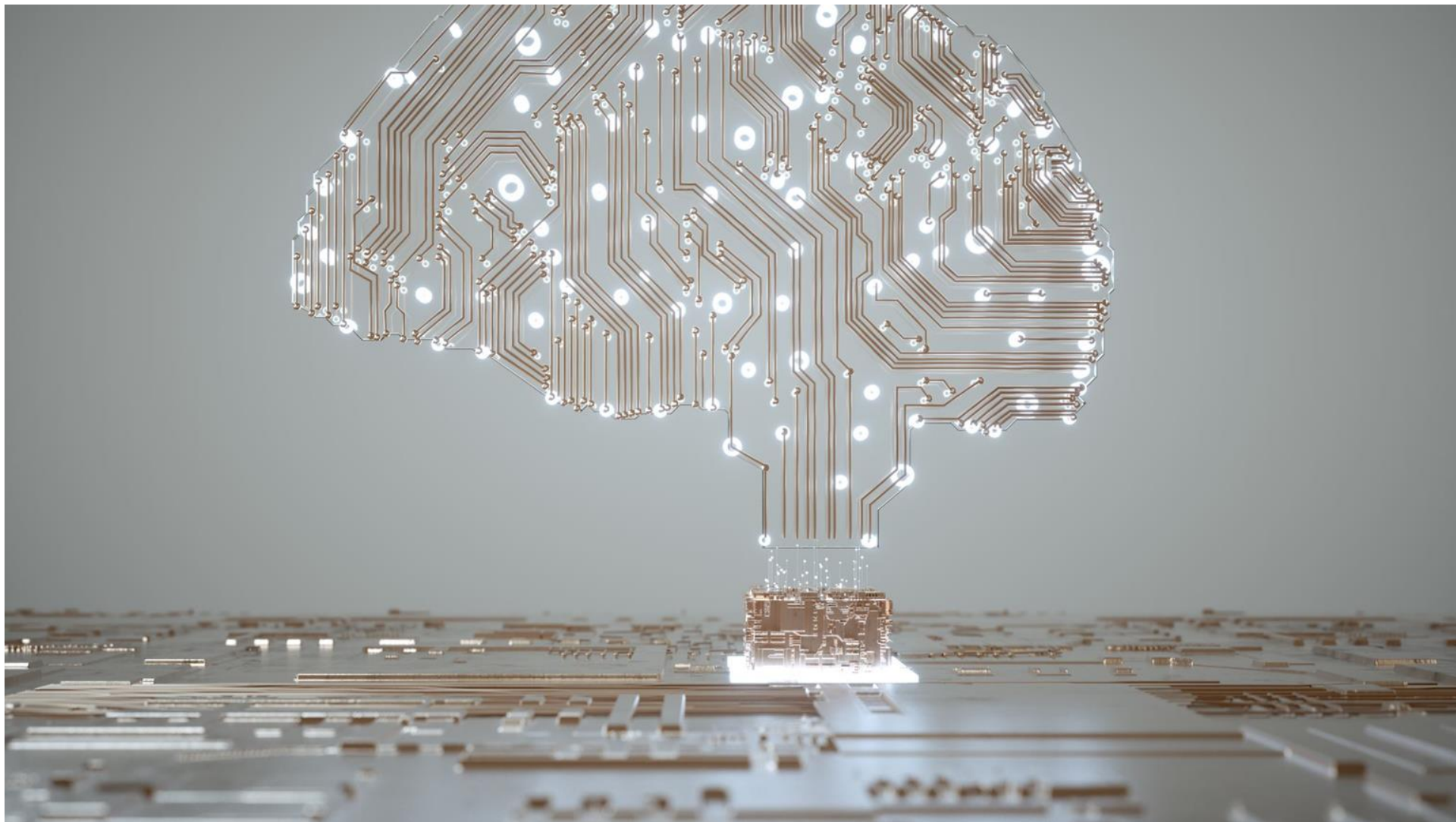
PRIORTIZATION

■ Completed

■ Ongoing



NWASH-MIS , Optimization possibilities with Artificial Intelligence/ Machine Learning



We checked the possibility

And the results are encouraging



**Integrating AI into the asset
management of rural water supply
schemes in Nepal: Discovery Report**



Problems



Mass data
collection/

Heterogeneous
enumerators/
Very difficult to
validate and
find the data
risk



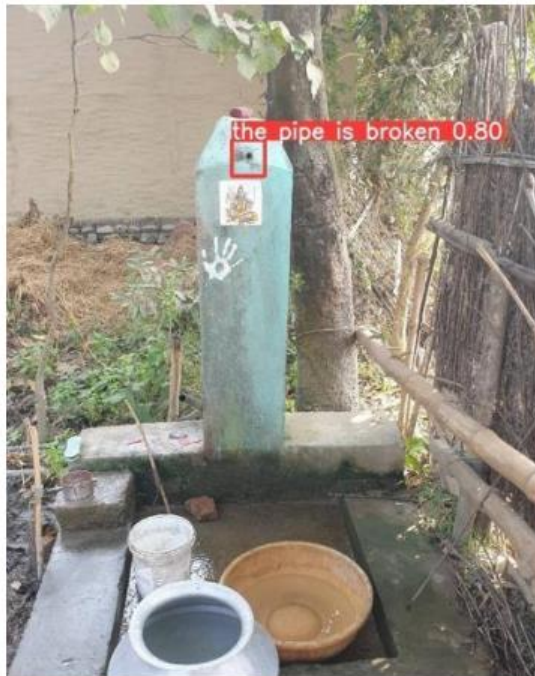
Perception
Based



Every
stakeholder
has
different
data needs



Left - Tap identified by our algorithm. Right - Tap and Mounting Post as identified by our model.



Left - Corrosion identified by our model. Right - Broken tap identified by our model/

**Maintenance condition mentioned
in NWASH**

GOOD

MINOR REPAIR

MAJOR REPAIR

REHABILITATION

Based upon perception

Question that was not asked
during the survey and has
importance such as :

Sanitary Condition



Question that was not asked during the survey and has importance such as

Whether the tap is child friendly or not? Whether it is easily accessible to disabled people or not?



Q: शौचालयको भित्ता केले बनेको छ?

- ढुंगा
- बासको टाटी
- ईँटा/ब्लक
- पाल/कपडा/बोरा
- अन्य

Translated:

What is the toilet wall made of?

- Stone
 - Bamboo
 - Bricks/Blocks
 - Tents/clothes/sacks
 - Other
-

Thank you