

# NEPAL

## The Water, Sanitation and Hygiene Gender Equality Measure (WASH-GEM)

Summary Brief

January 2025

### Background:

There are important **connections between** water, sanitation and hygiene (**WASH**) and gender **equality**, social **inclusion** and climate **resilience**.

Different types of WASH interventions will have different types of connection for different types of people. One way to understand these connections is using quantitative measurement tools like the WASH-GEM. The WASH-GEM is a 17-measure collection of WASH and social scales to track changes across five domains: *Resources, Agency, Critical Consciousness, Structures* and *Wellbeing*. This work has been done in Nepal, Laos PDR and Bhutan.



**Nepal Locations:** Two rural municipalities of DUNGESHWAR (Dailekh) and RAMNAGAR (Sarlahi).

**Respondents:** 1 man and 1 woman from ~200 households; approximately 30% from Dailekh and 70% from Sarlahi.

**Timing:** 2020, 2022 and 2024. The 2022 and 2024 respondents were mostly same individuals.

**Limitations:** The results are not generalizable to the whole population, but give us an indication of the types of impacts in DUNGESHWAR and RAMNAGAR.

The WASH-GEM comprises five domains made up of 17 themes. A parallel research activity has aimed to design and continuously strengthen the quality of the themes. The quality of the themes currently range from fair (-) to very strong (+++). The WASH-GEM domains are **Resources (+Resilience)**, **Agency**, **Critical Consciousness**, **Structures** and **Wellbeing**.

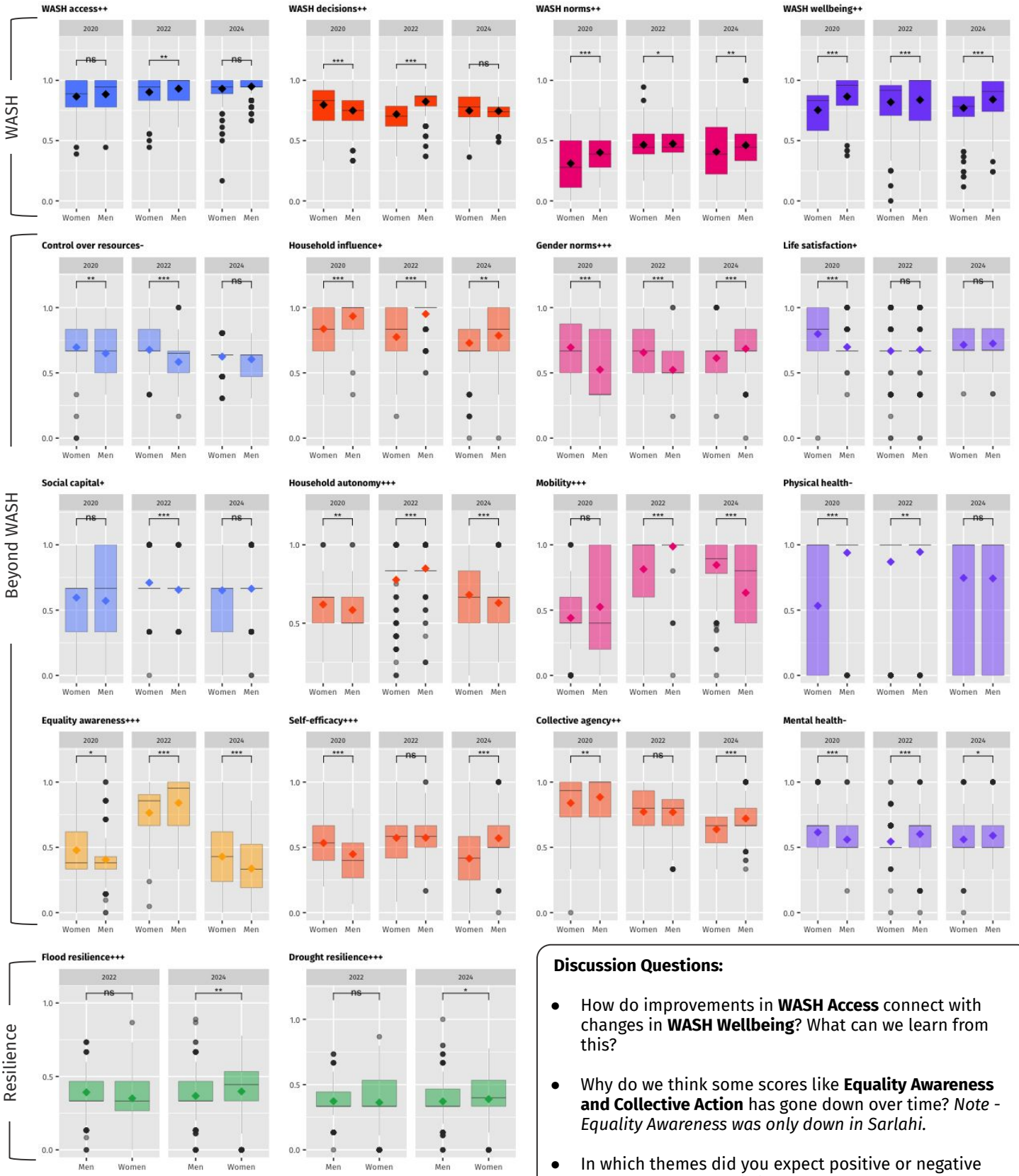
	RESOURCES "I have access to..."	AGENCY "I feel able to..."	CRITICAL CONSCIOUSNESS "I believe..."	STRUCTURES "The norm in my community is..."	WELLBEING "I feel..."
WASH	<b>WASH Access ++</b> access to and use of water, sanitation and hygiene	<b>WASH Decisions ++</b> participating in WASH related decision-making		<b>WASH Norms ++</b> perception of who should play different WASH roles	<b>WASH Wellbeing ++</b> feelings of safety, privacy and non-stress related to WASH
Beyond WASH	<b>Control over Resources -</b> control over one's own time and financial resources	<b>Household Influence +</b> ability to shape goals for the entire household	<b>Equality Awareness +++</b> personal beliefs about gender equality	<b>Gender Norms +++</b> perception of who should play different societal roles	<b>Life Satisfaction +</b> subjective feelings of satisfaction with one's own life
	<b>Social Capital +</b> non-financial benefits of personal networks	<b>Household Autonomy +++</b> motivations to action are voluntary and authentic		<b>Mobility +++</b> freedom to move and travel due to societal norms	<b>Physical Health -</b> absence of injury or illness that prevents daily activities
	<b>Climate Resilience +++</b> subjective perceptions of resilience to climatic events <small>The resilience theme was added in 2022.</small>	<b>Self-efficacy +++</b> belief in one's own capacity to set goals and act on them	<b>Collective Action ++</b> opportunities to work together for positive change		<b>Mental Health -</b> subjective feelings of happiness and low anxiety

Measure quality (robustness): +++ very strong, ++ strong, + moderate, - fair

# Nepal Results:

This collection of box plots shows the changes in the WASH-GEM scores between 2020 and 2024 for the respondents in Dungeshwar and Ramnagar. The graphs also include statistical significance notations for the difference between women's and men's scores. For simplicity, the graphs do not show differences in different levels of WASH improvements, or WASH involvement. They also do not disaggregate the results by district or by other socio-economic characteristics.

WASH-GEM domains: **Resources (+Resilience)**, **Agency**, **Critical Consciousness**, **Structures**, and **Wellbeing**



Resilience only investigated in 2022 and 2024.

## Discussion Questions:

- How do improvements in **WASH Access** connect with changes in **WASH Wellbeing**? What can we learn from this?
- Why do we think some scores like **Equality Awareness** and **Collective Action** has gone down over time? Note - Equality Awareness was only down in Sarlahi.
- In which themes did you expect positive or negative trends? Do we see this in the results?

# Nepal Findings:

The impacts in **Dungeshwar and Ramnagar** are strongest across the three countries in the study, with the largest impacts for individuals who were more involved in WASH activities.

## Recent WASH Improvements

### 1. WASH improvements alone are not enough to impact equality, inclusion and resilience in Dungeshwar and Ramnagar

- Having recent household WASH improvements (water system, latrine or hygiene facility construction, repair or upgrading) was not correlated with higher scores or to greater increases in no increases in scores that would demonstrate increases in gender equality. The people who reported recent household WASH improvements were already those with high levels of baseline **WASH Access** and **WASH Wellbeing**.
- **WASH Access** (access to and use of water, sanitation and hygiene) scores were already very high at the baseline, but did improve from 2020 to 2024, with no differences between women and men scores.

## Involvement in WASH Activities

### 2. There are positive correlations between WASH activity involvement and equality, inclusion and resilience in Dungeshwar and Ramnagar

- Higher involvement in WASH activities (discussions, monitoring, celebrations, skills, income, committees and mobilization) matched with higher scores for all 17 WASH-GEM themes.
- People who were more involved in WASH activities had higher scores of more equality the domains of Agency and Critical Consciousness an in particular in the themes of **Equality Awareness** (personal beliefs about equality of women and men), **Self-Efficacy** (belief in one's own capacity to set goals and act on them) and **Collective Action** (working together to make positive change).

### 3. There are more positive changes in equality and inclusion over time for those actively involved in WASH activities in Dungeshwar and Ramnagar

- Not all scores increased over time, but people involved in certain WASH activities tended to have a significantly greater increases between 2022 and 2024 in their **Equality Awareness**, **Self-Efficacy**, **WASH Norms** (perception of who should play different WASH roles), **Gender Norms** (perception of who should play different societal roles), and **Mobility** (freedom to move and travel in community) scores.
- Men who were actively involved tended to have more increases in their scores than women who were actively involved in themes such as **Self-Efficacy** and **Gender Norms**.

## Marginalized Community Members

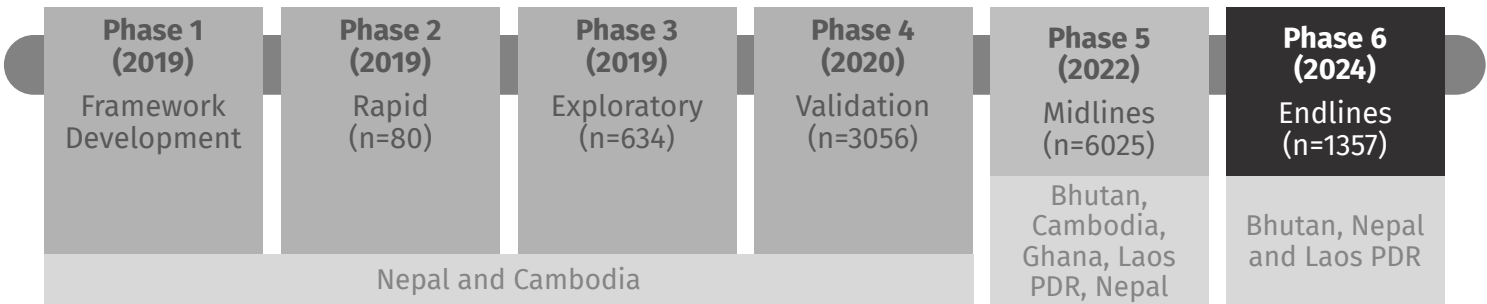
### 4. The most marginalized benefited more than others in the Resources and Structures domains, both for those who were and were not actively involved in WASH activities in Dungeshwar and Ramnagar

- Respondents from households which included a person with a **disability** saw stronger improvements in **WASH Access**, **Social Capital** (non-financial benefits of personal networks), **Mobility**, and **WASH Wellbeing** (feelings of safety, privacy and non-stress in accessing and using WASH facilities) than households that did not include a person with a disability.
- Those **poorest** (those in the lowest wealth quintile based on assets ownership) saw stronger improvements in **WASH Norms** as compared to other quintiles)
- **Dalit** respondents, and in particular those actively involved in the project, had stronger improvements in **WASH Norms**, **Gender Norms** and **Mobility**.

# Research Project:

This research was Phase 6 of a multi-step process to develop a measurement approach to explore equality, inclusion and resilience outcomes in WASH programming. The research was a partnership between the Institute for Sustainable Futures at the University of Technology Sydney and SNV programming in Asia. The project aimed to:

1. **Identify** which outcomes would be most likely from WASH programs
2. **Develop** quantitative tools to measure these outcomes
3. **Test** the connections between outcomes for different types of people in different types of WASH programs



**Approach:** Data preparation and analysis was conducted in five parts across all 17 WASH-GEM themes.

1. **Propensity Score Matching (PSM)** created a pseudo matched dataset. PSM helped to create a data-driven group of people to follow over time in the cases we didn't have the exact same respondents.
2. **Descriptive analysis** of socio-economic variables 2020-2024. This helped to understand if our sampling worked.
3. **Gender and socio-economic differences** through t-tests comparing different types of people. This helped to understand the differences in women's and men's scores and other socio-economic factors such as wealth, age, education, and ethnicity.
4. Multivariate **Difference-in-Differences (DiD)** and **Differentiated Effects (DDD)** regressions. These calculations use a treatment and control group approach to calculate impact over time and start to untangle causation. This process explored the impact of WASH involvement and WASH improvements over time by gender.
5. Pearson **correlation coefficients** comparing WASH, inclusion, equality and resilience. Correlations explore the mutual connections of two variables - to see how one variable is connected to another. They don't describe causation. This helped to see if people with higher scores in one theme - also had higher scores in another.

**Recommendations:** Future WASH programs in Nepal can benefit from understanding the strength of connections between active and purposeful forms of involvement to shape equality, inclusion and resilience.

- Continue to promote **multiple forms of meaningful engagement** in WASH activities in a transformative way to improve *Agency, Critical Consciousness* and *Structures* for all - including women, men and the marginalized.
- Continue to **support marginalized households to access WASH services** which can lead to improvements in *Resources and Structures*. This includes the poorest, dalit and households with a disabled member.

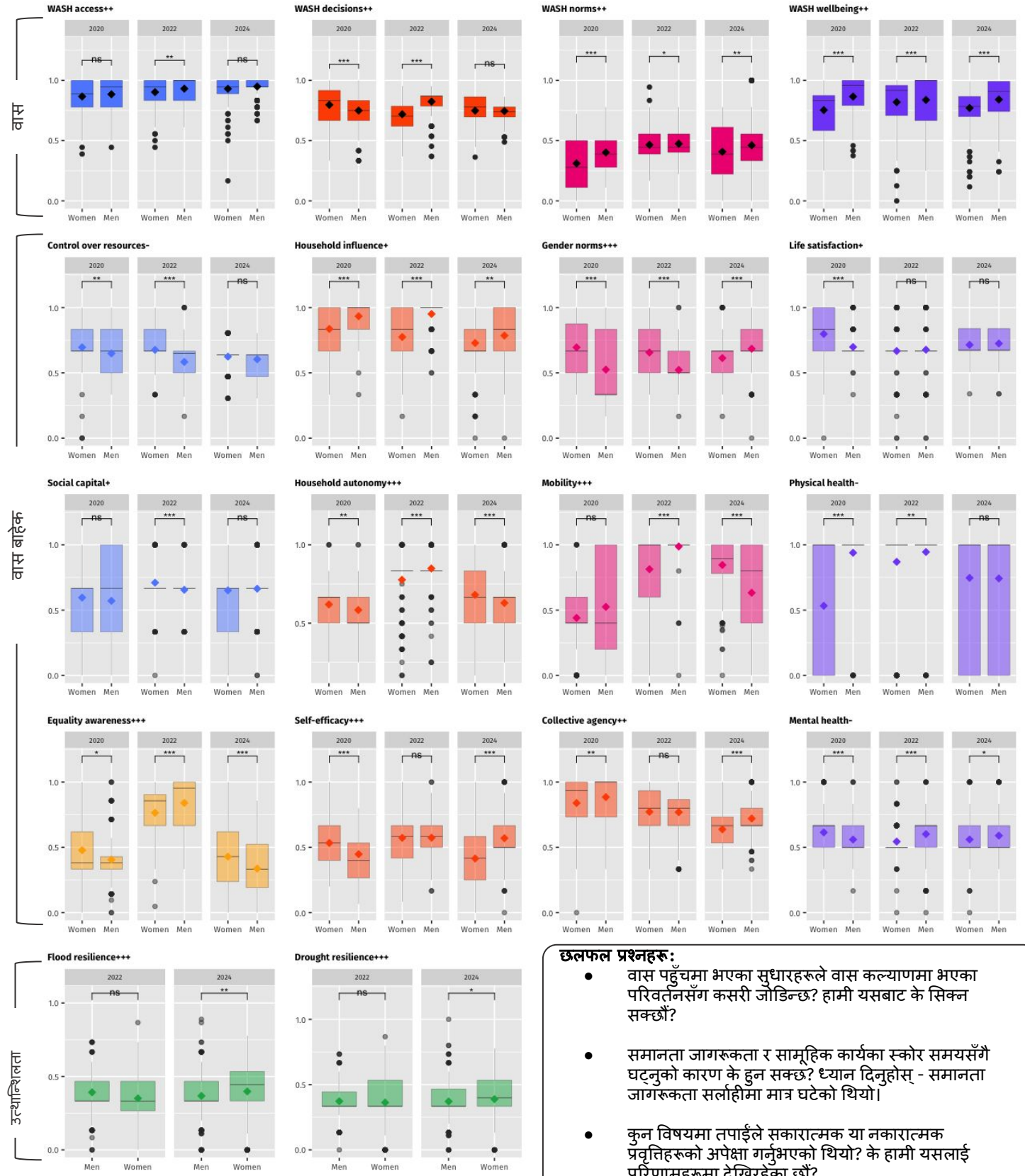




# नेपालको नतिजा:

यो बक्स प्लटको सङ्ग्रहले २०२० र २०२४ बीच डुंगेश्वर र रामनगरका उत्तरदाताहरूका वास-जेम स्कोरमा भएका परिवर्तनहरूलाई देखाउँछ। ग्राफहरूमा महिलाहरू र पुरुषहरूका स्कोर बीचको भिन्नताका लागि सांख्यिकीय महत्त्वका सङ्केतहरू पनि दिइएको छ। साधारणताका लागि, यी ग्राफहरूले वास सुधारका विभिन्न स्तरहरू वा वास संलग्नताको भिन्नताहरूलाई देखाउँदैनन्। साथै, यसले परिणामहरूलाई जिल्ला वा अन्य सामाजिक-आर्थिक विशेषताहरूको आधारमा पनि विभाजन गरेको छैन।

वास-जेमका डोमेनहरू **स्रोत/साधनहरू (+उत्थान्शिलता)**, **सक्षमता**, **सचेतना**, **समाजिक संरचना/नियम** र **कल्याण** हुन्।



उत्थान्शिलता केवल २०२२ र २०२४ मा अध्ययन गरिएको हो।

**छलफल प्रश्नहरू:**

- वास पहुँचमा भएका सुधारहरूले वास कल्याणमा भएका परिवर्तनसँग कसरी जोडिन्छ? हामी यसबाट के सिक्न सक्छौं?
- समानता जागरूकता र सामूहिक कार्यका स्कोर समयसँगै घट्नुको कारण के हुन सक्छ? ध्यान दिनुहोस् - समानता जागरूकता सर्लाहीमा मात्र घटेको थियो।
- कुन विषयमा तपाईंले सकारात्मक या नकारात्मक प्रवृत्तिहरूको अपेक्षा गर्नुभएको थियो? के हामी यसलाई परिणामहरूमा देखिरहेका छौं?

केही वास-जेम मापदण्डहरू अन्य भन्दा बढी सटीक छन्। मापको दृढता: +++ अत्यन्त बलियो, ++ बलियो, + मध्यम, - निष्पक्ष। पुरुष र महिलाको स्कोर बीचको भिन्नता t-tests द्वारा गणना गरिएको छ। महत्त्वका स्तरहरू: p<0.001 “; p<0.01 “, p<0.05 “, p<0.1 “, p>0.1 ‘ns’ (महत्त्वपूर्ण छैन)।

# नेपालका निष्कर्षहरूः

डुङ्गेश्वर र रामनगरका प्रभाव अध्ययनमा समावेश तीन देशहरूमा सबैभन्दा बलिया छन्, र वास क्रियाकलापमा बढी संलग्न व्यक्तिहरूमा सबैभन्दा ठूलो प्रभाव देखिन्छ।

## हालका वास सुधारहरू

1. डुङ्गेश्वर र रामनगरमा समानता, समावेशीकरण र उत्थान्शिलतालाई प्रभाव पार्न वास सुधारहरू मात्र पर्याप्त छैनन्।
  - हालका घरायसी वास सुधार (जस्तै पानी प्रणाली, शौचालय, वा सरसफाइ सुविधाहरूको निर्माण, मर्मत, वा सुधार) ले लैङ्गिक समानतामा वृद्धि वा उच्च स्कोरसँग कुनै सम्बन्ध देखाएन। यी सुधारको रिपोर्ट गर्ने व्यक्तिहरूले सुरुमा नै वास पहुँच र वास कल्याणमा उच्च स्कोर प्राप्त गरेका थिए।
  - वास पहुँच (पानी, सरसफाइ र स्वच्छता प्रयोग र पहुँच) का अंकहरू पहिले नै धेरै उच्च थिए, तर २०२० देखि २०२४ सम्म सुधार भएको छ, र महिला र पुरुषका अंकहरूमा कुनै भिन्नता थिएन।

## वास क्रियाकलापमा संलग्नता

2. डुङ्गेश्वर र रामनगरमा वास गतिविधिको संलग्नता र समानता, समावेशीकरण र उत्थान्शिलताबीच सकारात्मक सम्बन्धहरू छन्।
  - वास क्रियाकलापमा बढी संलग्नता (जस्तै छलफल, अनुगमन, उत्सव, सीप, आम्दानी, समिति र परिचालन) ले वास-जेमका सबै १७ विषयहरूमा उच्च अंक ल्यायो।
  - वास क्रियाकलापमा बढी संलग्न व्यक्तिहरूले सक्षमता र सचेतनाका क्षेत्रमा विशेष गरी लैङ्गिक समानता सम्बन्धी जागरूकता (महिला र पुरुषको समानता बारेको व्यक्तिगत विश्वास), आत्म-क्षमताबोध (आफ्नो लक्ष्य निर्धारण र तिनमा क्रियाशील हुने विश्वास) र सामूहिक क्रियाकलाप (सकारात्मक परिवर्तन ल्याउन सँगै काम गर्ने) जस्ता विषयहरूमा बढी समानताको अंक प्राप्त गरे।
3. डुङ्गेश्वर र रामनगरमा वास गतिविधिमा सक्रिय रूपमा संलग्न रहेका व्यक्तिहरूको समयसँगै समानता र समावेशीतामा थप सकारात्मक परिवर्तनहरू भएका छन्।
  - समीक्षा गर्दा सबै स्कोर समयसँगै वृद्धि भएका थिएनन्, तर केहि वास गतिविधिहरूमा संलग्न रहेका व्यक्तिहरूले २०२२ र २०२४ बीच आफ्नो समानता सचेतना, आत्म-क्षमताबोध, वास मान्यताहरू (कसले विभिन्न वास भूमिकाहरू खेल्नुपर्छ भन्ने धारणा), लैङ्गिक मान्यताहरू (कसले विभिन्न सामाजिक भूमिकाहरू खेल्नुपर्छ भन्ने धारणा), र आवागमन (समुदायमा हल्लिन र यात्रा गर्ने स्वतन्त्रता) स्कोरहरूमा महत्वपूर्ण वृद्धि देखाएका थिए।
  - सक्रिय रूपमा संलग्न महिलाहरूको तुलनामा सक्रिय रूपमा संलग्न भएका पुरुषहरूले आत्म-क्षमताबोध र लैङ्गिक मान्यताहरू जस्ता विषयहरूमा बढी वृद्धि देखाए।

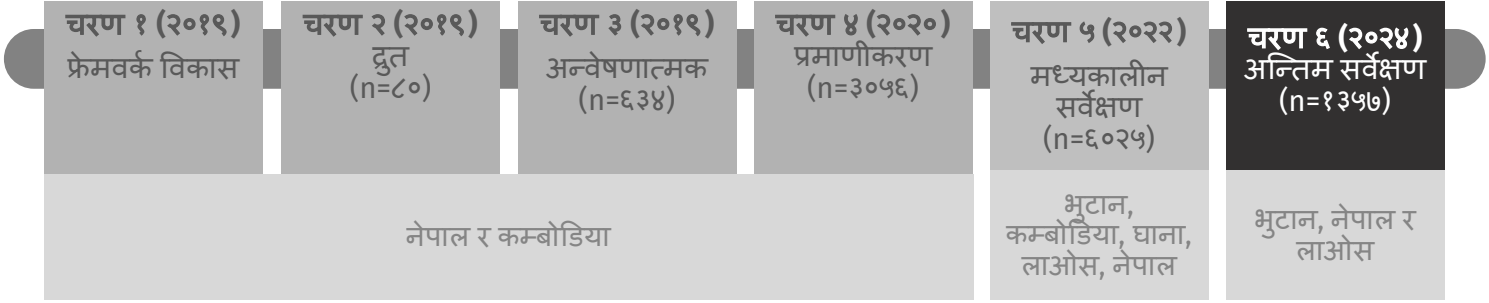
## सीमान्तकृत समुदायका सदस्यहरू

4. डुङ्गेश्वर र रामनगरमा वास गतिविधिमा सक्रिय रूपमा संलग्न भएका र नभएका दुवै समूहका व्यक्तिहरूको तुलनामा सबैभन्दा सीमान्तकृत रहेका व्यक्तिहरूले स्रोत र संरचना क्षेत्रमा बढी फाइदा पाए।
  - अपाङ्गता भएका व्यक्तिहरू भएका घरका उत्तरदाताहरूले वास पहुँच, सामाजिक पूँजी (व्यक्तिगत सञ्जालका गैर-वित्तीय फाइदाहरू), गतिशीलता, र वास कल्याण (वास सुविधाहरू पहुँच गर्दा र प्रयोग गर्दा सुरक्षा, गोपनीयता र तनावमुक्तिका अनुभव) जस्ता क्षेत्रहरूमा अपाङ्गता नभएका घरका तुलनामा राम्रो सुधार देखे।
  - सबैभन्दा गरिब (जसलाई सम्पत्ति स्वामित्वका आधारमा सबैभन्दा तलको धन स्थिति वर्गमा राखिएको छ) ले वास मान्यताहरूमा अन्य वर्गहरूको तुलनामा बढी सुधार देखे।
  - दलित उत्तरदाताहरू, विशेषगरी परियोजनामा सक्रिय रूपमा संलग्न भएका तिनीहरूले वास मान्यताहरू, लैङ्गिक मान्यताहरू र गतिशीलतामा बढी सुधार देखाए।

# अनुसन्धान परियोजना :

वास कार्यक्रमहरूमा समानता, समावेशिता र उत्थानशीलताका परिणामहरू अन्वेषण गर्नको लागि बनाइएको यो अनुसन्धान प्रक्रियाको छैठौं चरण थियो। यो अनुसन्धान सिड्नी विश्वविद्यालयको इन्स्टिच्युट फर सस्टेनेबल फ्युचर्स र एसएनभी एशिया कार्यक्रम बीचको साझेदारी थियो। यस परियोजनाको उद्देश्यहरू निम्न थिए:

1. वास कार्यक्रमहरूबाट कुन परिणामहरू सम्भावित रूपमा प्राप्त हुने छन् भनेर पहिचान गर्नु।
2. यी परिणामहरू मापन गर्न मात्रात्मक उपकरणहरू विकास गर्नु।
3. विभिन्न प्रकारका व्यक्तिहरू र विभिन्न प्रकारका वास कार्यक्रमहरूका परिणामहरू बीचको सम्बन्धहरू परीक्षण गर्नु।



## दृष्टिकोण :

वास-जेमको डाटा तयारी र विश्लेषण सबै १७ थिमहरू मिलेर बनेका पाँच डोमेनहरूमा सञ्चालन गरिएको थियो।

1. Propensity Score Matching (PSM) ले pseudo matched डेटासेट सिर्जना गर्‍यो। PSM ले हामीसँग ठ्याक्कै उस्तै उत्तरदाताहरू नभएको अवस्थामा समयसँगै पछ्याउनको लागि मानिसहरूको डेटा-संचालित समूह सिर्जना गर्न मद्दत गर्‍यो।
2. सामाजिक-आर्थिक परिवर्तनशीलताहरूको वर्णनात्मक विश्लेषण २०२०-२०२४ मा गरिएको थियो। यसले हामीलाई हाम्रो नमूना सङ्कलनबिधिले साँचो ढंगले काम गरिरहेको छ कि छैन भनेर बुझ्नमा मद्दत गर्‍यो।
3. विभिन्न प्रकारका मानिसहरूको लैङ्गिक र सामाजिक-आर्थिक भिन्नताहरू तुलना गर्ने t-परीक्षणहरू गरिएको थियो। यसले महिला र पुरुषको स्कोर र अन्य सामाजिक-आर्थिक कारकहरू जस्तै धन, उमेर, शिक्षा र जातीयतामा भिन्नताहरू बुझ्न मद्दत गर्‍यो।
4. बहुआयामी भिन्नता-**Difference-in-Differences (DiD)** and पृथक प्रभाव- **Differentiated Effects (DDD)** (DiD) रियेसनहरू प्रयोग गरिएका थिए। यी गणनाहरूले कार्यक्रम र नियन्त्रण समूहको प्रयोग गरेर समयसँगै प्रभाव मापन गर्छ र कारण र परिणामका बीचको सम्बन्ध बुझ्न मद्दत गर्दछ। यस प्रक्रियाले लिंग अनुसार वास संलग्नता र सुधारहरूको समयसँगैको प्रभाव अन्वेषण गर्‍यो।
5. वास, समावेशिता, समानता र उत्थानशीलता बीचको Pearson **correlation coefficients** को उपयोग गरियो। यसले दुई वस्तुहरू बीचको सम्बन्ध देखाउँछ, तर यसले कारण कस्तो छ भन्न सक्दैन। यस बिधिले यदि कुनै एक क्षेत्रमा उच्च स्कोर गर्यो भने, अन्य क्षेत्रमा पनि उच्च स्कोर पाउने सम्भावना छ कि छैन भन्ने कुरा बुझ्न मद्दत गर्‍यो।

## सिफारिसहरू :

भविष्यमा नेपालकाका वास कार्यक्रमहरूले सक्रिय र उद्देश्यपूर्ण संलग्नताको सम्बन्धलाई बुझेर समानता, समावेशिता र उत्थानशीलताको सुधार गर्न फाइदा प्राप्त गर्न सक्दछन्।

- वास कार्यक्रमहरूमा सबै, विशेषगरी महिला, पुरुष र सीमान्तकृत समुदायका सदस्यहरूको लागि सक्षमता, आलोचनात्मक सचेतना र संरचनाहरू सुधार गर्नका लागि अर्थपूर्ण संलग्नताका विभिन्न रूपहरूलाई रूपान्तरणकारी तरिकामा प्रवर्धन गर्नु जारी राख्नु पर्छ।
- वास सेवाहरूको पहुँच बढाउन सीमान्तकृत परिवारहरूलाई समर्थन गर्न जारी राख्नुहोस् जसले स्रोत र संरचनाहरूमा सुधार गर्न सक्छ। यसमा अति गरिब, दलित र अपाङ्गता भएका घरपरिवार पर्दछन्।

