SAWA REGIONAL WORKSHOP

24 August to 5 September, 2018

Group 01:
Common Property Water Resource: Distribution, Access and Gendered Roles

Group members:
Mafruha Akter
Poonam Pandey
Deepika Laxme K
Sathya Dilini
Sunil Tiwari

Facilitated by:
Dr. Carolin Arul
Mr. Robert Dongol

Overall coordination:
Prof. Sucharita Sen
Ms. Shreya Chakraborty
Ms. Monica Priya

Contents

- Introduction
- Study Area
- Research Question
- Objectives of the Study
- Research Methods
- Limitations of the Study
- Findings
- Conclusion
- References
- Appendix – Time Use Survey

Introduction

- Common property resources are natural resources owned and managed collectively by a community or society rather than by individuals (OECD, 2001).

- Springs are the principal source of domestic water supply for rural communities in the Hindu Kush-Himalayan region (Negi and Joshi, 2002; Merz et al., 2003; Vaidya, 2015).

- Almost 80% of the 13 million hill and mountain people in Nepal rely on springs as their primary source of water (CBS, 2012; Tambe et al., 2012; Sharma et al., 2016).

- Competition for access to and control of water increases the likelihood of water conflicts in the region. Existing water inequities are further aggravated by persisting disparities in gender, class, caste, location and power politics (ICIMOD, 2017).

Study Area

Bhotechour - Chauki Danda

Location in Nepal

Legend
Lower belt
Upper belt

Sankhu-Bhotechour Rd

N

500 ft

General Background of the Study Area

- Chauki Dandaarea lies in Bhotechur area, ward No. 02 of Melamchi Municipalityin Sindhupalchok District, Province No. 03 of Nepal.
- Bhotechaur area is located at 27.80° N and 85.51° E.
- According to the one of the key informant (Field work, 2018), total number of households in Bhotechaur is approximately 800.
- Majority is Hindu by religion.

- Chauki Danda area has been divided into two segments as upper and lower belt.
- People in upper belt belongs to Chaulagain cast and two households belongs to Tamang.
- Whole lower belt area represent Chaulagain households.
- Lower belt consist with 12 households and upper belt with approximately 40 households.

Research Question

"Who has access to common property resources (Water resource); How access is defined in terms of socio-economic context?

Objectives of the Study

- To analyze the accessibility to common property resource (water) in terms of distribution collection and use.

- To understand the gendered roles in defining the accessibility to water resource in the present socio-economic context.

Limitations of the Study

1. Time constraint.

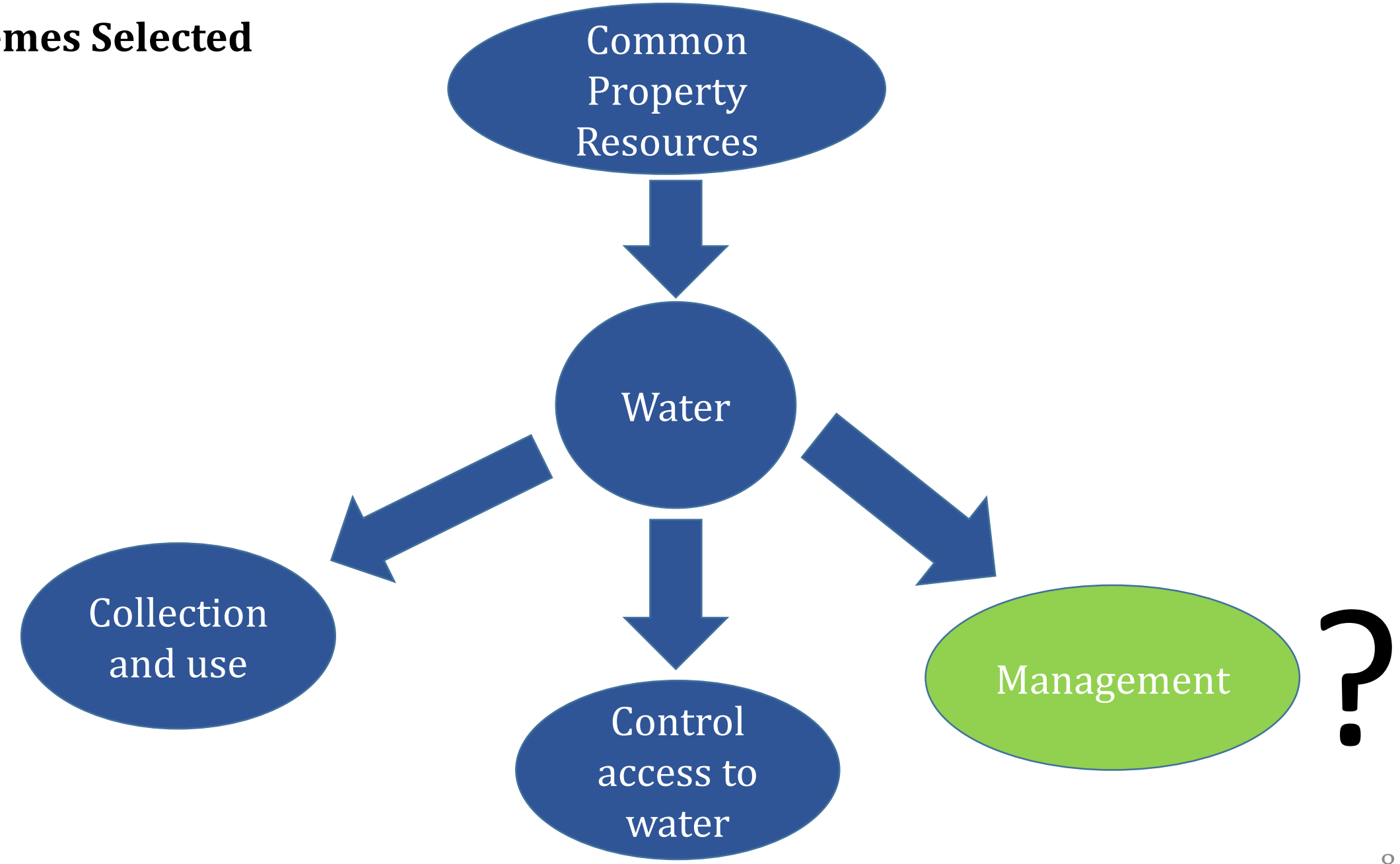
2. Limited number of respondent.

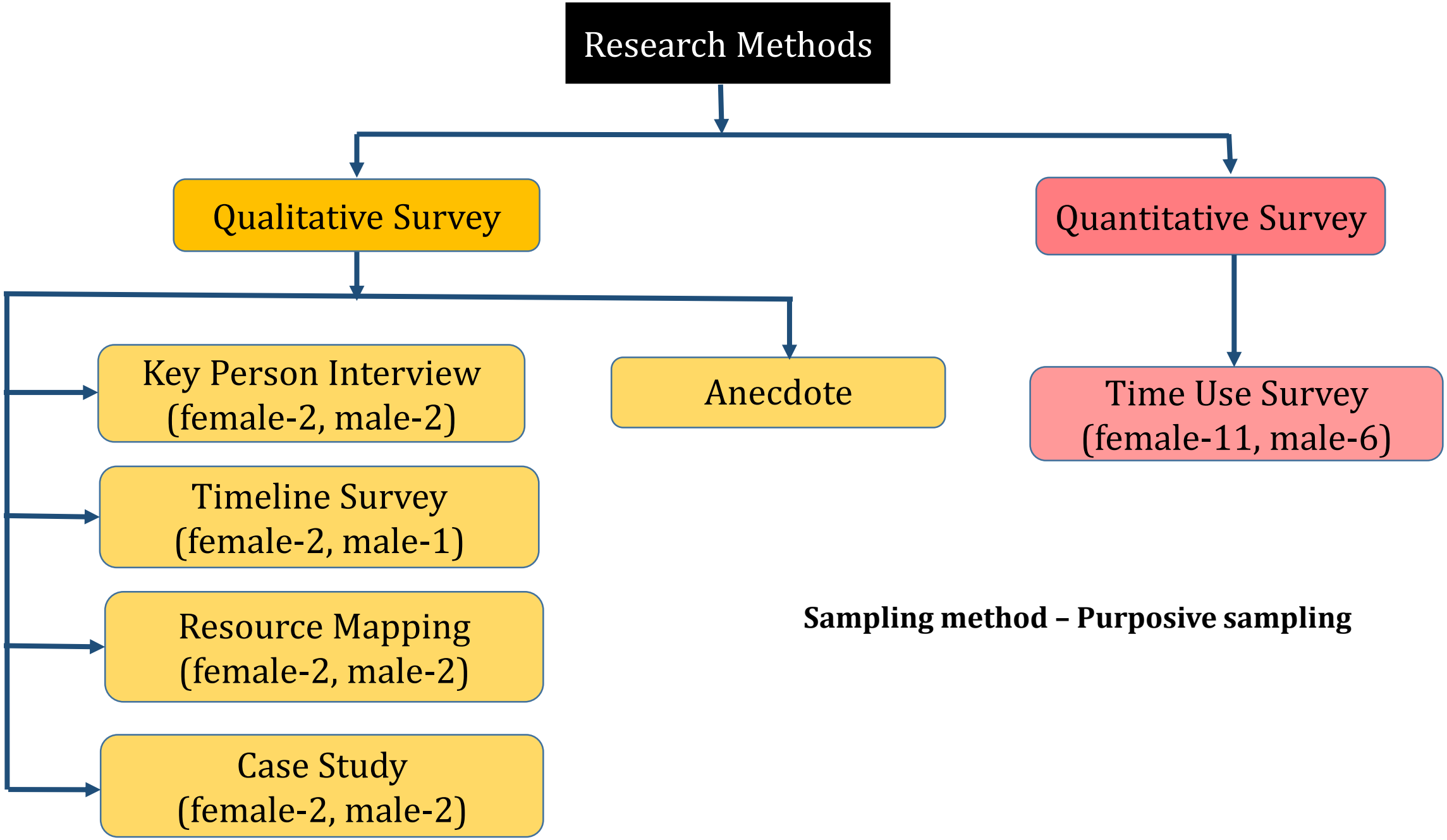
3. Season of surveying.

4. Time interval taken.

5. Seasonality in time use survey in not captured.

Themes Selected





Sampling method – Purposive sampling

Water sources of the study area

Upper belt

Depends on spring

3 springs

Storage tank (10000 lit.)

Lower belt

Stream
Spring

No storage tank
Dry season → depends on stream

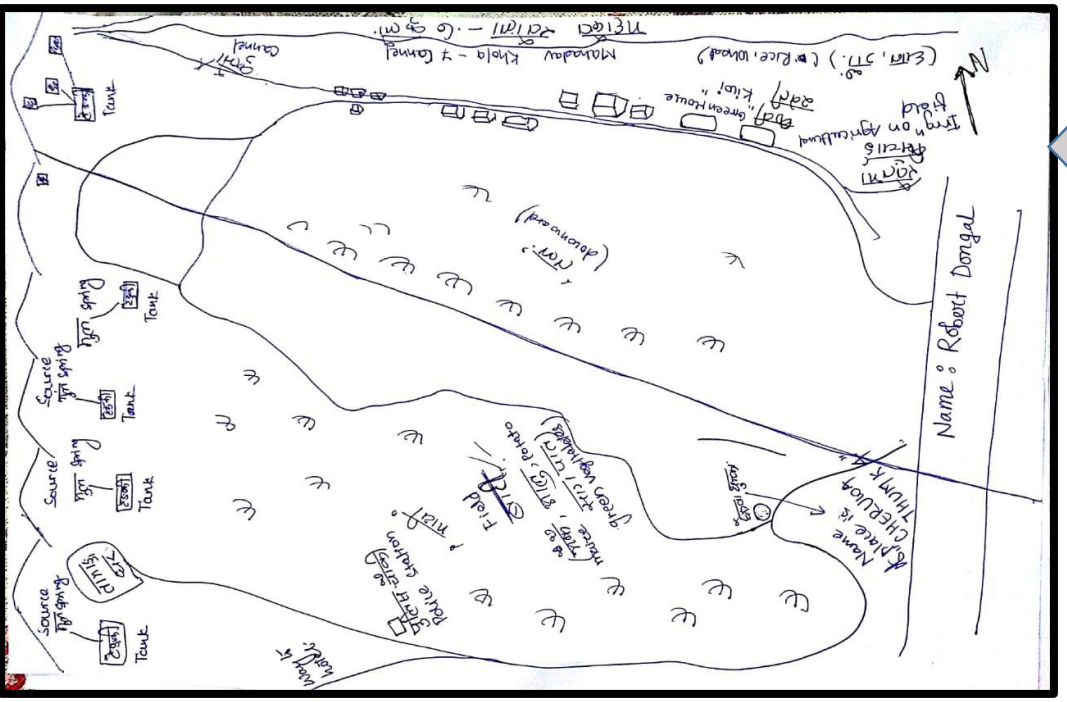
Key Person Interview

- Bacchuarm Chaulagain
- 45 years old
- He provided the overall information about the village
- Furthermore about the water sources and supply system in the village

- Tika Devi Chaulagain
- 85 years old
- She shared her experience about the water source, use and accessibility

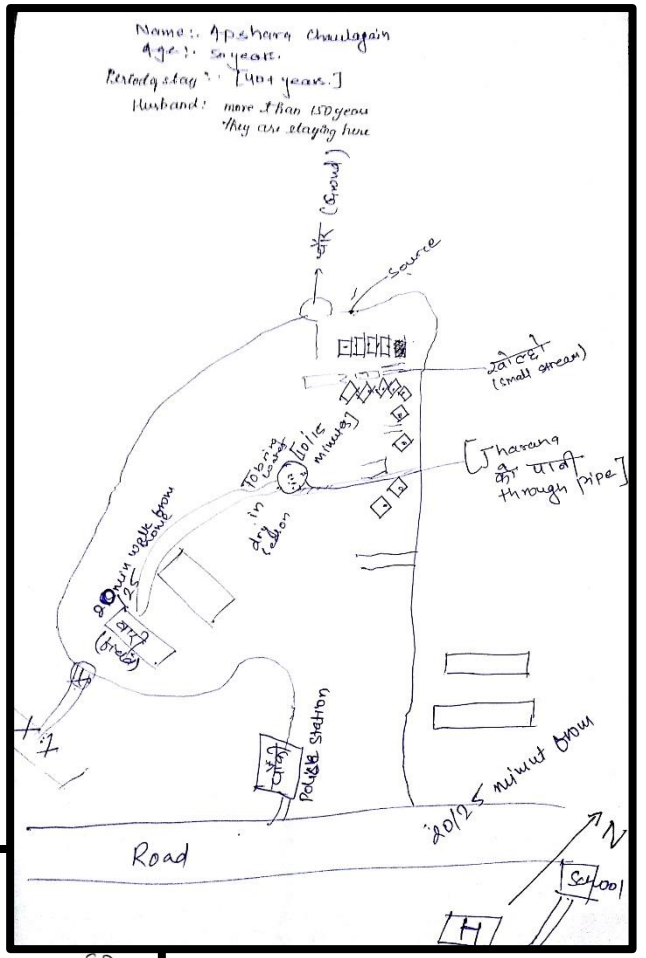
Themes were identified based on the KPI
Also, upper and lower belt clusters has been finalized for survey

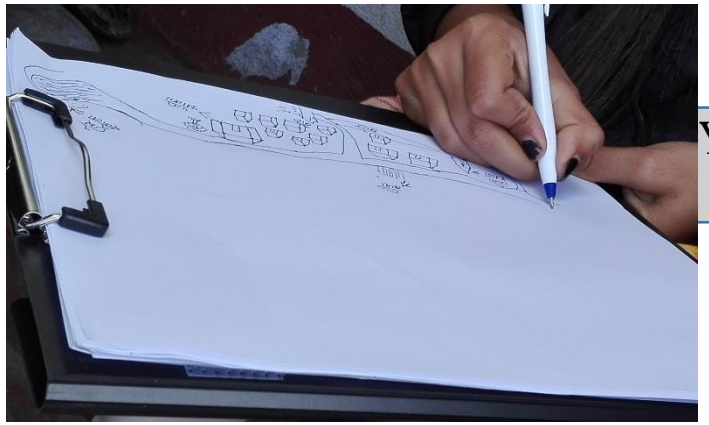
Resource Mapping



Male Respondent

Female respondent





Young female respondent

Findings from the Resource Mapping

- Springs located in the dense forests. Mostly perennial springs and few seasonal springs within the village.

- Female/women addressed their problems related to water while drawing map but men gave the overall ideas/perception about the village.

- Water from the river is taken to agricultural fields through seven farmer managed irrigation canals.

Time Line Survey

Respondent Name: Mahalaxmi Chaulagain (Female)
Age: 65 years old

Year	Temporal changes of water accessibility, collect-use and management
1965 (Age 12)	• They used to collect water from the canal. • They didn't have the pipe system. • They connected the bamboo pipes to canal to tap water. • Water consumption was comparatively higher than today. (had joint family, larger agricultural field and huge number of livestock) • Social conflicts related to sharing of water with lower caste people. • Water accessibility issues due to canal alignment over private lands (Due to block and breach the canal)
1988 (Age 35)	• Pipe system came into existence with the support of an INGO-Action Aid in terms of training people and imparting awareness.
1993 (Age 40)	• The project was handed over to the community.
2018 (Age 65)	• Using the same pipe system. • Life has become easier since she has direct access of water near home. • But still they don't have the reservoir system to store water.

Time Line Survey

Respondent Name: Sukuman Brown (Male)
Age: 90 years old

Year	Temporal changes of water accessibility, collect-use and management
1940 (Age 22)	• They used to have farmer managed canal as well as adequate number of springs in the village itself. • They used to walk half an hour to collect the water. • There used to be less number of house as many people used to live in joint family. • They used to exchange labor among people within the village for agriculture field. • They had alternative options for water supply including springs and stream for extreme conditions like drought, drying out of springs etc.
1980 (Age 35)	• Pipe system including reservoir tank came into existence. • Most of the joint family got separated in to nuclear family. • Agricultural land converted in to settlements. • Some of the springs were damaged due to settlements.
2018 (Age 90)	• Problem in pipe maintenance due to clogging of sediments. • Most of the people has got migrated in search of educations, job etc. • Tap has been installed but the pipeline is not connected due to political influence. • Water problems as springs being drying resulting in limited no of springs upland location. • Water users committee has formed but is not functioning.

Time Line Survey

Respondent Name: Lamo Tamang (Female)
Age: Not known.

Year	Temporal changes of water accessibility, collect-use and management
Previous	• There were many sources of springs. • Access to water was difficult since they had to walk one and half hours to fetch water. • All domestic activities like collecting water, cleaning, cooking were only done by women. • They didn't have spare time at home. • There used to be disparity between caste based on water and culture sharing.
Present	They have control access to water from influential group. Water will not come to the pipe many time because of repair and maintenance.

Findings from Time line

Upper caste

Brahmin woman

- Better access to water through canal.
- Problem in sharing the common water resources i.e, canal, spring before the pipe system came into existence. Now, she doesn't have any problem.

Tamang caste

Lower caste man

- Travelled a long distance to collect water.
- Few springs deteriorated due to settlements.
- Problem of clogging the pipelines.

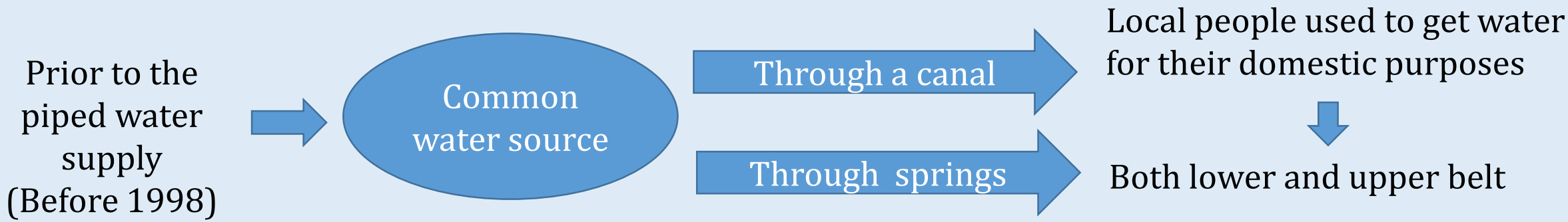
Lower caste woman

- Travelled a long distance to collect water.
- She was always negatively influenced by upper caste that limited her accessibility to water resources.
- She has limited access to water

Cases Selected for in-depth interviews

Findings of Case Studies

Water Accessibility (1)



Pipeline water supply system

- **Easy accessibility of water through pipeline**
  Comfortable for only those households which are located near to the canal
- **Deteriorate canal system**

Water Accessibility (2)

Commonalities

- Seven irrigation canals being operated for irrigating their agricultural lands located far downhill

Lower Belt

- Lack of collection tank leads to problems in water distribution.

Upper Belt

- Water is collected in the tank and distributed.

Gendered disparities

- Mostly women collect the water from the taps for household works.

Caste disparities

- Controlled water accessibility to the lower caste by the upper caste people.

Water Accessibility (3)

Based on Economic Disparities

- Two different diameter pipelines to convey water to the households

Private pipeline from common water source

People who have more economic status

Can extract more water Whenever management issues in common pipeline

Common pipeline for all households

Water accessibility issues

People who have less economic status

Water Accessibility (4)

Based on Economic Disparities

Overhead storage in rich family house

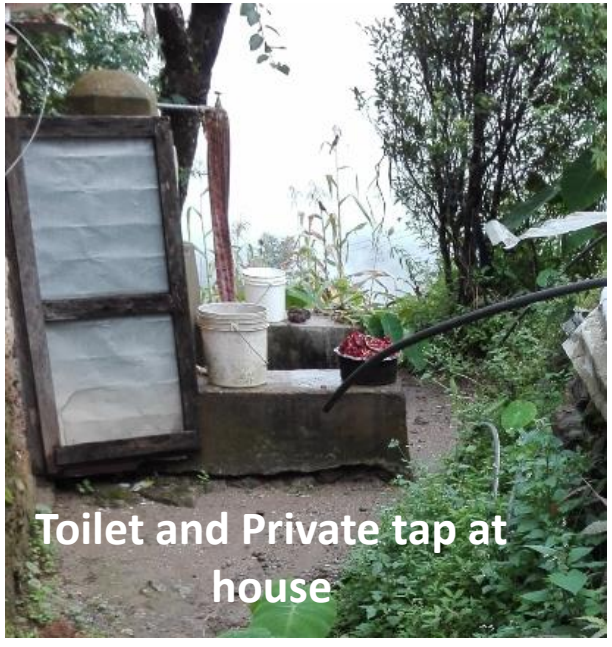
Storage in house

Woman cleaning the utensils at the common water stand

Collection and use (1)

- Prior to the piped water supply, women had to walk one hour to the nearest stream to get water for domestic purposes.
- Now, women have access to water at the home and their life is easier than the previous.
- Multi tasking done by the women (agricultural work and household chores); specially single woman headed family has to bear most of the burden.
- Situation is more stressful during the dry season when they have to go to a distant to collect water.

Collection and Use (2)


Toilet and Private tap at house


Livestock bathing from the common water tap


Plugged/unplugged whenever needed

Private tap connection at household


Woman cleaning herself at common tap stand


Women collecting water from the common tap (seasonal spring)


Man and woman at the common water tap

Collection and Use (3)

Management (1)

Commonalities

- Government has allocated some money for the maintenance work.
- Unfair budget distribution between upper and lower belt people.
- WUC is not functioning well.
- Pipes get eroded due to clogging, leakages, breakage at the time of high discharge in the stream. The problem is most prominent during the monsoon which delays the work of repairing.

Management (2)

Lower Belt

- Each household had paid NRs. 1200 at the time of installation
- There is no reservoir tank to store water
- Most of the lower belt people don't have pipeline at their house
- Requested the government institutions for the support in building a tank to store water. However, they reported that it has not been successful due to the budget issues.

Upper Belt

- Upper belt have paid NRs. 2000 at the time of installation
- They have one reservoir
- Have access to water at their house through pipe system (Except two Tamang houses)

Management (3)

Gendered disparities

- WUC constitutes of 3-4 women members, and in one WUC, woman occupies the key position of Secretary.
- Women don't know much information about the about WUA.
- Maintenance of the pipelines, WUC members along with user households are responsible (mainly men).
- In the field women manages water system by diverting the water from the source to the canal.
- In absence of the male members, female also go the source whenever maintenance required.

Anecdotes

"पहिला घरमा पानीको सुबिधा थिएन ,अहिले छ तर केहि गर्न सक्दैन "

Initially I didn't have access to water at home, now I have but cannot do anything

"पुरुषले घरको काम गरे पाप लग्थियो "

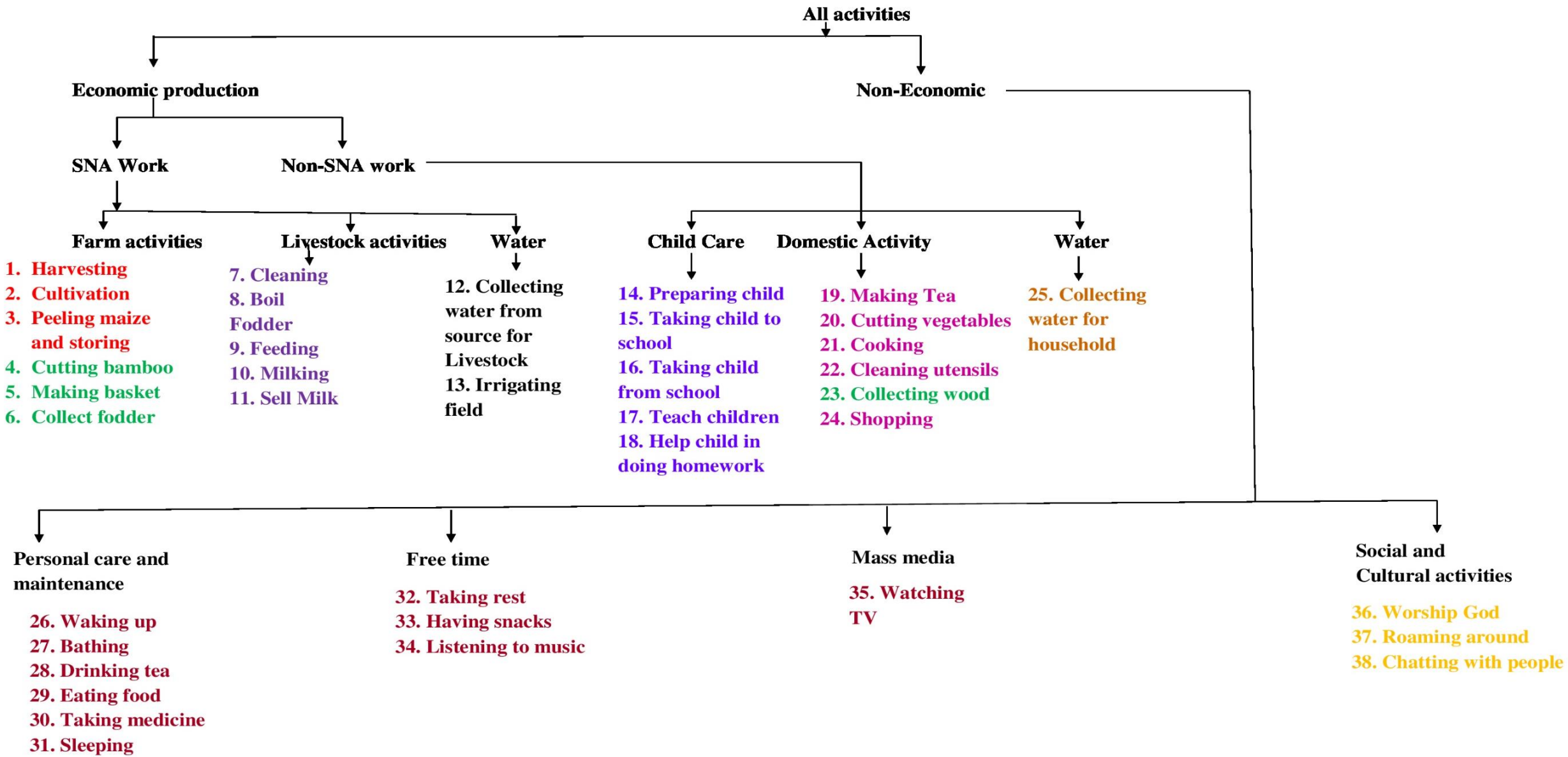
Back in time, men doing households was a sin.

"अहिले स्वर्ग छ "

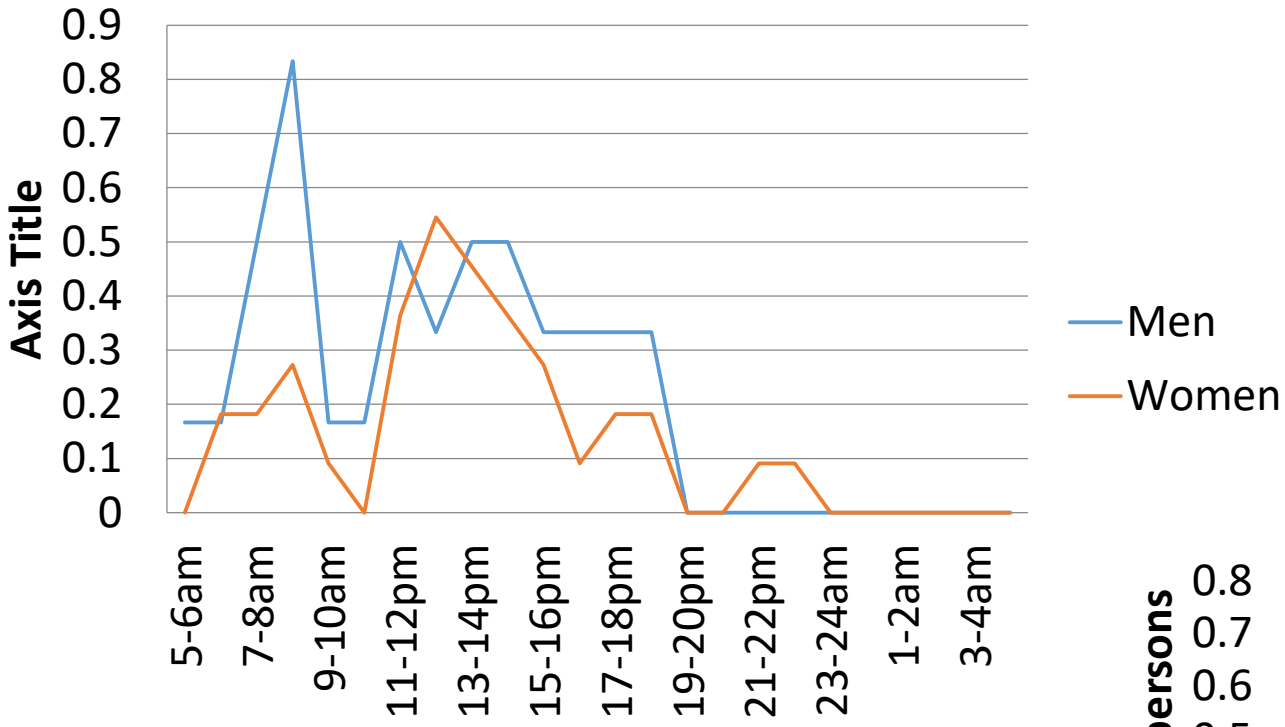
It's a heaven now

COMMON PROPERTY RESOURCE (WATER RESOURCE)

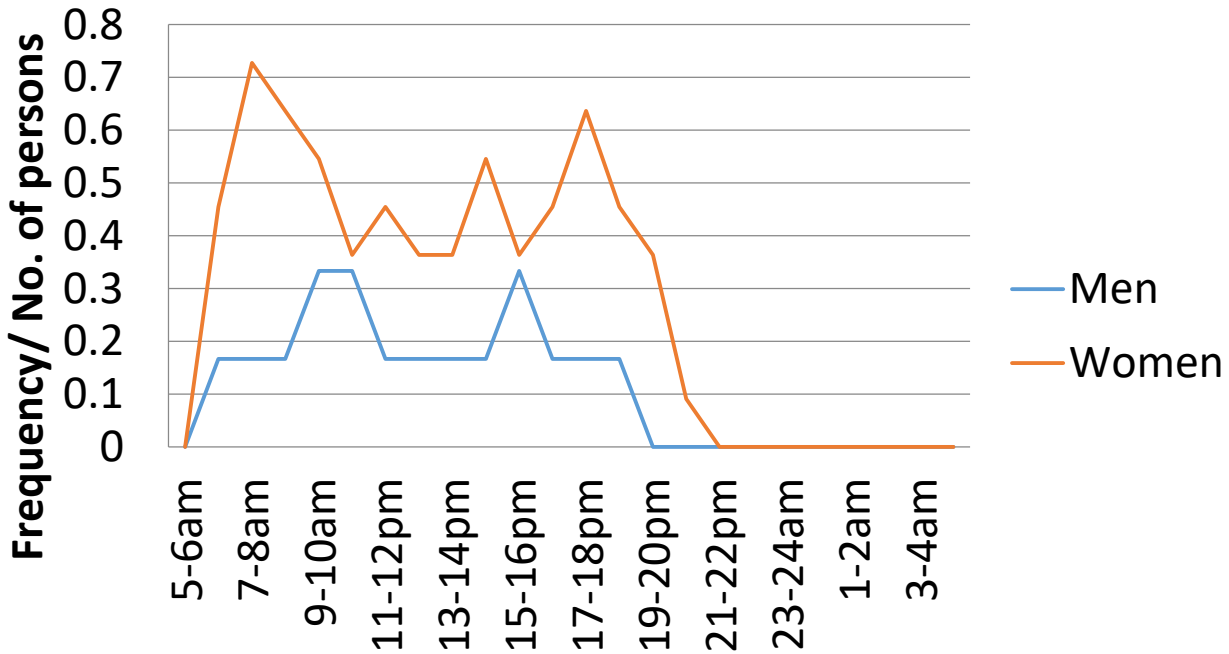
TIME-USE SURVEY

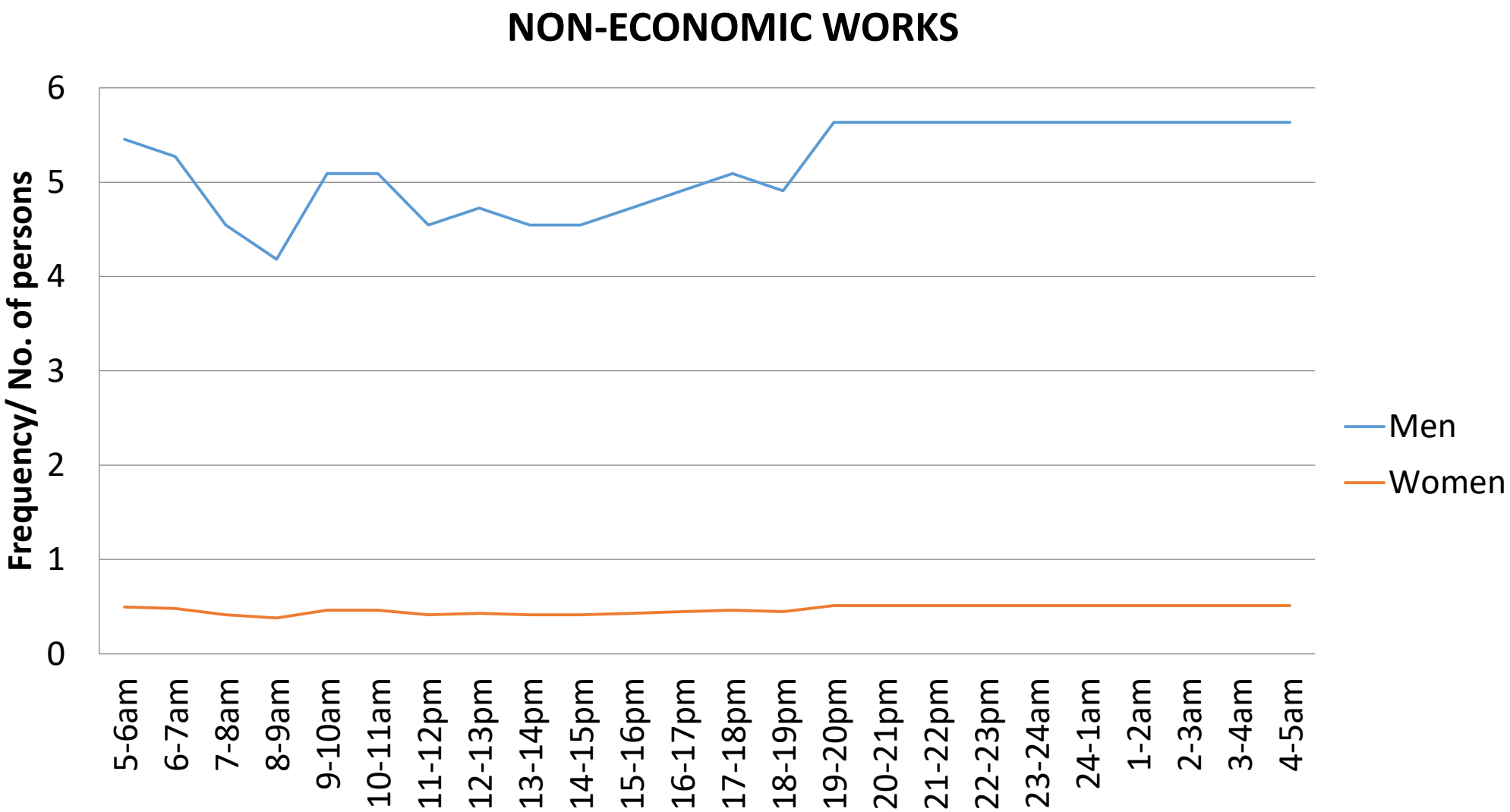


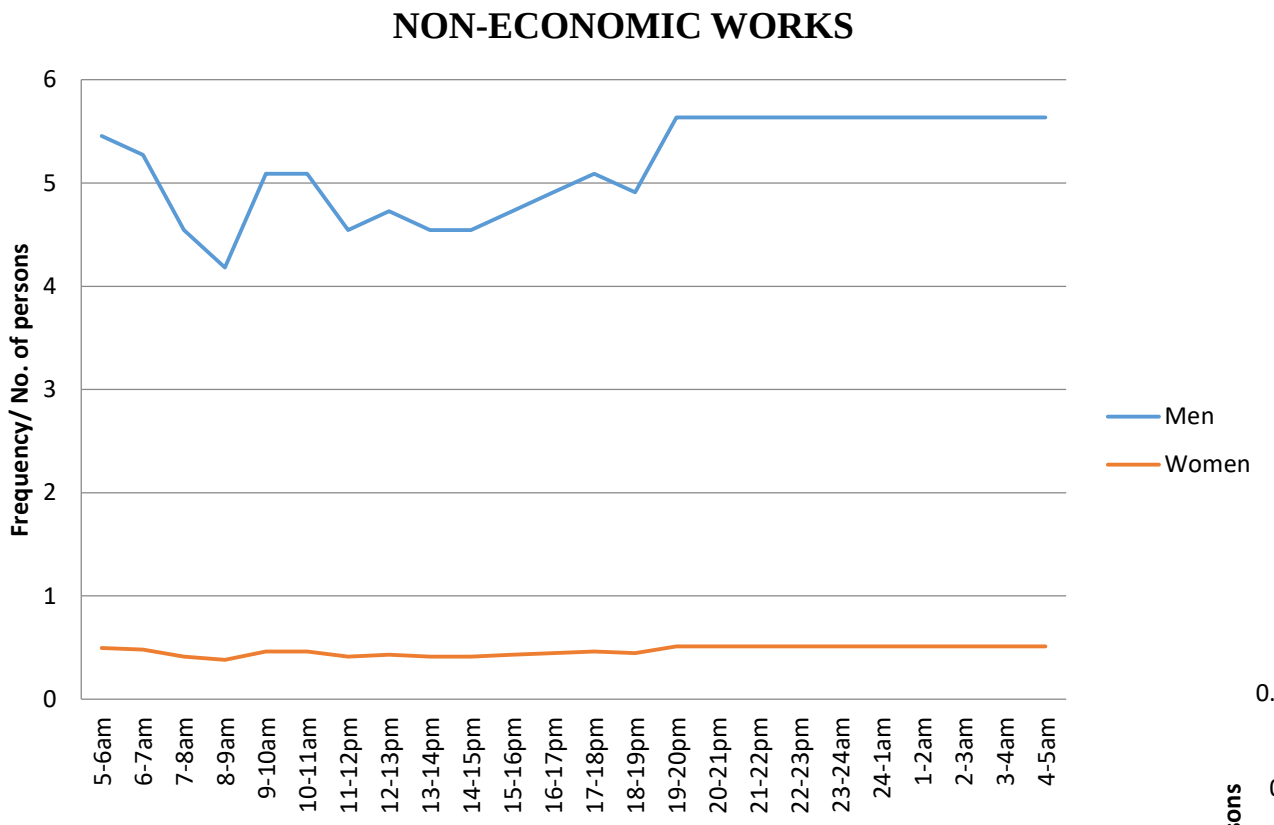
SNA WORKS

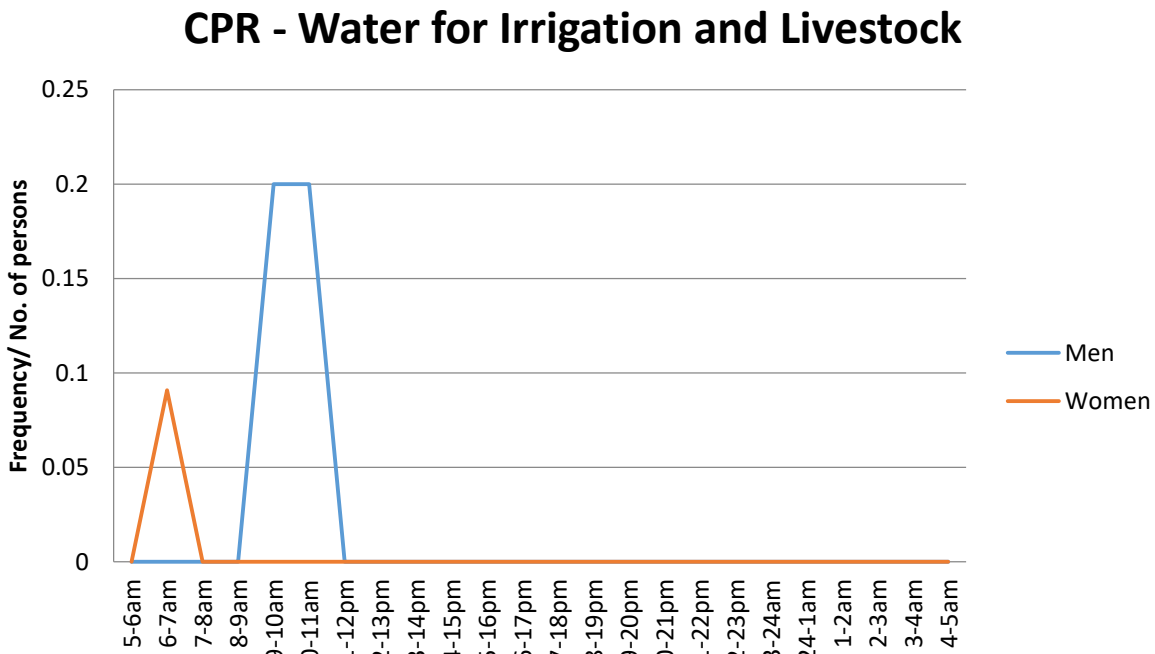


NON-SNA WORKS

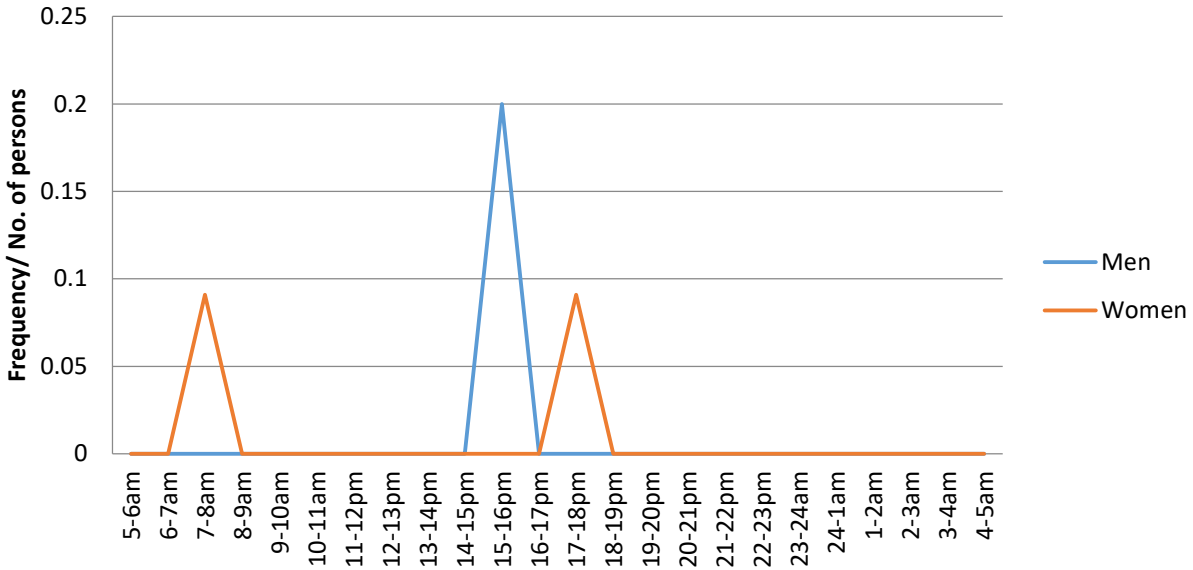



NON-ECONOMIC WORKS
Frequency/ No. of persons
6
5
4
3
2
1
0
5-6am
6-7am
7-8am
8-9am
9-10am
10-11am
11-12pm
12-13pm
13-14pm
14-15pm
15-16pm
16-17pm
17-18pm
18-19pm
19-20pm
20-21pm
21-22pm
22-23pm
23-24am
24-1am
1-2am
2-3am
3-4am
4-5am
Men
Women

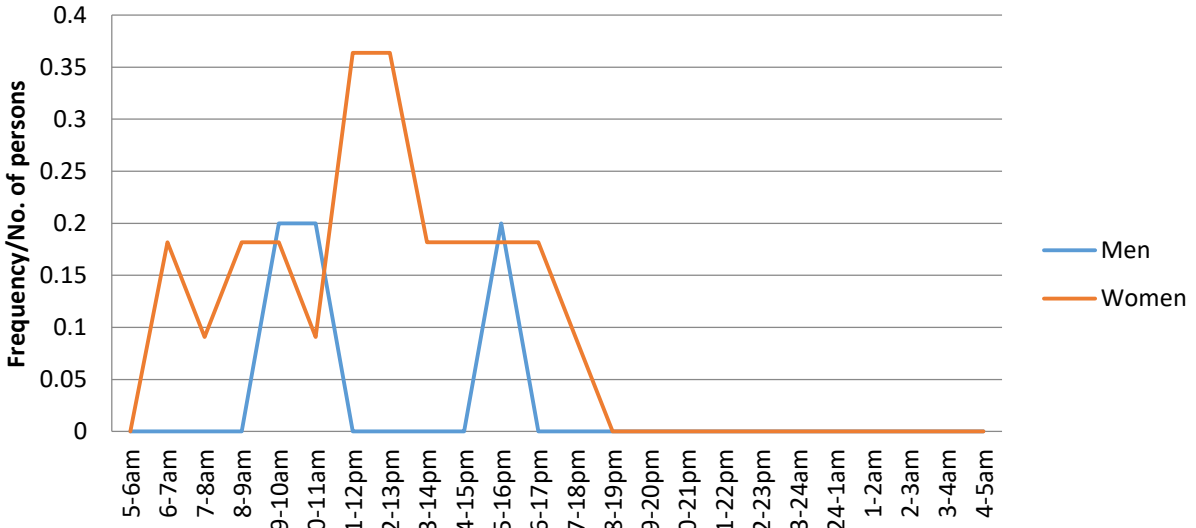

NON-ECONOMIC WORKS
Frequency/ No. of persons
0
1
2
3
4
5
6
5-6am
6-7am
7-8am
8-9am
9-10am
10-11am
11-12pm
12-13pm
13-14pm
14-15pm
15-16pm
16-17pm
17-18pm
18-19pm
19-20pm
20-21pm
21-22pm
22-23pm
23-24am
24-1am
1-2am
2-3am
3-4am
4-5am
Men
Women


CPR - Water for Irrigation and Livestock
Frequency/ No. of persons
0
0.05
0.1
0.15
0.2
0.25
5-6am
6-7am
7-8am
8-9am
9-10am
10-11am
11-12pm
12-13pm
13-14pm
14-15pm
15-16pm
16-17pm
17-18pm
18-19pm
19-20pm
20-21pm
21-22pm
22-23pm
23-24am
24-1am
1-2am
2-3am
3-4am
4-5am
Men
Women

CPR - Water for household



CPR - Land and Water



Findings from Time use survey

- In household, water collection is predominantly done by women (2:1).
- Women access the water source more than once and during different times
- During morning hours contribution from men is more; which may be due to the engagement of women in household works.
- Compared to men, women’s working time is more, but most of their works doesn’t contribute to GDP.

Conclusions

Disappearance of the canal system that existed prior to pipe system.

Common property → Private property + Increase extraction

Sustainability of the common resources?

Accessibility
Collect and use
Management

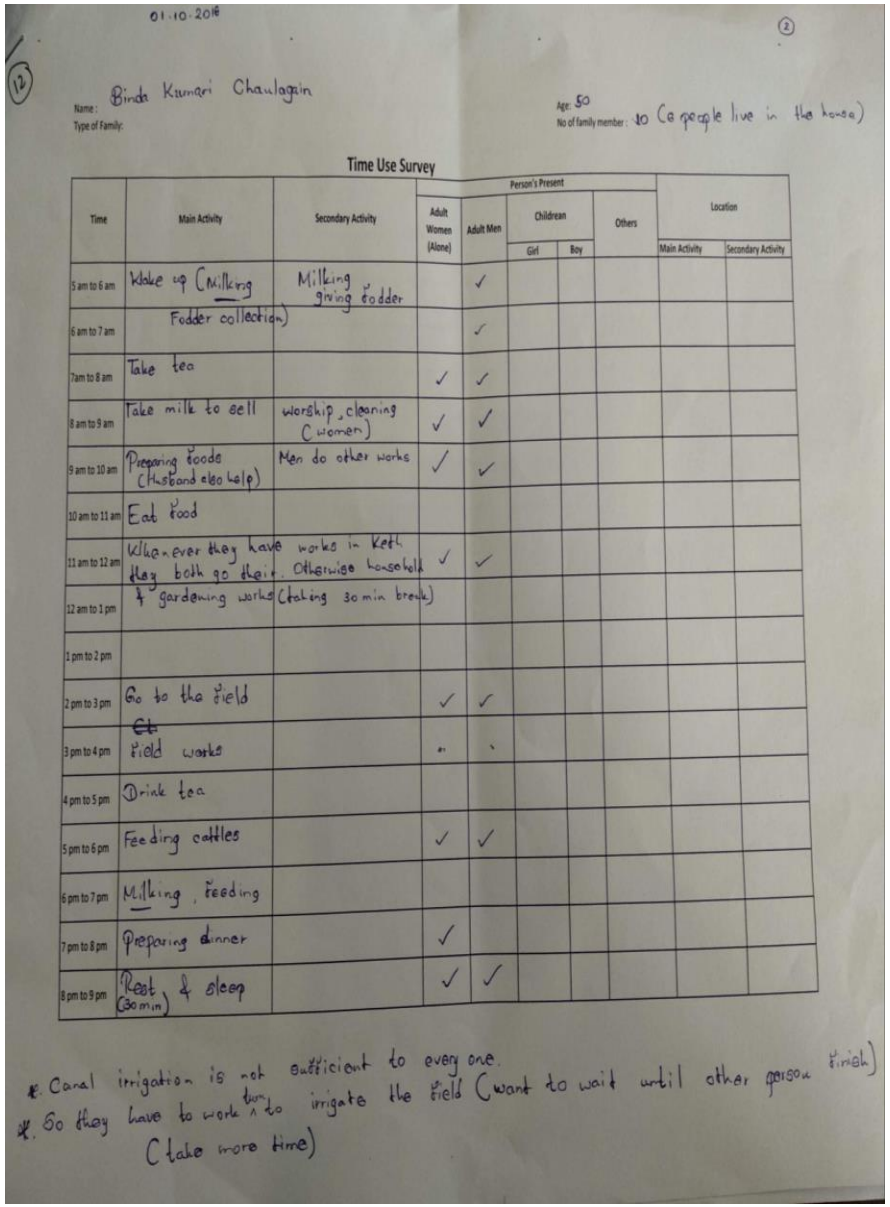
Brahmin class family: Mostly women are involved in water collection and use.
Tamang: both men and women involved.
Economic disparities among the people and access to water controlled by these people.

Gender disparities are made based on uses of water. Especially household water uses by women and more burden on women at women-headed families.

References

- CBS [Central Bureau of Statistics]. 2012. *National population and housing census 2011 (national report)*. Kathmandu, Nepal: National Planning Commission Secretariat, Central Bureau of Statistics, Government of Nepal.OECD, 2001. Common Property Resources (Environmental) {Online} available on https://stats.oecd.org/glossary/detail.asp?ID=391 accessed on September 4, 2018.
- ICIMOD (2016). Springs, Storage Towers, and Water Conservation in the Midhills of Nepal http://lib.icimod.org/record/32016/files/icimmodWP16-3.pdf
- Poudel, D. D. and Duex, T. W., Vanishing Springs in Nepalese Mountains: Assessment of Water Sources, Farmers' Perceptions, and Climate Change Adaptation http://www.bioone.org/doi/full/10.1659/MRD-JOURNAL-D-16-00039.1
- ICIMOD, (2017). Gender and Social Inclusion in Local Water Planning: Lessons from Water Use Master Plan Practices in Nepal available at https://reliefweb.int/report/nepal/gender-and-social-inclusion-local-water-planning-lessons-water-use-master-plan
- Merz J, Nakarmi G, Weingartner R. 2003. Potential solutions to water scarcity in the rural watersheds of Nepal's Middle Mountains. *Mountain Research and Development* 23(1):14–18
- Negi GCS, Joshi V. 2002. Drinking water issues and development of spring sanctuaries in a mountain watershed in the Indian Himalaya. *Mountain Research and Development* 22(1):29–31.
- Sharma B, Nepal S, Gyawali D, Pokhrel GS, Wahid SM, Mukherji A, Acharya S, Shrestha AB. 2016. *Springs, Storage Towers, and Water Conservation in the Midhills of Nepal*. ICIMOD Working Paper 2016/3. Kathmandu, Nepal: Nepal Water Conservation Foundation and International Centre for Integrated Mountain Development.
- Tambe S, Kharel G, Arrawatia ML, Kulkarni H, Mahamuni K, Ganeriwala AK. 2012. Reviving dying springs: Climate change adaptation experiments from the Sikkim Himalaya. *Mountain Research and Development*32(1):62–72.
- Vaidya RA. 2015. Governance and management of local water storage in the Hindu Kush Himalayas. *International Journal of Water Resources Development* 31(2):253–268.

Time use survey-Sample



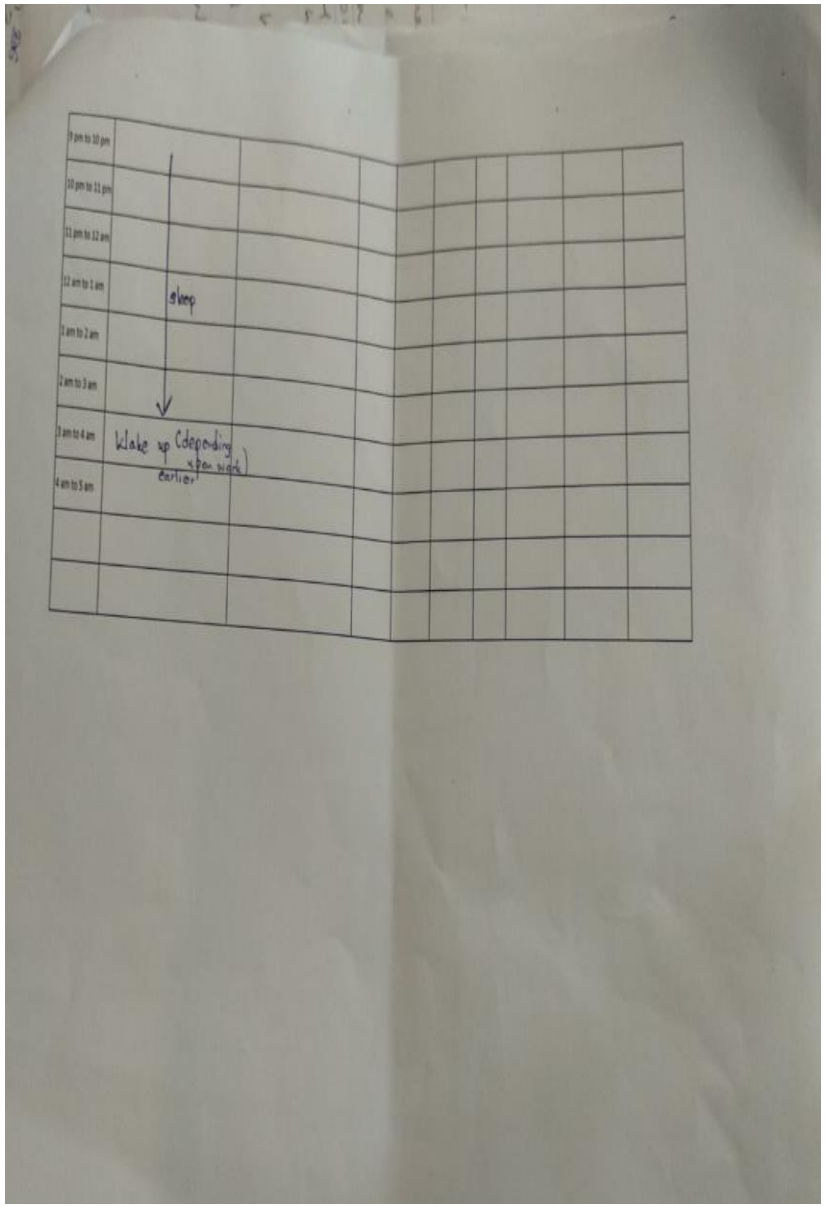
01.10.2018

Name: Bindu Kumari Chaulagain
Age: 50
Type of Family: No of family member: 10 (10 people live in the house)

Time Use Survey

Time	Main Activity	Secondary Activity	Person's Present					Location	
			Adult Women (Alone)	Adult Men	Children		Others		
					Girl	Boy		Main Activity	Secondary Activity
5 am to 6 am	Wake up (Milking	Milking giving fodder		✓					
6 am to 7 am	Fodder collection)			✓					
7am to 8 am	Take tea		✓	✓					
8 am to 9 am	Take milk to sell	worship, cleaning (women)	✓	✓					
9 am to 10 am	Preparing foods (Husband also help)	Men do other works	✓	✓					
10 am to 11 am	Eat food								
11 am to 12 am	Whenever they have works in Ket. they both go their. Otherwise household & gardening works		✓	✓					
12 am to 1 pm		(taking 30 min break)							
1 pm to 2 pm									
2 pm to 3 pm	Go to the field		✓	✓					
3 pm to 4 pm	~~Et~~ field works								
4 pm to 5 pm	Drink tea								
5 pm to 6 pm	Feeding cattles		✓	✓					
6 pm to 7 pm	Milking, feeding								
7 pm to 8 pm	Preparing dinner		✓						
8 pm to 9 pm	Rest (30 min) & sleep		✓	✓					

* Canal irrigation is not sufficient to every one.
* So they have to work turn to irrigate the field (want to wait until other person finish) (take more time)



9 pm to 10 pm
10 pm to 11 pm
11 pm to 12 pm
12 am to 1 am — sleep
1 am to 2 am
2 am to 3 am
3 am to 4 am — Wake up (Depending upon work) earlier
4 am to 5 am

Acknowledgement

- Dr. Melanie Robertson
- Dr. Sucharita Sen
- All co-ordinators
- All Resource persons
- Nepal Engineering College
- Monica Priya, Shreya

THANK YOU