

Indigenous Perspectives on Water Security

Bob Patrick and Obadiah Awume

Department of Geography and Planning

University of Saskatchewan



Lake Winnipeg: Where Waters Meet!

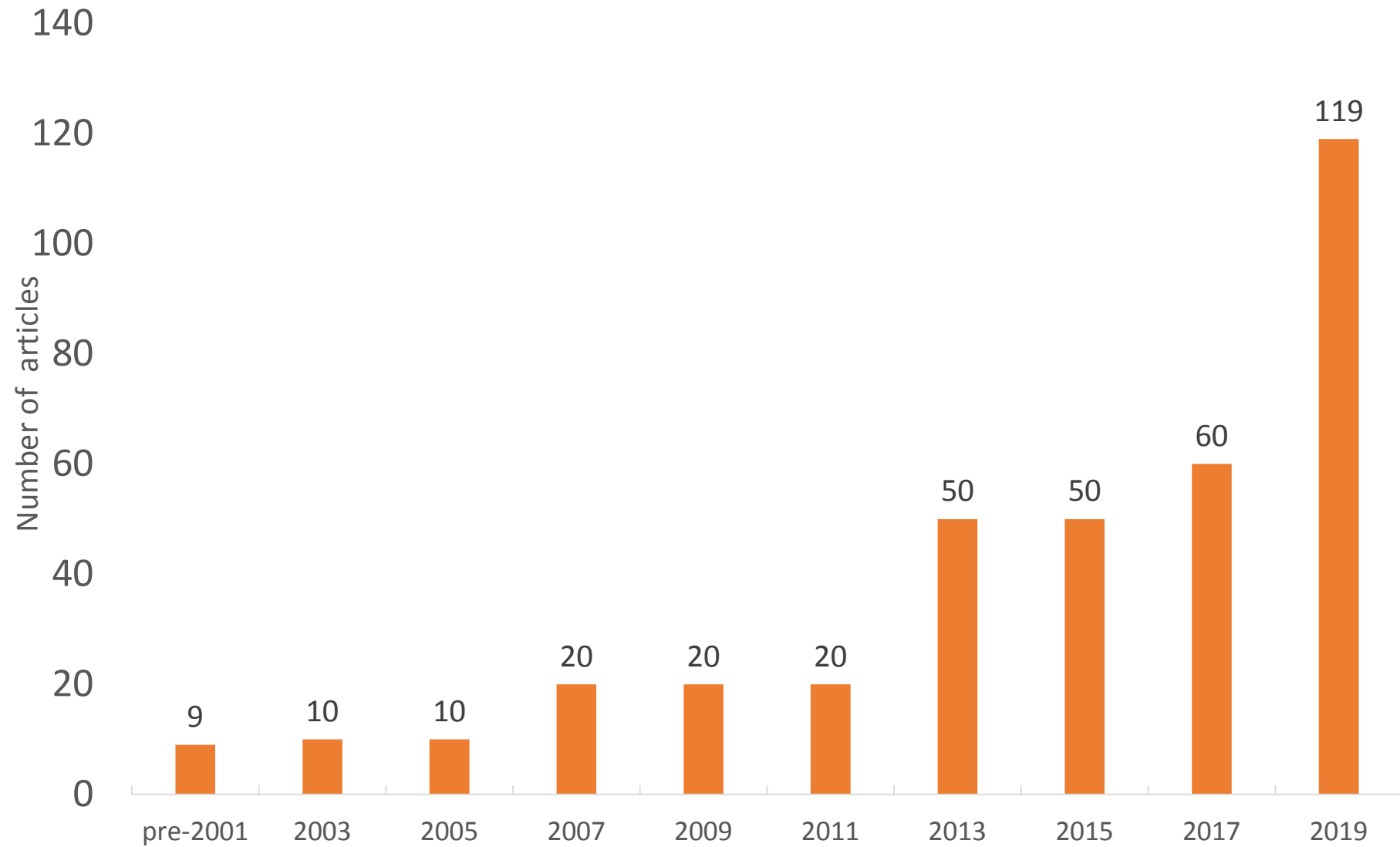
September 30-October 2, 2019

Gimli, Manitoba

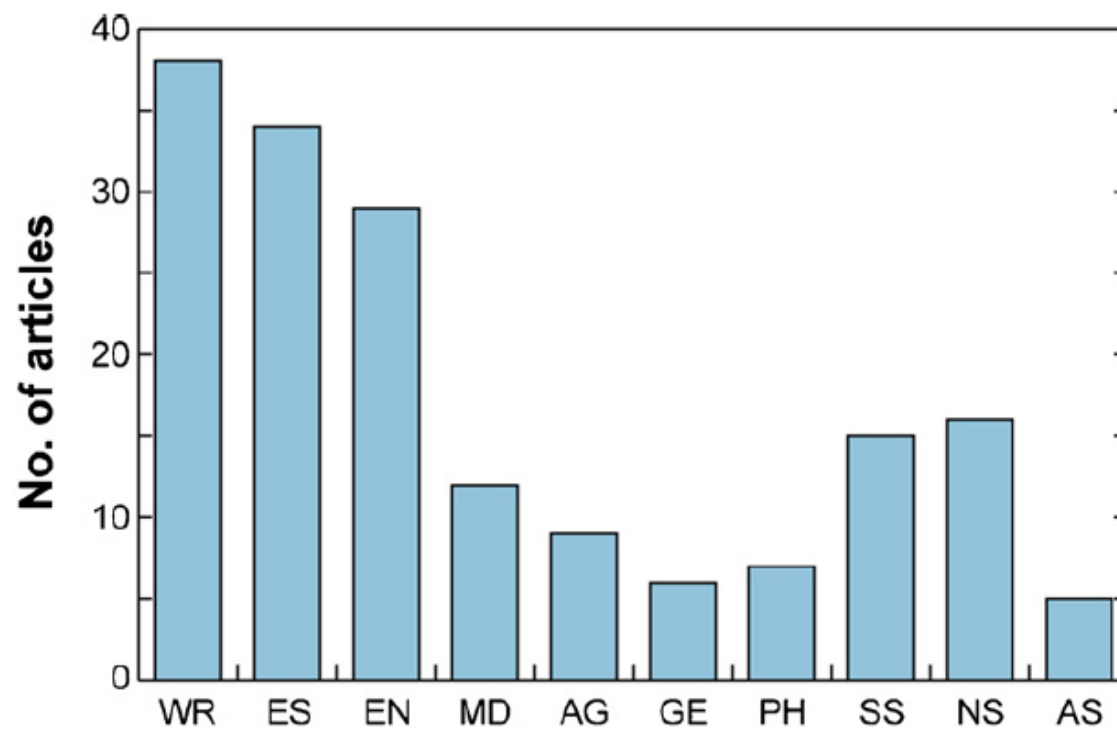
Water Security – an emerging concept

Water Security gaining attention in academic scholarship

Number of articles with "water security" in title



Data Source: Web of Science database, October 1, 2019



WR=Water Resources;

ES=Environmental Studies, Sciences, and Ecology;

EN=Engineering (Civil, Environmental, Chemical, Multidisciplinary);

MD=Geosciences, Multidisciplinary sciences;

AG=Agriculture, Agronomy;

GE=Geography;

PH=Health (Public, Environmental, Occupational);

SS=Social Science (International Relations, Law, Planning and Development, Anthropology, Area Studies, Ethics, Economics, Operations Research and Management Science, Sociology);

NS=Natural/Physical Science (Biology, Computer Science, Fisheries, Food Science, Limnology, Biodiversity Conservation, Social Science, Tropical Medicine, Plant Science, Parasitology);

AS=Meteorology and Atmospheric Sciences

Water Security – an emerging concept

Gaining popularity in research institutions, government agencies



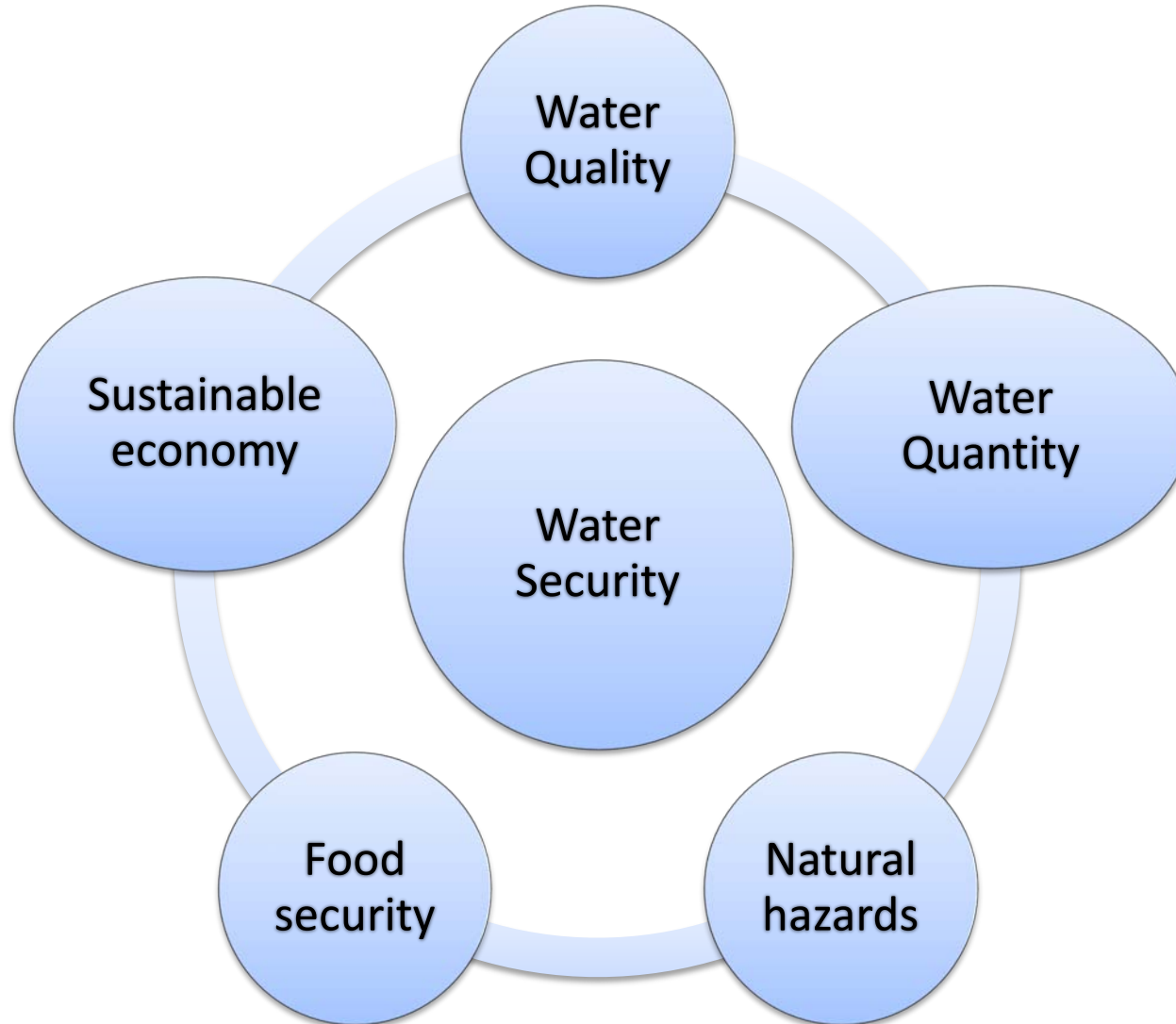
Is there an Indigenous water security?

- **Research questions:**
 - **How is water security currently defined in the literature?**
 - **What might an Indigenous perspective bring to the definition?**

Water Security - common themes

- Cook and Bakker 2012
 - Water quantity and availability (water quality)
 - Human vulnerability to hazards
 - Human and global development needs linked to food security
 - Sustainability of economy

Water Security



Risk Rank	Alberta No. 1	Alberta No. 2	Saskatchewan No. 1	Sask No. 2	Sask No. 3	Sask No. 4
High Risk	Household water cisterns	Diesel spillage	Septic tank 'Jet outs'	Sewage Lagoons	Vulnerable community well	Auto-wreckers Storage years
	Industrial drilling	Illegal dump sites	Agricultural land	Private wells	Septic tank 'shoot-outs'	Sewage mounds and lagoons
	Transport hazardous goods	Livestock close to wells	Septic fields	Cisterns	Abandoned wells	Sewage pumping stations
	Septic 'shoot outs'	Abandoned vehicles	Sewage lagoons	Flooded wells	Illegal dumpsites	Road transport and stormwater along lakeshore

Risk Rank	Alberta No. 1	Alberta No. 2	Saskatchewan No. 1	Sask No. 2	Sask No. 3	Sask No. 4
High Risk	Household water cisterns	Diesel spillage	Septic tank 'Jet outs'	Sewage Lagoons	Vulnerable community well	Auto-wreckers Storage years
	Industrial drilling	Illegal dump sites	Agricultural land	Private wells	Septic tank 'shoot-outs'	Sewage mounds and lagoons
	Transport hazardous goods	Livestock close to wells	Septic fields	Cisterns	Abandoned wells	Sewage pumping stations
	Septic 'shoot outs'	Abandoned vehicles	Sewage lagoons	Flooded wells	Illegal dumpsites	Road transport and stormwater along lakeshore

Drinking water conditions in Indigenous communities in Canada

- One-in-five of the 700 Indigenous communities are on a boil water advisory at any time, with many advisories lasting decades (Arsenault et al 2018)
- Approximately 30% of Indigenous community water systems are classified as high risk systems (Neegan Burnside 2011)
- Over 50 percent of First Nation community sewage lagoons are either at, or over, capacity (Neegan Burnside 2011)

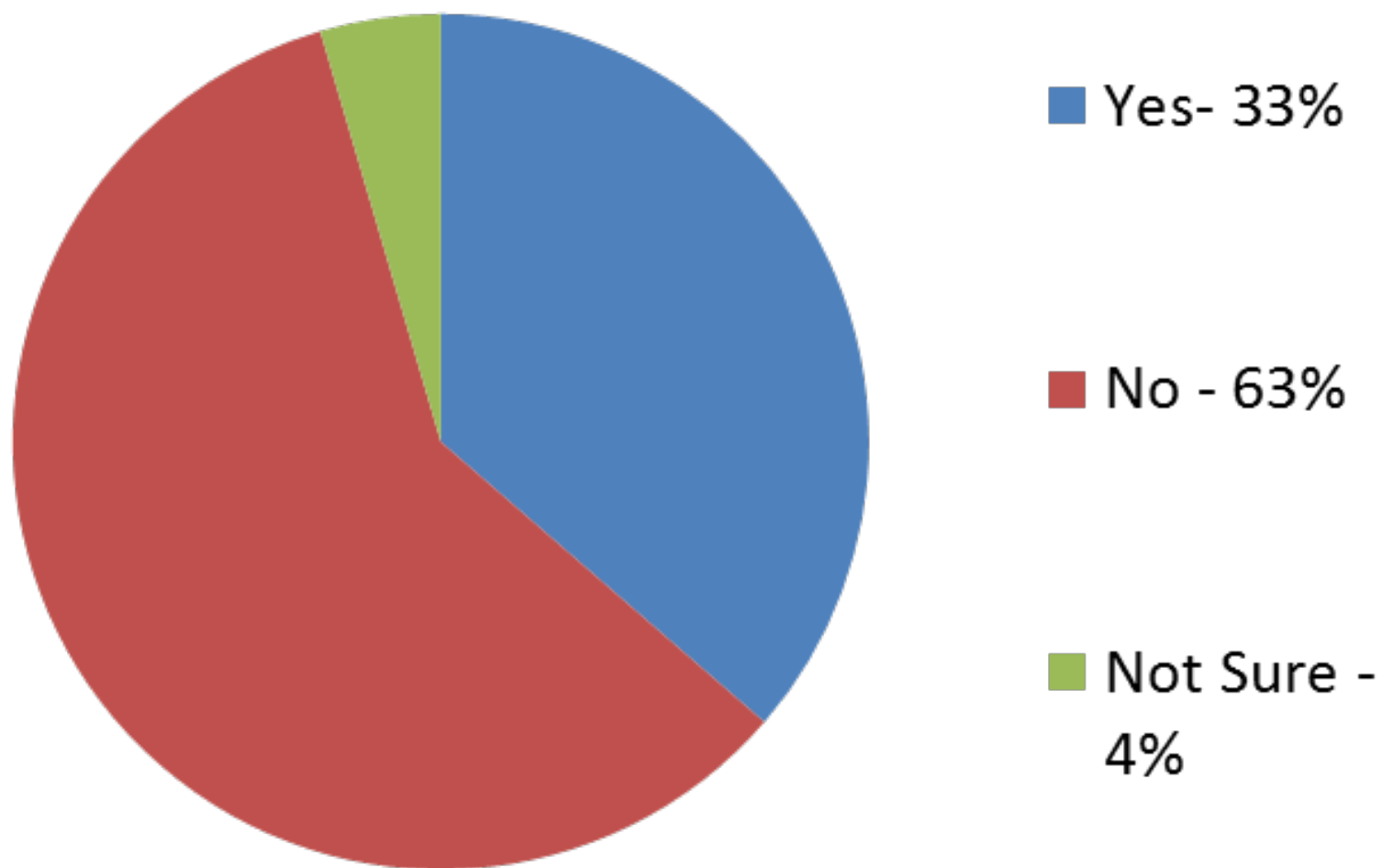
Definitions of water security

- Quality
- Quantity
- Natural hazards
- Development needs/food security
- Economy

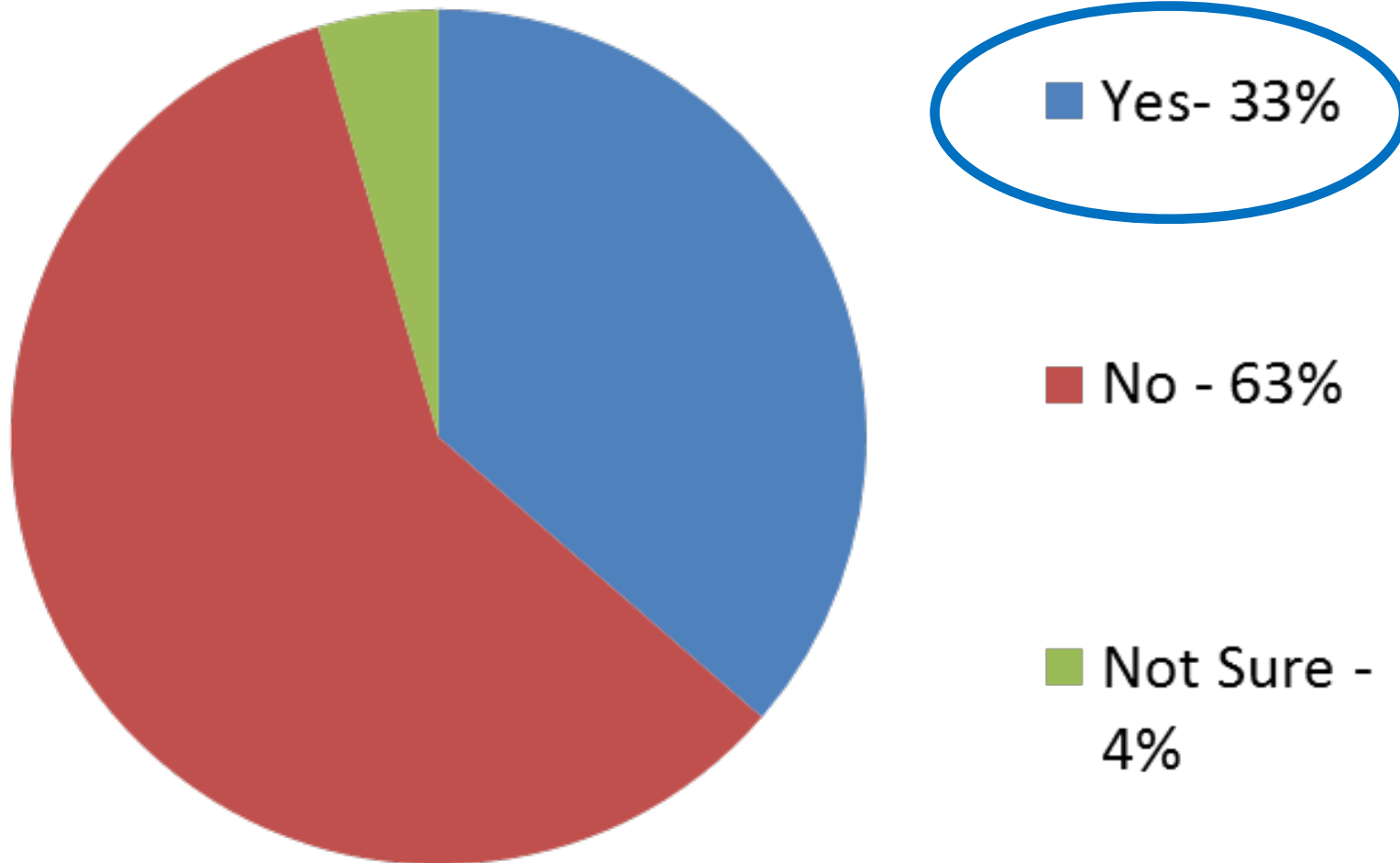
RESEARCH METHOD

- Telephone interviews with Indigenous community members
- Indigenous participants from SK, Treaty areas 4,5,6, 7
- Participants included Elders, water treatment plant operators, youth, women and band office managers
- 21 semi-structured interviews

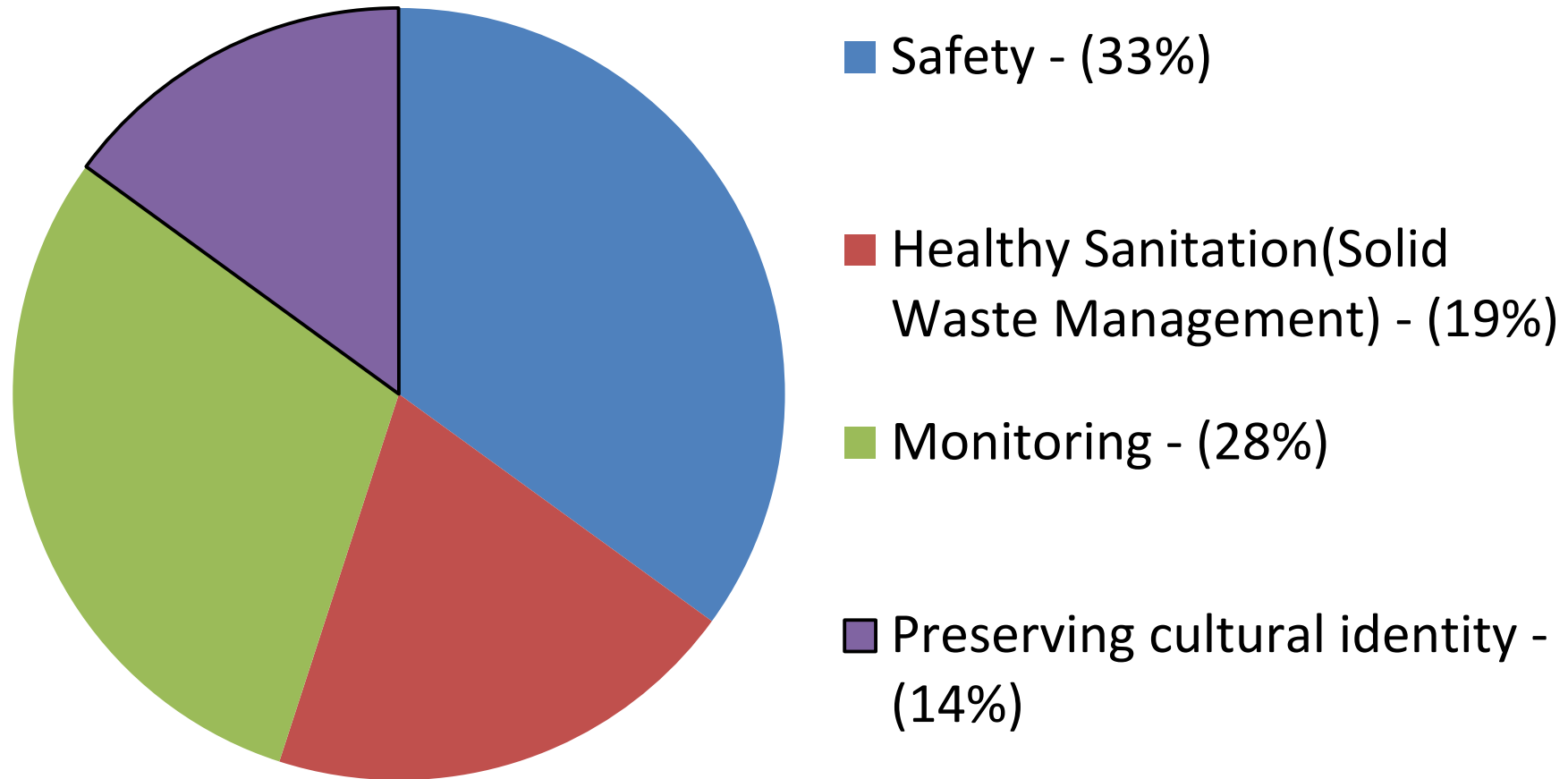
Do you feel you have water security?



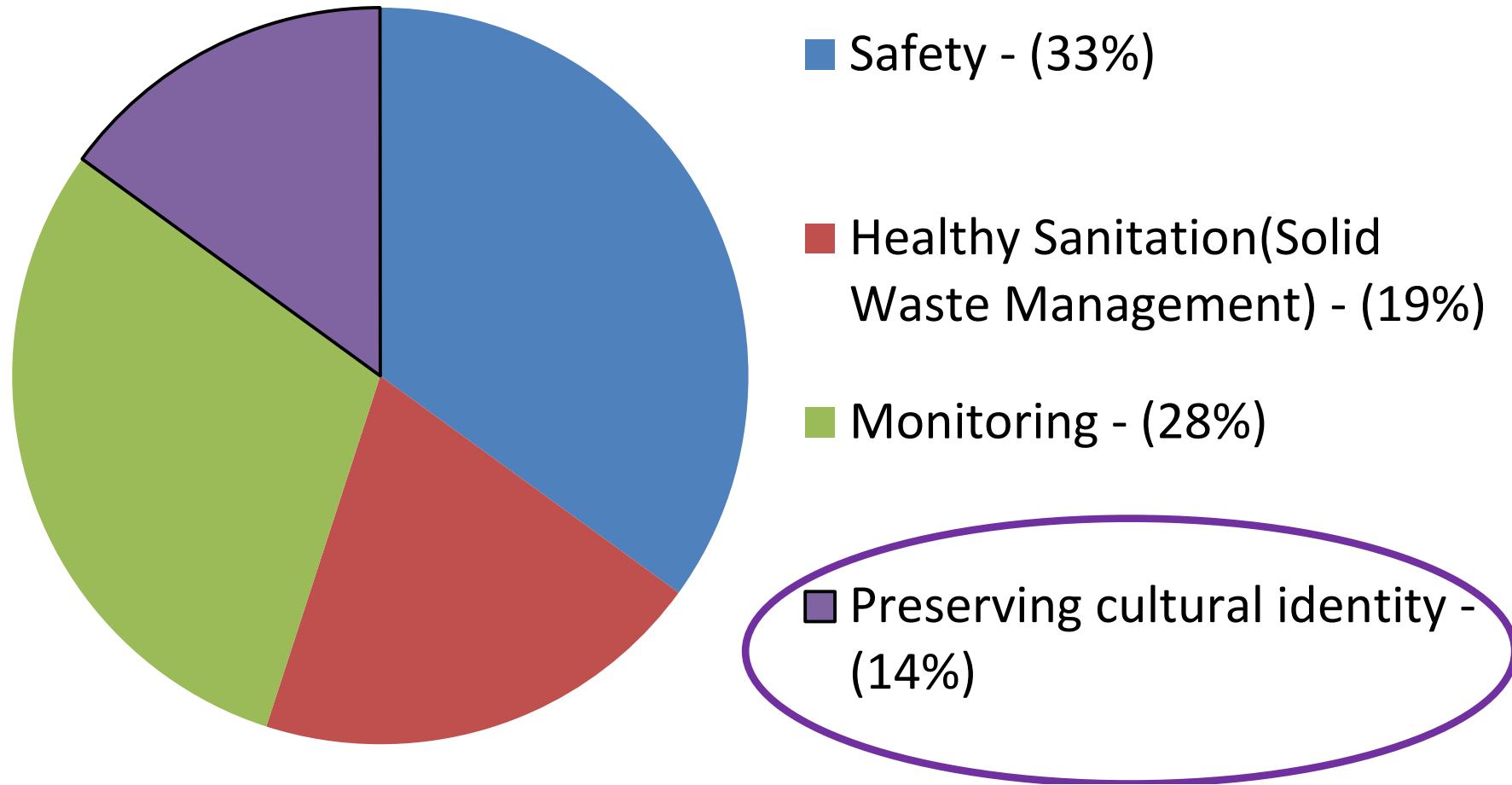
Do you feel you have water security?



Indigenous interpretation of water security



Indigenous interpretation of water security



Themes

Participants' Response

Water and Life

“water means life, it cleanses our hearts, bodies, mind, spirit, and soul. Water is the most important thing next to air, there is no life without water, it keeps me alive.”

Water and Spirit World

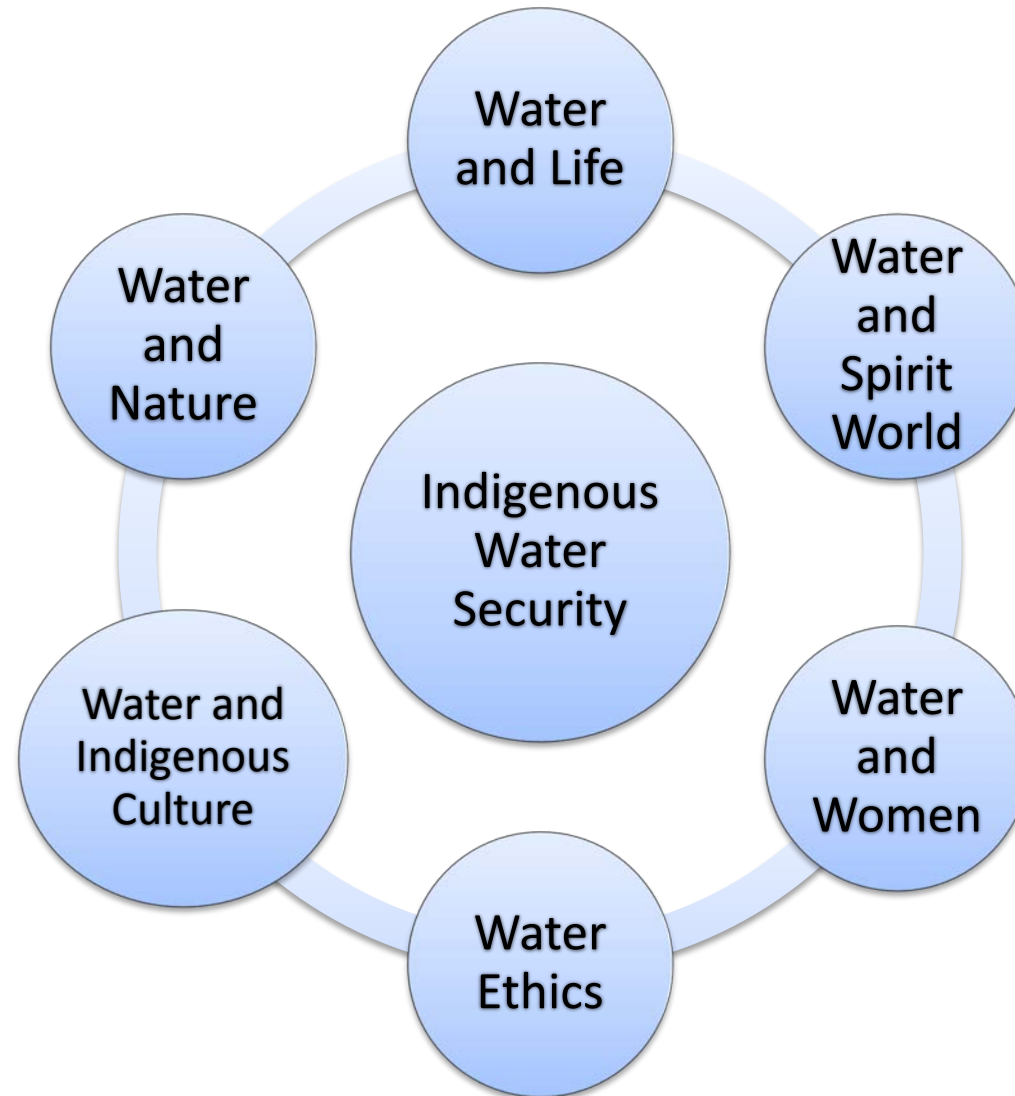
“water has a spirit and it connects the living to our ancestors”. Another participant said “water is a senior spirit and we are humble in its presence”.

Water and Nature

“water security means protecting mother earth, protecting who we are, and protecting what we need to live.”

Themes	Participants' Response
Water Ethics	“I think we need to consider the ethics of water. I think we don't make ethical decisions [about water].”
Water and Indigenous Culture	“There are ceremonies that do happen for certain family groups [in our community on water]. It is not public but more traditional [and] it is not something that is done by the entire community. I would like it to be a community thing.”
Water and Women	“the water spirit is a woman and without women, no man or child will be alive. So women have to play a big role in it [water security]. Women are warriors and [they] stand up for what is right. Without women, no one will exist.”

Indigenous water security



The results present new interpretation of water security:

- An Indigenous perspective holds that **water security includes:**
 - Strong spiritual relationship to the life-giving and medicinal powers of water
 - Water and gender
 - Water and cultural identity
 - Water ethics

Indigenous Water Security

- More recent themes on water security
- Human capability measure (McGregor 2014; Wutich et al 2017)
- Hydro-social relations (Jepson et al 2017)
- Water from natural sources, water as a life-giving entity, and water and gender (Latchmore et al. 2018)

Opportunity for water security research to involve and engage more with traditional science and western science

Questions?

