Social Media Analysis on
Climate Information and Early Warning in Cambodia

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Author: Ana Maria de Sousa Guedes, PhD, *Consultant*

Technical Advisor:
Muhibuddin Usamah, *EWS Project Manager, UNDP Cambodia*

Edited by:
Muhibuddin Usamah, *EWS Project Manager, UNDP Cambodia*
Kelsea Clingeleffer, *Results Monitoring, Evaluation and Reporting Consultant*

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List of Acronyms

API	Application Programming Interface
EWS	Early Warnings System
MoWRAM	Ministry of Water Resources and Meteorology
RGC	Royal Government of Cambodia
UNDP	United Nations Development Programme
WP	Webpage

I. Introduction

Early Warning Systems (EWS) are one of the priorities of the Royal Government of Cambodia (RGC). The purpose of an EWS is to monitor real-time climate and environmental data, detect adverse trends and make predictions of potential impacts by providing early warning information.

The project *"Strengthening Climate Information and Early Warning Systems in Cambodia to Support Climate Resilient Development and Adaptation to Climate Change"* (known herein as the "EWS Project") is being implemented by the United Nations Development Programme (UNDP) to assist the Government in improving EWS gaps and challenges in the country.

This study will provide an analysis of the types of climate information and EWS utilized by the Ministry of Water Resources and Meteorology (MoWRAM) in their social media presence, and try to understand trends and relationships**.**

MoWRAM is responsible for providing information on climate, natural hazards and extreme weather events to the public in Cambodia; this is provided to Cambodian citizens in two ways – via a website, and via publication on MoWRAM's Facebook page. Regular city-based updates of weather information have been advanced with support from the EWS Project. These can be found (in English) at http://www.cambodiameteo.com/ .

In addition, MoWRAM also provides information and early public alerts on its Facebook page. These can be found (in Khmer) at https://www.facebook.com/MoWRAMcambodia/ .

There are, therefore, two types of data:

- **Website**: Fixed information with no feedback from public; and
- **Facebook**: Information with possibility of public interaction.

These two types of information given through the website and the Facebook page were analyzed in detail, with results presented in sections II and III. In doing so, it will be possible for MoWRAM to better understand the climate information needs of the Cambodian public, as well as their feelings and expectations for information dissemination.

In section IV, comparisons between these two vehicles of information were made with some conclusions drawn, followed by recommendations in section V.

Please note that social media changes on a daily basis; in light of this it is important to acknowledge that all information was relevant at time of consultation on the 12th of December, 2019.

II. Website Analysis

MoWRAM, with support from the EWS Project, has been providing regular city-based weather updates in English via the following website since 2016: http://www.cambodiameteo.com/ (see Figure 1).

Figure 1: MoWRAM website

The website presents the following information:

- Daily and 3-day weather forecasts:
  http://www.cambodiameteo.com/map?menu=3&lang=en
- Daily and 3-day marine forecasts:
  http://www.cambodiameteo.com/map?menu=120&lang=en
- An update / warning in Khmer language via the Climate Information Bulletin:
  http://www.cambodiameteo.com/articles?menu=114&lang=en

1. Overview

This website has had a counter for visitor traffic since the 12th of October 2016. The website had a total of 9,576,931 visitors[1], with an average of 17,096 visits/day (see Table 1).

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[1] http://www.supercounters.com/stats/1320145 consulted on the 12th of December 2019.

Table 1: Website Indicators

Visits	9,576,931
Average Visits/Day	17,096
Highest Day	25,727 (9th August 2019)
Visits in 2019*	3,315,852
Visits in 2018	3,155,998

*until date of consultation

2. Access

Visitor information shows that by far, the primary access method is via a mobile device (see Table 2). Approximately only 4% accessed the website using a computer.

Table 2: Website Access

	Visitors	**%**
Mobile	9,106,418	96%
Computer	383,254	4%
TOTAL	9,489,672	100%

3. Website Traffic

The website was developed in October 2016 with a reasonable uptake in its first two months (see Table 3). From 2017 to 2018, there was approximately a 16% increase in traffic; from 2018 to 2019 (until 12th December, date of consultation) there was an increase of about 5%.

Table 3: Traffic by Year and Growth Rate

Year	Visits	Growth Rate
2016	394,084	
2017	2,710,935	
2018	3,155,998	+16,4%
2019*	3,315,914	+5.1%

* Until 12th December 2019

Figure 2 shows an annual increasing trend of website visits. As the total data for 2019 was not available at time pf publication, the exact growth rate compared to the previous year is unknown. However, given that data was collected until December, it seems that the website visit growth in 2019 was less pronounced than in 2018.
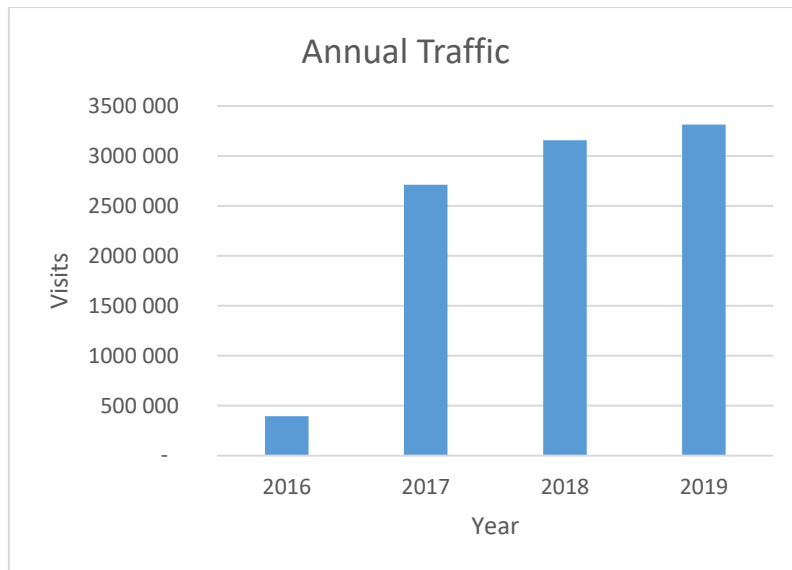
Figure 2: Annual Traffic

Figure 3 shows the monthly traffic volume since the website deployment. Some trends describing the website browsing habits also provide indications of citizens' climate information needs. There is a steep curve showing an increase in accesses from May to October and drastically decreasing from November to April, demonstrating the seasonality of website access. This could lead to the conclusion that information is most sought after by Cambodian citizens during monsoon season.

Looking at hourly traffic in Figure 4 it can be observed that visits to the website are done throughout the day, slowing down during working time from 11AM until 5PM.
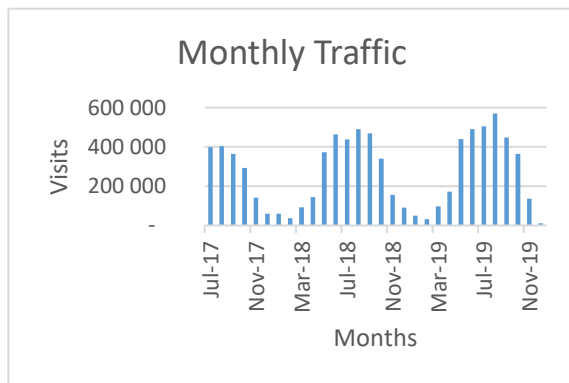
Figure 3: Monthly Traffic
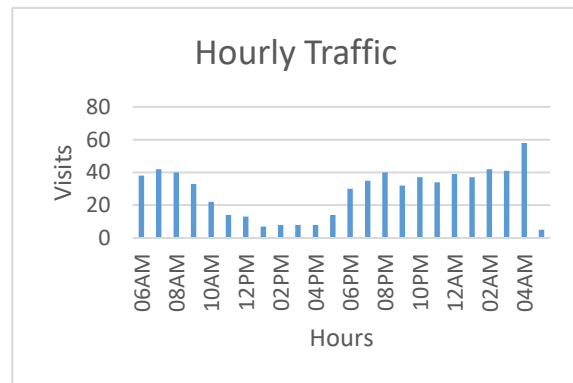
Figure 3: Hourly Traffic

4. Visits per Country

The largest number of visits came from Cambodia, with over 5 million visits representing 92.8% of total visits. In second place (much lower than first), Vietnam had approximately 101.5 thousand (1.85%), followed by 93.3 thousand (1.7%) visits from the United States of America. The website also had visits from 27 other countries[2], each with less than 1% of the total share of visits (see Annex 2).

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[2] Philippines, Thailand, India, Hong Kong, Singapore, China, Australia, Taiwan, Malaysia, Japan, United Kingdom, Germany, Canada, European Union, France, New Zealand, Republic of Korea, Russian Federation, Switzerland, Italy, Netherlands, Indonesia, Lao, Macao, Belgium, Spain and Austria.

III. MoWRAM's Social Media Analysis

1. Overview

The MoWRAM Facebook page is the main source of relevant information for social media, and is found at https://www.facebook.com/MoWRAMcambodia/. This page was created on the 18th of January 2016 and has 913,772 followers. The page displays readings from water monitoring stations and some occasional events, but most publications are of newsletters, as seen in the example of Figure 5.

Figure 5: Newsletter Post on Facebook

2. Data Used

Data was extracted through Facebook's private Application Programming Interface (API). Data has been anonymized in accordance with Facebook's new policies, therefore, demographic information on followers is no longer available.

Social media has been of great interest since its inception. Data from social media, for example, can be used to understand populations' views and experiences in real time without the need to use classical processes such as sample surveys. The amount of data produced daily has grown exponentially, which has led to development of a variety of methodologies and tools for processing this data. Many universities and researchers have taken the lead in this very promising scientific field over the past decade, with several books published, and courses taught on this topic. However, recent changes to Facebook's data policy, put in place in November 2019, has challenged these academic advances in social media use almost overnight. As a result, only public data (such as the name of the commenting user and other information the user has decided to make public) can be used, and restricted data only available through a new registration process for API user approval.

Data relating to all posts made by MoWRAM since the creation of the page was gathered from the Facebook platform until the 30th of November 2019 (see Table 4).

Table 4: Data Extracted from Facebook API

Variables	Description
"from id"	MoWRAM Facebook page ID
"from name"	MoWRAM Facebook page name
"message"	Text message
"created time"	Time when created
"link"	If there is a link in the message
"id"	Post ID
"likes count"	Number of likes on post
"comments count"	Number of comments on post
"shares count"	Number of times post shared
"love count"*	Number of 'love' reactions post had
"haha count"*	Number of 'laugh' reactions post had
"wow count"*	Number of 'surprise' reactions post had
"sad count"*	Number of 'sadness' reactions post had
"angry count"*	Number of 'anger' reactions post had

*After March 2016

3. Data Analysis

By analyzing data extracted from the MoWRAM Facebook page, it is possible to better understand and draw conclusions on how information has been given to and received by followers.

Cambodia has a tropical climate characterized by two seasons: dry and rainfall. The dry season runs from December to April and the rainy season from May to November. This information is important when analyzing patterns in data.

3.1. MoWRAM Posts

3.1.1 Daily time series of number of posts by MoWRAM

Looking at the number of daily publications made by MoWRAM, a constant cadence with a tendency to increase in the rainy periods can be seen (see Figure 6). Also note the significant increase in publications in November 2019.
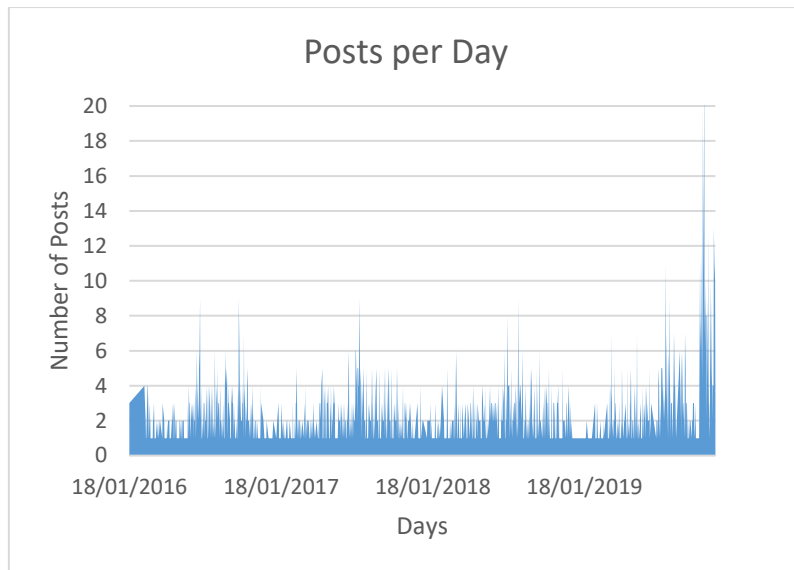
Figure 6: Number of Facebook Posts Per Day

3.1.2 Bar plot with number of posts per month.

When data is grouped by month (see Figure 7), the trend that follows Cambodia's two climate seasons becomes very pronounced, with an increase in the number of Facebook posts during the rainy months from May to October and a decrease in the dry season from November to April.
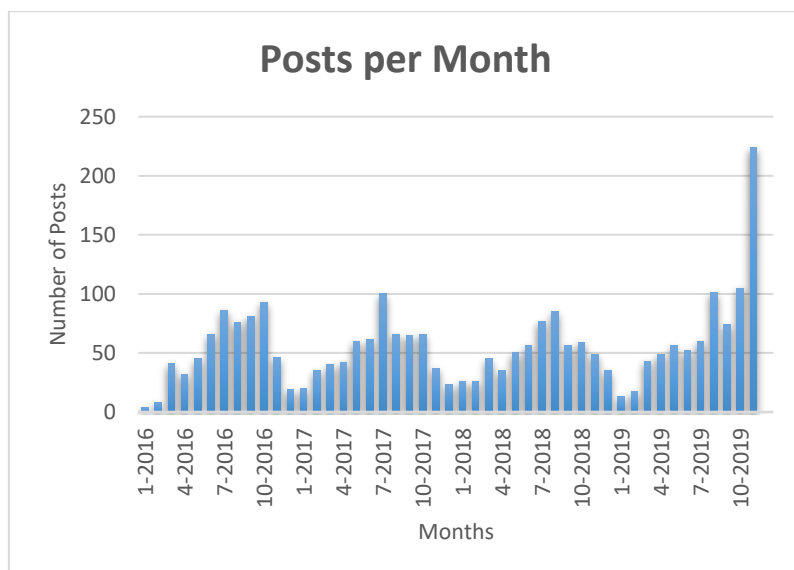
Figure 7: Number of Facebook Posts Per Month

3.1.3 Bar plot with number of posts per year.

The number of posts per year has been roughly constant, with the exception of the last few months studied, especially November 2019, when number of posts began to increase (see Figure 8 and Table 5).
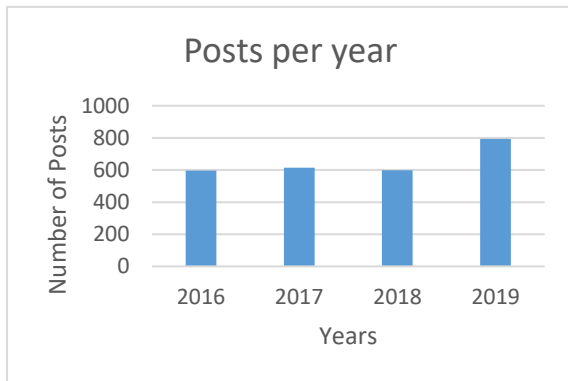
Figure 8: Number of Facebook Posts Per Year

Years	Posts	Growth Rate
2016	596	
2017	616	3%
2018	600	-3%
*2019	794	32%

* December is not included for 2019

Table 5: Posts and Growth Rate Per Year

3.2. Number of Shares

This section will assess the number of times that MoWRAM posts were shared.

3.2.1 Daily time series of shares

Figure 9 shows the number of shares per day. There was one day in which shares peaked much higher than any other day. This was due to the rare event of a post going viral, something which can be challenging to make happen.
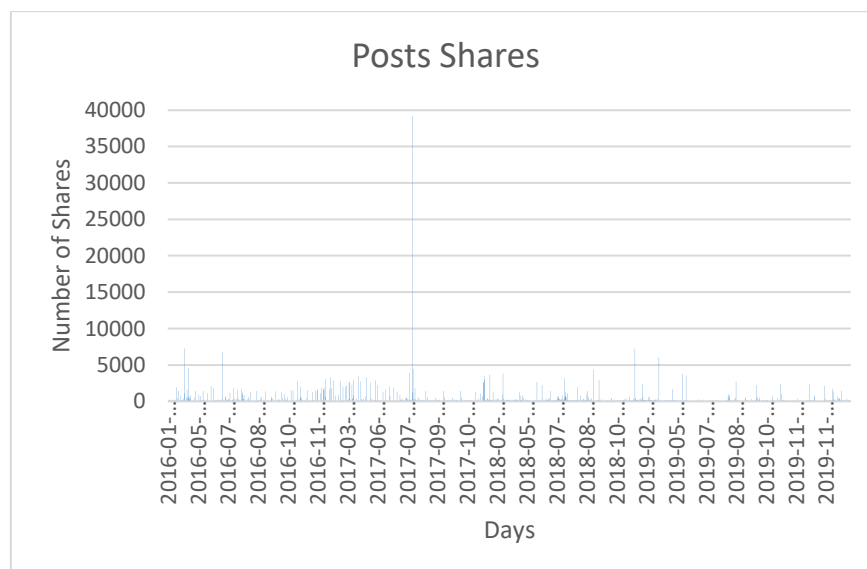
Figure 9: Number of Shares Per Day

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3.2.2 Peaks of the time series: *what* and *when* was shared the most?

The peak identified was due to a video post on the 26th of July 2017 (see Figure 10). The video[3] was about river flooding in Trapeang district, Odor Meanchey, and had so many shares (39,189 shares) that it went viral on Facebook and had millions of visualizations.

Figure 10: Video Post with Highest Number of Shares

In order to understand other share peaks, the previous value needed to be replaced by the second maximum, which produced the following graph (Figure 11). Four other peaks became clear:
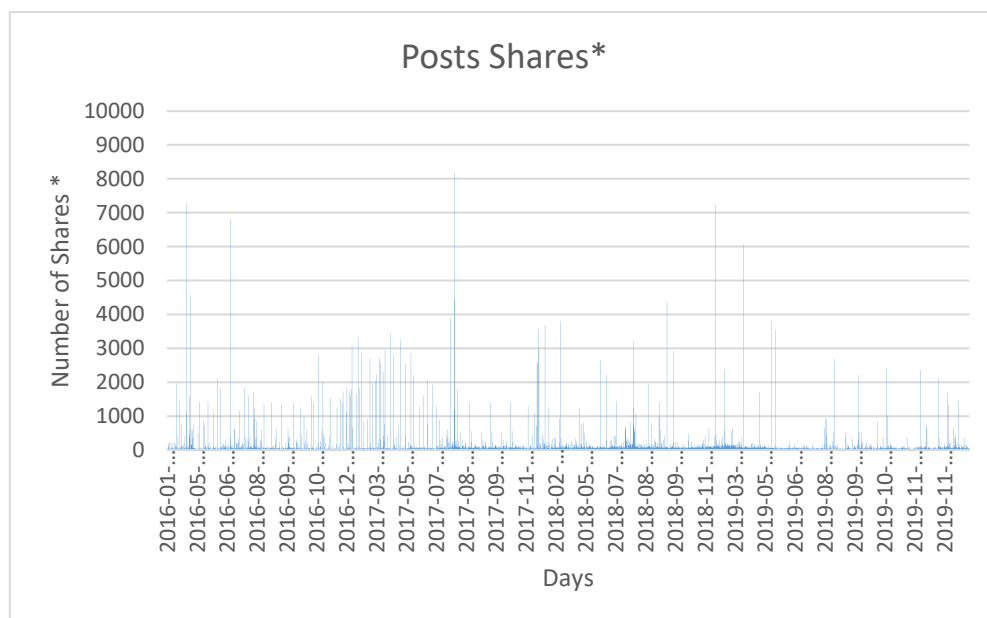
Figure 11: Number of Shares Per Day Without 07-26-2017 Peak

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[3] https://www.facebook.com/436289029896342/posts/670572823134627/

These four most shared posts (with the exception of the viral post) were related to weather newsletters, and can be seen below in Table 6:

Table 6: Four Most Shared Posts on MoWRAM's Facebook (with Exception of Viral Post)

Post	Date	No. of Shares	Original Comment	English Translation
	2016-04-18	7,289	ចាប់ពីថ្ងៃទី ១៩-២២ ខែមេសា ឆ្នាំ ២០១៦ ភ្ជៀងកក់ខែ លាយឡំជាមួយនឹង បាតុភូត ផ្គរ រន្ទះ និងខ្យល់កន្ត្រាក់ អាច នឹងមានឥទ្ធិពលខ្លាំង នៅតំបន់វាលទំនាប ភាគពាយ័ព្យ និងតំបន់ខ្ពង់រាបភាគខាងជើង ។	From 19th to 22nd April 2016, the rainy season will start which will include thunder, lightning, and storms. The northwest and north provinces in Cambodia could be most impacted.
	2016-07-04	6,818	ព្យុះទី១ ប្រចាំឆ្នាំ ២០១៦ បានកើតឡើង ។ បាតុភូតផ្គរ ផ្គរ រន្ទះ ខ្យល់កន្ត្រាក់ អាច នឹងមានឥទ្ធិពលខ្លាំងលើព្រះរាជាណាចក្រ កម្ពុជា ចាប់ពីថ្ងៃទី ០៧ ដល់ថ្ងៃ ១២ ខែ កក្កដា ឆ្នាំ ២០១៦ ។	The 1st storm for 2016 has happened. Rain, thunder, lightning, and wind will affect the Kingdom of Cambodia from 7th to 12th July 2016.
	2018-12-04	7,236	ព្យាករណ៍អាកាសធាតុ (ចាប់ពីថ្ងៃទី ០៥-១១ ខែធ្នូ ឆ្នាំ ២០១៨) ។ ភ្ជៀងនឹងធ្លាក់ រាយប៉ាយក្នុងក្របខ័ណ្ឌទូទាំងប្រទេស ចាប់ ពីថ្ងៃទី ០៧-១១ ខែធ្នូ ។	Weather Forecast (5th-11th December 2018): rain will fall throughout the nation from December 07th to 11th.
	2019-03-25	6,056	សេចក្តីជូនដំណឹង។ ស្តីពី ស្ថានភាព អាកាសធាតុ	Alerts of the weather event

3.2.3 Number of shares per month

Figure 12 shows shares grouped by month. Please note that the viral post in July 2017 accentuated the peak in that month. The share trend does not follow the two seasons of Cambodia climate as much as seen in number of posts, but it is still clear there is a decrease in dry season months and an increase during the rainy season.
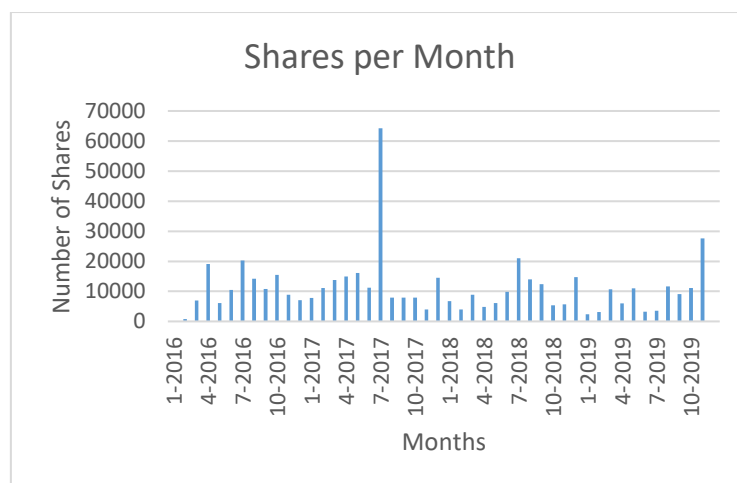
Figure 12: Number of Shares Per Month

3.2.4 Number of shares per year

Figure 13 and Table 7 show the number of shares and its growth rate per year. Due to the viral share in 2017 mentioned above, the yearly number of shares for 2017 was very high. In 2018 the number of shares was slightly lower than in 2016 (the first year of the Facebook page); from January to November 2019, the number of shares was less than 100 thousand, however the full years' worth of data was not completed at time of collection therefore the trend cannot be seen.
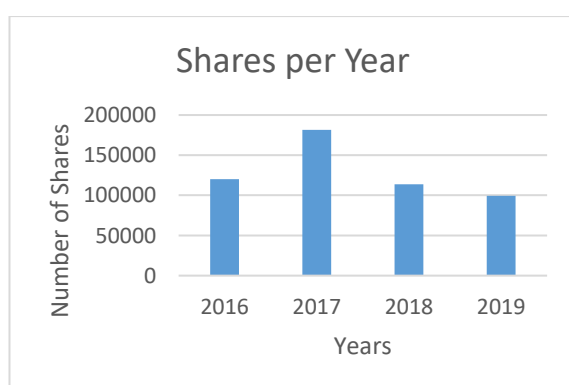
Figure 13: Number of Shares Per Year

Year	Shares	Growth rate
2016	120,098	
2017	181,390	51%
2018	113,619	-37%
*2019	99,402	-13%

December not included for 2019

Table 7: Share Growth Rate Per Year

3.3. Number of Reactions

This section will assess the number of 'likes' and other reactions ('happy', 'love', 'wow', 'sad'

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and 'angry') that MoWRAM Facebook posts received.

3.3.1 Daily time series of reactions

Figure 14 shows the daily number of reactions ('happy', 'love', 'wow', 'sad' and 'angry') MoWRAM posts received.
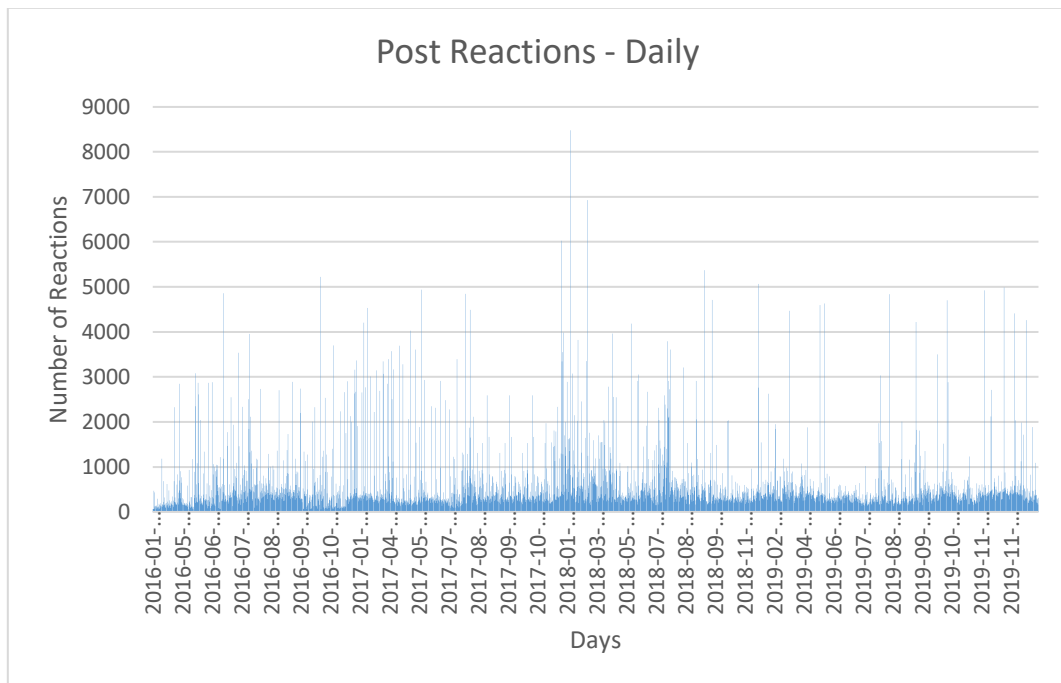
Figure 14: Number of Reactions Per Day

3.3.2 What and when was reacted to the most?

The weather bulletin with the weekly weather forecast on the 23rd of January 2018 was the post with the most reactions, at 8,477 (Figure 15):

Figure 15: Post with the Most Reactions ('Likes' and Others)

3.3.3 Number of reactions per month

Figure 16 shows the number of reactions per month for MoWRAM posts. It can be seen that there is a tendency that follows that two climate seasons. Also note the increase in November 2019, up until the date of data collection.
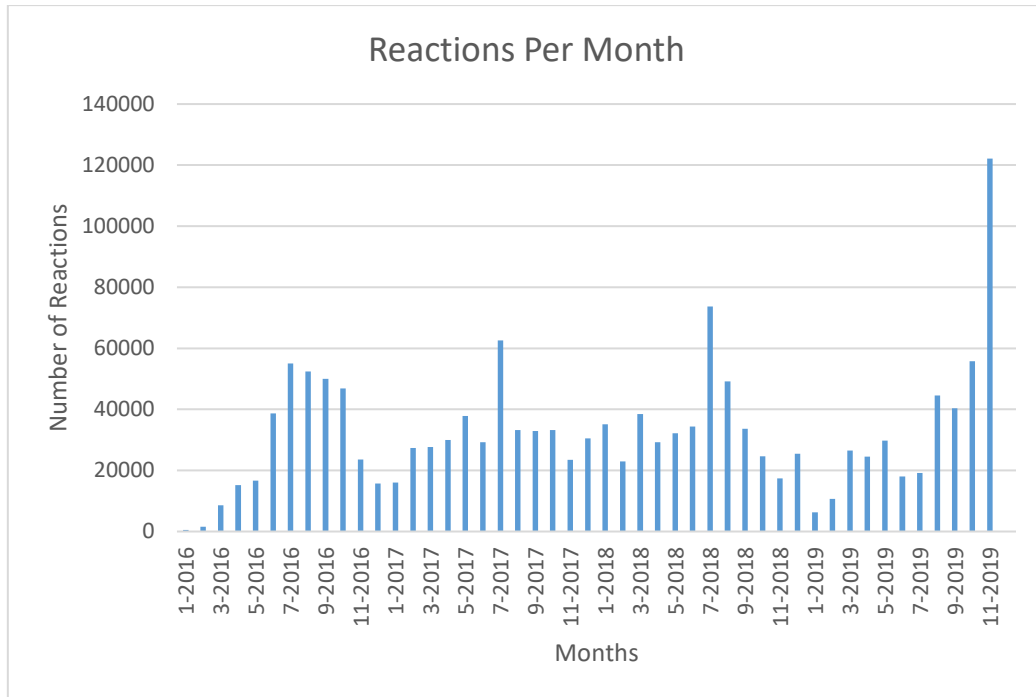
Figure 16: Number of Reactions Per Month

3.3.4 Number of reactions per year

Figure 17 and Table 8 show an increasing trend of reactions to MoWRAM posts. The year 2019 is not complete but the tendency is to exceed previous years when related to reactions to posts.
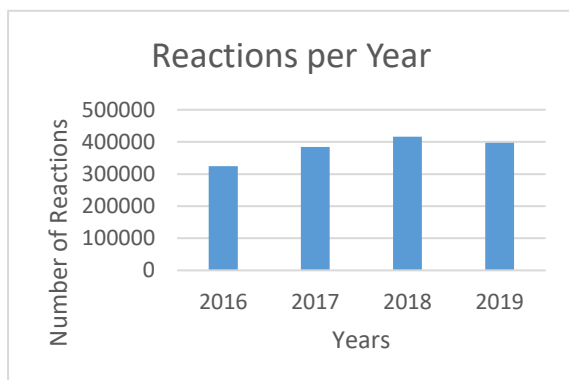
Figure 17: Number of Reactions Per Year

Year	Reactions	Growth Rate
2016	324,601	
2017	383,902	18.3%
2018	416,501	8.5%
2019*	397,652	-4.5%

* December is not included for 2019

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Table 8: Reaction Growth Rate Per Year

3.4. Number of Comments

This section will assess the number of comments made by the public on MoWRAM's Facebook posts.

3.4.1 Daily time series of number of comments

Figure 18 shows the daily number of comments from the public to MoWRAM's Facebook posts. Density has been increasing since the beginning of 2019, which suggests that followers are commenting increasingly more throughout the year.
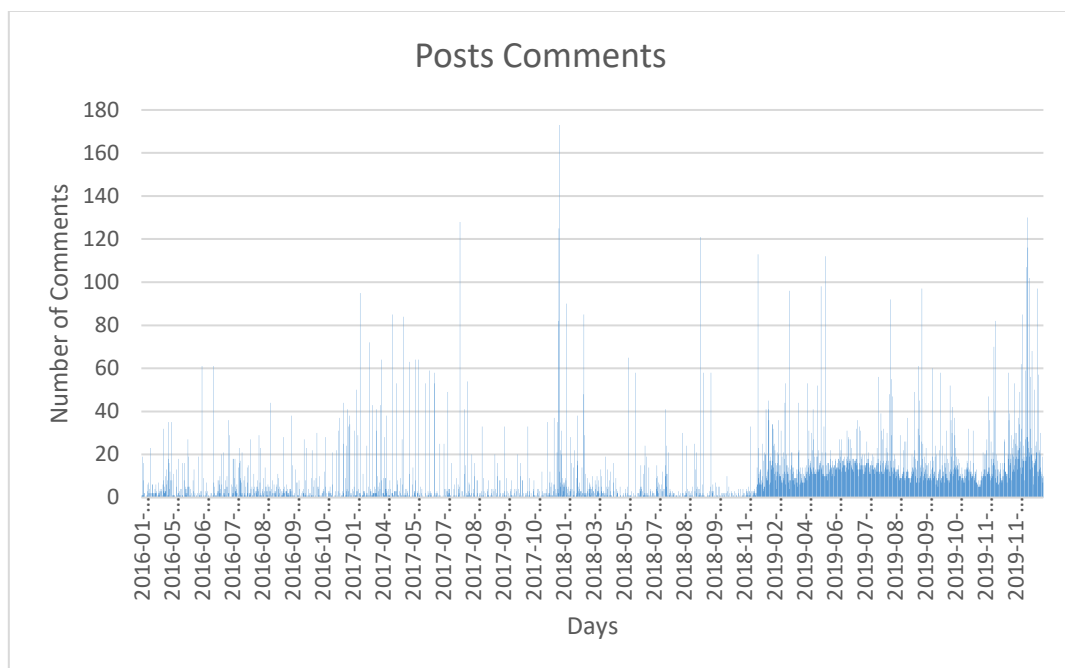
Figure 18: Number of Comments Per Day

3.4.2 *What* and *when* was commented the most?

A weather bulletin describing information about a hurricane, posted on the 24th December 2017, was the post with the most comments at 180 (see Figure 19). It had also a very high number of reactions and shares. The post translates to: Additional Notice on the impact of Hurricane 27 (TEMBIN) for the Kingdom of Cambodia: Typhoon Binburn will affect the Kingdom of Cambodia by causing strong winds, with strong rains on the sea and coastal areas, causing moderate to heavy rainfall throughout the country. Travelers, especially fishermen, should suspend activities from the evening of December 25 until the weather improves.

Figure 19: Post with the Most Comments

3.4.3 Number of comments per month

Figure 20 shows the number of comments made each month since the page's inception. The graph can be divided into two parts: before and after January 2019. From the beginning of 2016 until the end of 2018, the monthly number of comments approximately follows the trend curve of the weather seasons. Since January 2019, there has been growing follower participation through commenting on posts.
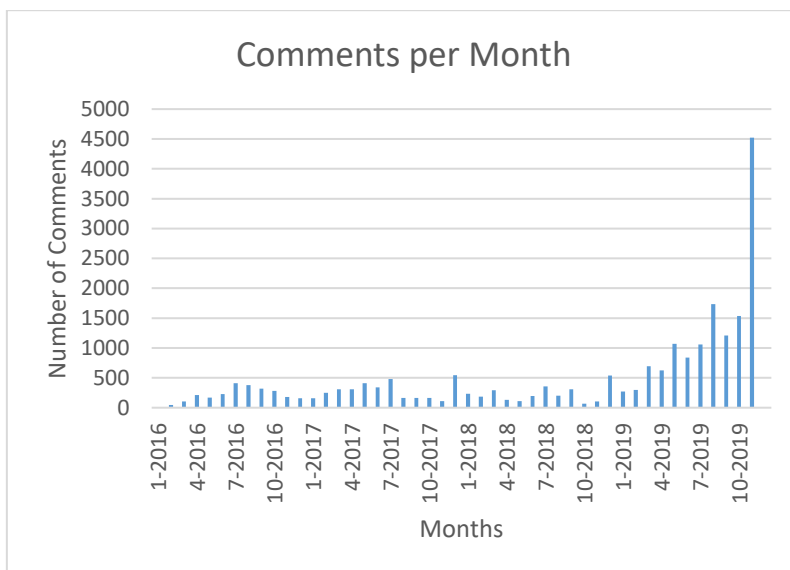
Figure 40: Number of Comments Per Month

3.4.4 Number of comments per year

Figure 21 and Table 9 show the number of comments per year. Consistent with above, there has been a major increase in comments on MoWRAM's Facebook posts.
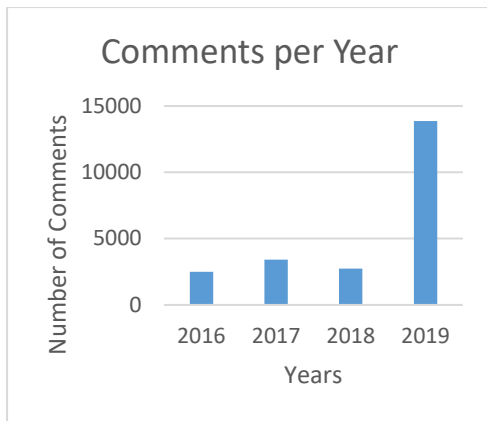
Figure 21: Number of Comments Per Year

Year	Comments	Growth Rate
2016	2,501	
2017	3,404	+36.1%
2018	2,729	−19.8%
2019	13,856	+407.7%

Table 9: Comment Growth Rate Per Year

4. Relationships Between Number of Posts, Comments, Reactions and Shares

It is possible to correlate the intensity of information given by MoWRAM on its Facebook page and feedback by followers. Figure 22 shows monthly volume of posts, comments, reactions and shares over time, allowing identification of trends.
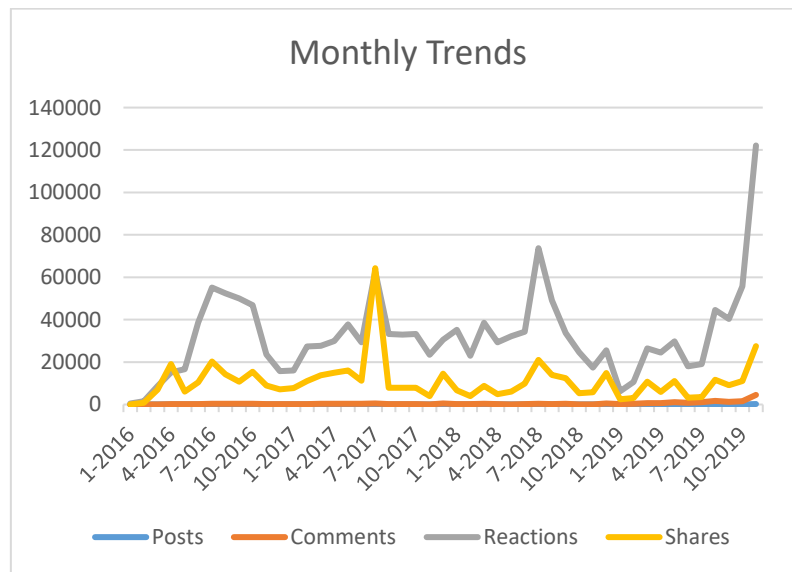
Figure 22: Trends of Posts, Comments, Reactions and Shares

Table 10 shows the correlation between these four data series; all correlations are positive, indicating that all the variables are directly related - increases in one is related with increases in other data series.

Table 10: Kendall's Correlation for Serial Dependence Between Posts, Comments, Reactions and Shares

	Posts	Comments	Reactions	Shares
Posts	**1.0000000**	0.3283605	0.6548759	0.3985165
Comments		**1.0000000**	0.3573089	0.4063087
Reactions			**1.0000000**	0.5419176
Shares				**1.0000000**

The strongest dependence occurs between posts and reactions, followed by shares and reactions, confirming that there is a positive moderate relation between intensity of information given on Facebook and feedback by followers.

IV. Facebook Citizens Comments Analysis

This section will focus on the public who interact with MoWRAM's Facebook page, and analyze the comments and emotions left on posts.

1. Data Used

Data was extracted through Facebook's private Application Programming Interface version 5.0, introduced on October 29, 2019 (Graph API v5.0). This version has limitations: data has been anonymized by Facebook due to its new policy and almost all information has been erased, with information on users interacting and commenting no longer being available. For each post, the fields obtained can be seen in Table 11.

Table 11: Data Extracted from Facebook API Related to Comments

Variables	Description
"from id"	MoWRAM Facebook page ID
"from name"	MoWRAM Facebook page name
"message"	Comment message
"created time"	Time when message was made

In March 2016, Facebook added the 'love', 'haha', 'wow', 'sad', and 'angry' reactions to its 'like' button, allowing the public to react to posts according to their specific emotion. Table 12 shows the data collected regarding public's reactions types for each post.

Table 12: Data Extracted from Facebook API Related to Posts

Variables	Description
"from id"	MoWRAM Facebook page ID
"from name"	MoWRAM Facebook page name
"message"	Text message
"created time"	Time when created
"link"	If there is a link in the message
"id"	Post ID
"likes count"	Number of likes post had
"comments count"	Number of comments post had
"shares count"	Number of shares post had
"love count"*	Number of 'love' post had
"haha count"*	Number of 'laugh' post had
"wow count"*	Number of 'surprise' post had
"sad count"*	Number of 'sadness' post had
"angry count"*	Number of 'anger' post had

*After March 2016

Approximately 2,500 comments were collected, half of them with text and the other half with *stickers,* mostly showing 'love'.

2. Data Analysis

Data processing started with cleaning. Special characters, such as "stop words"[4] were deleted before text mining. Comments with cleaned text were analyzed in the following sections:

2.1 Frequency of Words in Comments

After pre-processing data, frequencies of words were calculated. After analyzing word frequencies, it was noted that words of the same family[5] could be grouped. The appropriate substitutions were made; with that absolute, frequency of word's family became larger. All replacements made can be found on Annex 4.

2.1.1 Wordcloud

Figure 23 shows the *Wordcloud* of words used by citizens in their comments. Frequency reflects its frequency in the text: the larger the word the more often was used. From the *Wordcloud* it is clear that, above all, the citizens who commented on the MoWRAM page were grateful for the information, with "thanks" being the most frequently used word.

Figure 23: WordCloud with Words Most Used in Comments

Figure 24 and Table 13 show the eleven most frequently words used in comments. A complete list of words with frequencies greater than 5 can be found in Annex 3.

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[4] Stop words are generally the most common words in a language.
[5] Words grouped by meaning: rainy, raining, rainfall, rainstorm, rainstorms and rain; thanks, thx, thankful, thankfully and thank you; informing, information, informed, info and inform. All replacements can be found in Annex 4.

Figure 24: Most Frequently Used Words in Comments

Word	Frequency
thanks	1348
rain	983
water	789
ministry	593
inform	392
much	340
district	329
resources	321
province	261
day	232
rice	217

Table 13: Word Frequencies

"Thanks" (including its family: "thanks", "thx", "thankful", "thankfully" and "thank you") occurred more than 1,300 times, followed by "rain" (including its family: "rainy", "raining", "rainfall", "rainstorm", "rainstorms" and "rains") with almost 1,000 occurrences, then "water" with almost 800 occurrences. This demonstrates that the themes most approached by citizens when commenting on MoWRAM's Facebook page were "thanks", "rain" and "water".

2.1.2 Words Associations

Following this process, it was possible to analyze the relationships between words used in comments on MoWRAM's Facebook posts. The correlation between two words was calculated as a correlation coefficient between 0 and 1 - the stronger the association between two words, the higher the correlation coefficient would be. The full list of associations and respective correlation scores can be found in Annex 5. For the purposes of this study, the four most used words were analyzed: "thanks", "rain", "water" and "ministry".

Associations with "thanks": Figure 25 and Table 14 show the words most associated with "thanks". Citizens expressed gratitude for information shared about weather, particularly rain.
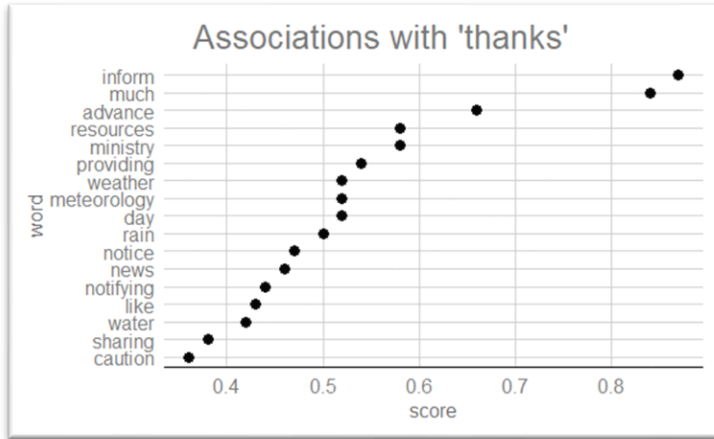
Figure 25: Associations with "Thanks"

Word	Score
inform	0.87
much	0.84
advance	0.66
ministry	0.58
resources	0.58
providing	0.54
day	0.52
meteorology	0.52
weather	0.52
rain	0.50
notice	0.47
news	0.46
notifying	0.44
like	0.43
water	0.42
sharing	0.38

Table 14: "Thanks" Word Association Scores

Associations with "rain": As seen in Figure 26 and Table 15, "rain" (and its family) was associated with provinces - Battambang, Tboung Khmum and Siem Reap were the most mentioned, but others were also associated.
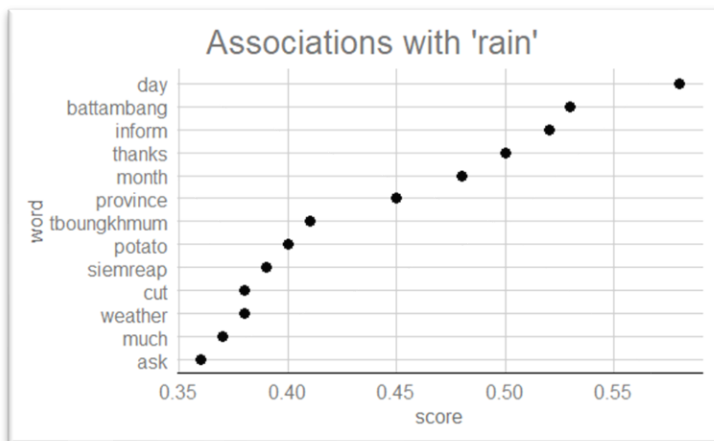
Figure 26: Associations with "Rain"

Word	Score
day	0.58
battambang	**0.53**
inform	0.52
thanks	0.50
month	0.48
province	0.45
tboungkhmum	**0.41**
potato	0.40
siemreap	**0.39**
weather	0.38
cut	0.38
much	0.37
ask	0.36

Table 15: "Rain" Word Association Scores

Associations with "water": The most correlated words with "water (and its family) were those in the MoWRAM name ('resources', 'ministry', 'meteorology') as seen in Figure 27 and Table 16. Following this, citizens' water-related comments were related to agriculture, with words such as rice, fields, farmer, canal, and irrigation.
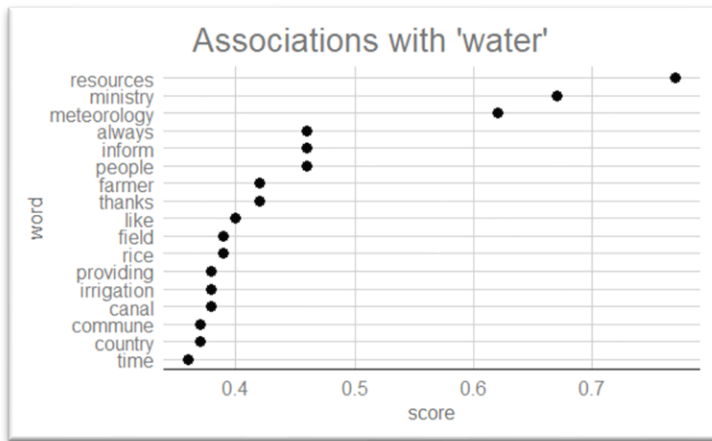
Figure 257: Associations with "Water"

Word	Score
resources	0.77
ministry	0.67
meteorology	0.62
people	0.46
inform	0.46
always	0.46
thanks	0.42
farmer	0.42
like	0.40
rice	0.39
field	0.39
canal	0.38
irrigation	0.38

Table 16: "Water" Word Association Scores

Associations with "ministry":

Figure 28 and Table 17 show associations in comments associated with "ministry". Besides thanking for providing information, agricultural topics appeared in the most correlated words.
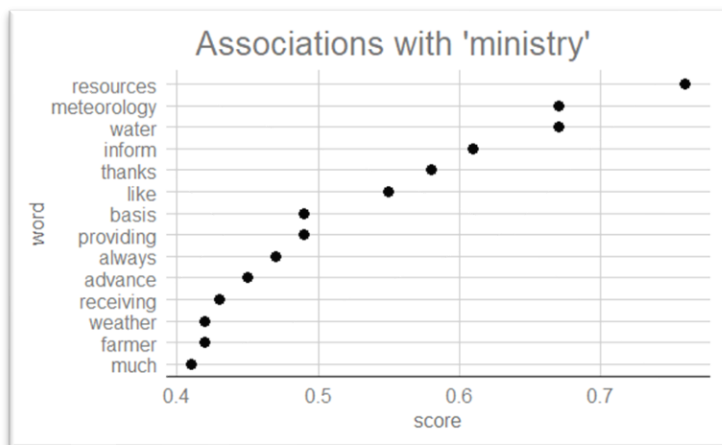
Figure 28: Associations with "Ministry"

Word	Score
resources	0.76
water	0.67
meteorology	0.67
inform	0.61
thanks	0.58
like	0.55
providing	0.49
basis	0.49
always	0.47
advance	0.45
receiving	0.43
farmer	0.42
weather	0.42

Table 17: "Ministry" Word Association Scores

2.2 Types of Reactions

It was also possible to analyze the type of reaction left by the public regarding MoWRAM's Facebook posts. In doing so, the feelings portrayed by the public towards MoWRAM's posts can be assessed.

This Facebook feature was implemented in March 2016, one month after commencement of

the MoWRAM Facebook page. As a result, it was possible to have an almost complete view of how the public have reacted to posts, and any changes that have occurred over time; Figure 29 shows the total number of reactions on MoWRAM posts (with the exceptions of 'likes'). The most used reaction was 'love', and the least used was 'anger'.
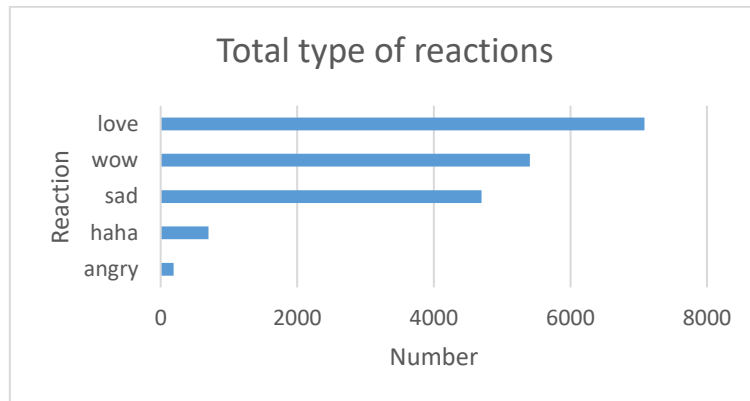
Figure 29: Types of Reactions by Total

When plotting the daily time series with the five different types of reactions, a peak of 'sad' stands out on the 27th of July 2018[6], when MoWRAM published photographs of river floods that were occurring (Figures 30 and 31).

Figure 306: Post with Most Reactions

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[6] https://www.facebook.com/436289029896342/posts/849065425285365/
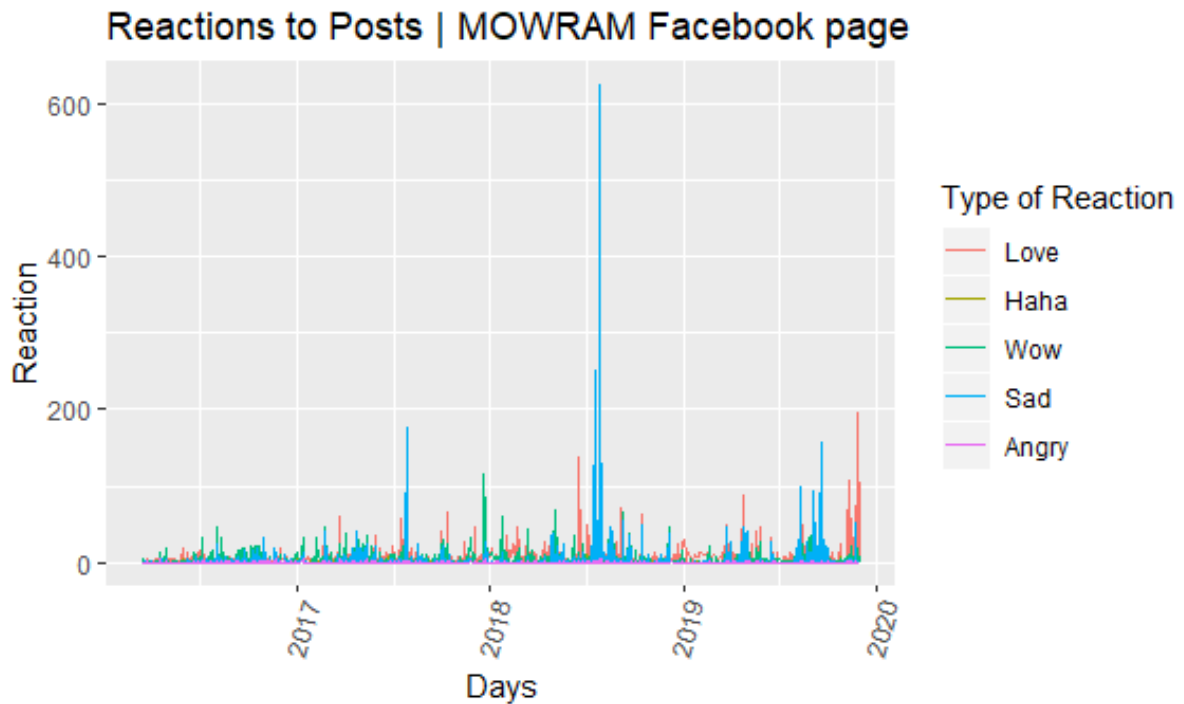
Figure 31: Daily Reactions by Type

MoWRAM began sharing more photos of events they participated in during November 2019. As a result, public appreciation was expressed, as seen through several peaks of the 'love' reaction, which has continued to increase (see Figure 32).

Figures 33 and 34 show the monthly volumes of 'haha' and 'angry' respectively. These two reactions both were used in low volumes; use of the 'angry' reaction was almost residual. Figures 35 and 36 show the monthly volumes of 'wow' and 'sad' respectively, showing a peak in July 2018 due to the post with floods pictures that got almost two thousand reactions.
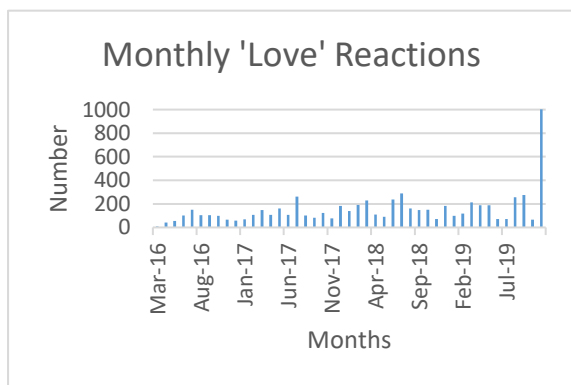
Figure 32: Monthly Number of 'Love' Reactions
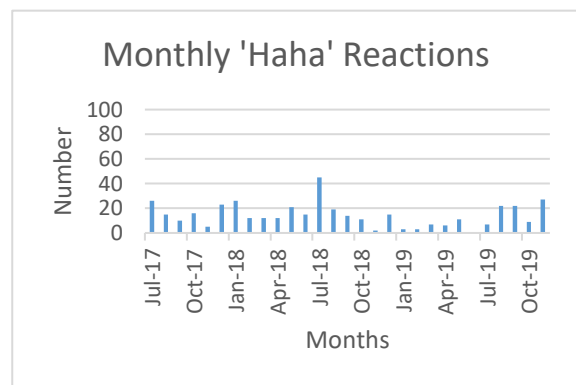
Figure 7: Monthly Number of 'Haha' Reactions
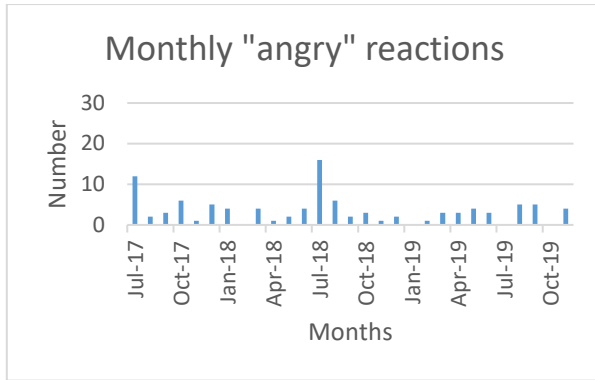
Figure 34: Monthly Number of 'Angry' Reactions
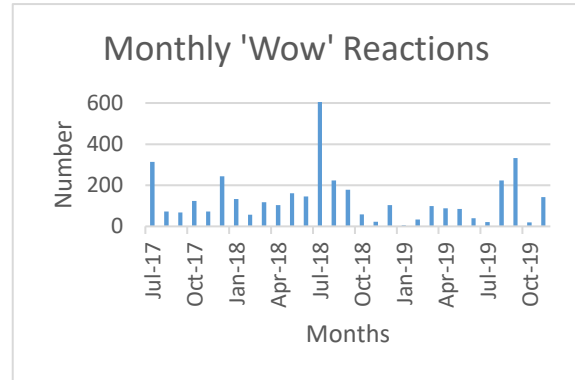
Figure 8: Monthly Number of 'Wow' Reactions
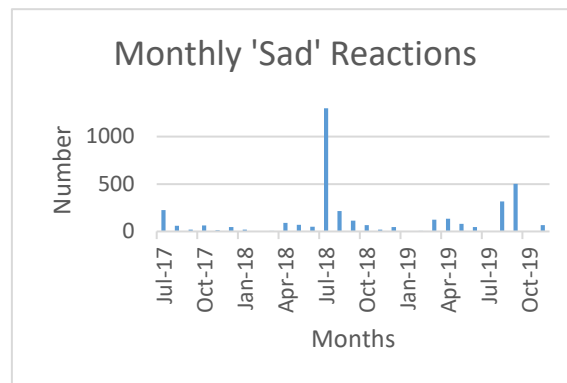
Figure 96: Monthly Number of 'Sad' Reactions

Table 18 shows that 'wow' was positively correlated with 'haha', 'angry' and 'sad', with correlations of 0.68, 0.65 and 0.59 respectively.

Table 18: Kendall's tau for Serial Dependence Between Reactions

	love	haha	wow	sad	angry
love	**1.00000000**	0.4781280	0.5414096	0.4535319	0.5163258
haha		**1.0000000**	0.6750527	0.3709460	0.5195376
wow			**1.0000000**	0.5940612	0.6485167
sad				**1.0000000**	0.5378535
angry					**1.0000000**

Figure 37 shows the volume of each reaction per year: 'love' showed a marked growth trend over the years, 'anger' remained residual since the beginning, 'haha' was relatively stable, and 'wow' and 'sad' grew in the first 3 years and corrected during 2019.
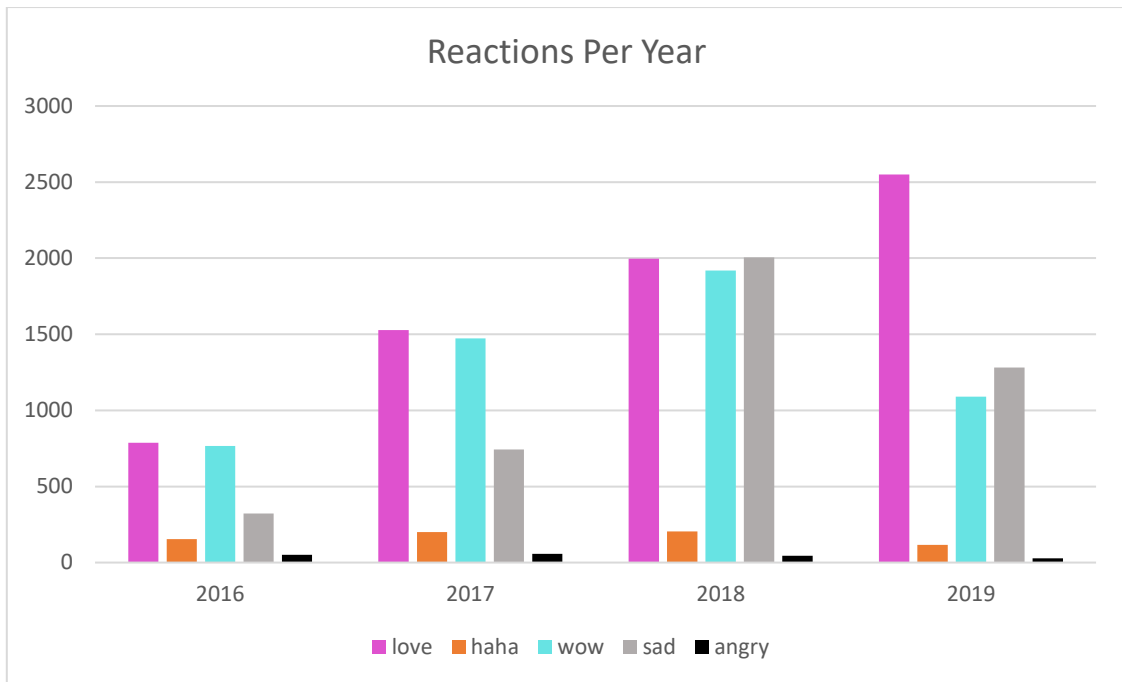
Figure 37: Reaction Volume Per Year

2.3 Types of Shares

MoWRAM Facebook posts mostly contain photos and videos. Since the page's conception, MoWRAM posted photos on 1,033 individual days and videos on 63 days. Photos had a total of 428,164 shares and videos had a total of 73,667 shares. This gave an average rate of 1,170 shares per video and 415 shares per photo. It must be remembered that the viral video in July 2017 had almost 40,000 shares. Looking at Figure 38, different patterns cannot be seen when comparing shares of videos and photos.
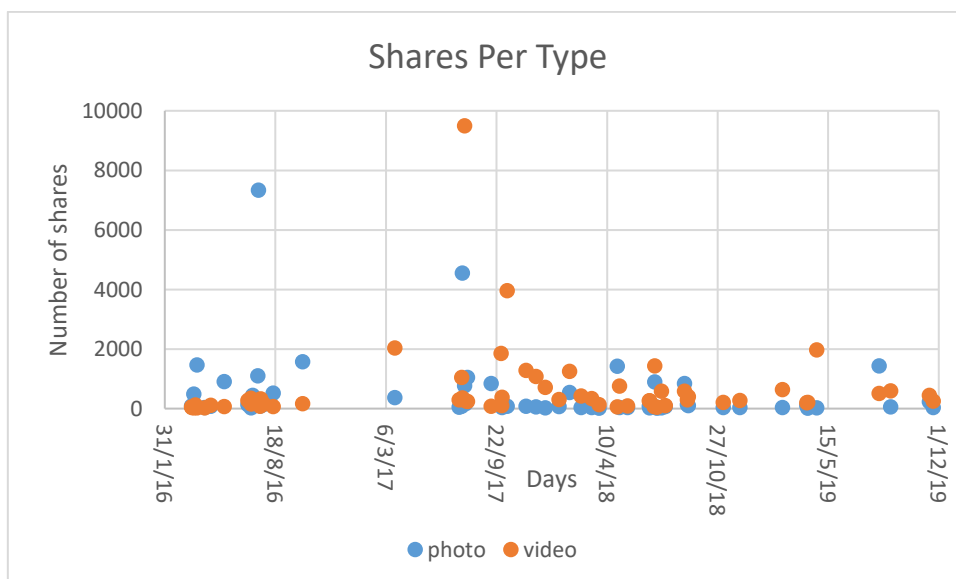
Figure 38: Shares Per Type Over Time

V. Conclusions and Recommendations

1. Comparisons

When comparing the traffic of the MoWRAM website and Facebook page (see Figure 39), it must be considered that traffic numbers are calculated differently. Webpage counters counts the number of visits, and several of them can be made by the same person. Alternatively, the Facebook page has almost 1 million followers, who can go to the MoWRAM page several times without any trace.

Figure 39 shows the volume of webpage visits and Facebook posts, shares and reactions over time. During November 2019, interactions with Facebook page appear to have entered a counter-cycle with webpage traffic, showing a sharp rise while the number of website visits began its seasonal drop.
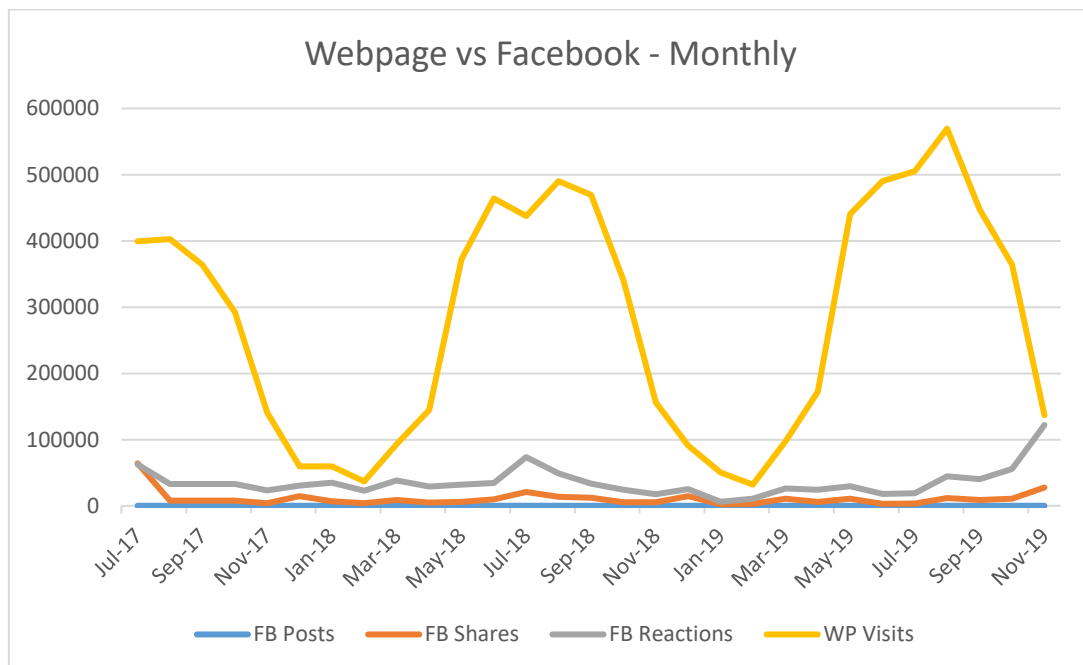
Figure 39: Trends Along Time of Facebook Posts, Shares, Reactions and Webpage Traffic

The correlation coefficients between these variables can be seen in Table 19. The number of Facebook posts and the number of visits on the website had a positive moderate correlation, while the relation between website traffic and Facebook shares or reactions was negligible.

Table 19: Kendall's tau for Serial Dependence Between Facebook Posts, Shares, Reactions and Webpage Traffic

	FB Posts	FB Shares	FB Reactions	WP Visits
FB Posts	**1.0000000**	0.4154345	0.5497666	0.5441200
FB Shares		**1.0000000**	0.6543210	0.2194823

FB Reactions			**1.0000000**	0.2688042
WP Visits				**1.0000000**

2. Conclusions

The population of Cambodia is 16.36 million, with 24% settled in urban areas[7]. In 2019, the MoWRAM website had around 3.3 million visits, which is at most 20% of Cambodian citizens accessing information from the website (in reality, this would be less as some hits were from other countries and each internet user can make multiple visits). On the other hand, these informed citizens can themselves transmit information to other Cambodian citizens, which is not possible to estimate the scale of at this time.

Cambodia has a tropical climate characterized by 2 seasons: dry and rainfall. The dry season runs from December to April and the rainy season from May to November. These distinct seasons are reflected in the data patterns observed for both MoWRAM's Facebook postings, and for interactions of Facebook users. Facebook shares, 'likes' and comments followed these two seasons, which could be expected as MoWRAM publishes more posts during rainy season. The correlations calculated confirmed these relations between data series.

It can be concluded that followers share less, but like more. One potential reason is that more people like the MoWRAM Facebook page, which means they see posts first-hand and do not see the need to share them.

The public exponentially increased their comments on MoWRAM's Facebook posts. The number of comments correlated with the number of posts, but latter increased 32% in 2019 (without December) when compared to 2018, while comments increased more than 400%.

Reactions left by the public on MoWRAM posts were mostly positive; the same was reflected by "thanks" as the most frequently used word family in comments.

The MoWRAM Facebook page have begun to change their patterns in posting and, in addition to weather warnings, they have been sharing national events, particularly since November 2019. There was an excellent receptivity from the public to this, which might be one of the justifications for the exponential increase in comment numbers. This is a good strategy and should be continued. Overall, the MoWRAM Facebook page performed with sustained growth.

3. Recommendations

Following the analysis, several recommendations could be made to consolidate the observed growth trend of public engagement with the information conveyed by MoWRAM on its digital

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[7] https://datareportal.com/reports/digital-2019-cambodia.

platforms.

Feed Facebook with information throughout the year: During November 2019 the patterns of Facebook posts changed, gathering lots of 'love' reactions. This showed an appreciation of not only weather-related information but also MoWRAM's actions and event participation.
Interaction between webpage and social media: The webpage had traffic during rainy season while the Facebook page had an audience throughout the year. Webpage links should be shared on Facebook more often to bring traffic to the webpage.

Utilize other social media, such as Twitter, LinkedIn: Twitter has been increasing its audience and many people have been adopting this platform as a prime source of news. LinkedIn is more devoted to professional public but also has a very good audience.

Use of hashtags: Hashtags gather attention to social media accounts and are used on many platforms. Including a hashtag in posts helps categorize content for public. From a public perspective, hashtags allow people to find posts that fit their interests as well as aggregating users who share those interests. From an organization's point of view, it is a way to get noticed about a particular topic and include the organization as a voice for certain topics. Some hashtags that could be used are:

- o #climate
- o #climateaction
- o #climatechange
- o #mekongfloods

There's no preferred types of posts: Videos or photos were both well received by the public, as only an extraordinary event can lead to a post becoming viral, as was the case of the July 2017 floods' video.

Staff to work with social media: Social networks are increasingly the privileged means of communication of an institution and therefore should not be overlooked. Communication departments should have a staff member dedicated to gathering information for social media dissemination and to answering questions asked by the public.

The world's population is increasingly being informed through social media and therefore efforts should be made to make MoWRAM's social media pages known.

Annexes

Annex 1

Website Traffic in numbers[8]

Annual Traffic	
Year	Visits
2016	394084
2017	2710935
2018	3155998
2019	3315914

Monthly Traffic	
Month	Visits
Dec/19	10727
Nov/19	136799
Oct/19	363912
Sept/19	447360
Aug/19	569496
Jul/19	505089
Jun/19	490096
May/19	440238
Apr/19	172300
Mar/19	97307
Feb/19	32107
Jan/19	50483
Dec/18	91261
Nov/18	156086
Oct/18	340252
Sept/18	469431
Aug/18	490481
Jul/18	437527
Jun/18	464226
May/18	372346
Apr/18	144802
Mar/18	93240
Feb/18	36803
Jan/18	59543
Dec/17	59716
Nov/17	140710
Oct/17	292807
Sept/17	363962
Aug/17	402992
Jul/17	399397

Hourly Traffic (Weekday)	
Time	Visits
06AM	38
07AM	42
08AM	40
09AM	33
10AM	22
11AM	14
12PM	13
01PM	7
02PM	8
03PM	8
04PM	8
05PM	14
06PM	30
07PM	35
08PM	40
09PM	32
10PM	37
11PM	34
12AM	39
01AM	37
02AM	42
03AM	41
04AM	58
05AM	5

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[8] http://www.supercounters.com/stats/1320145 consulted on 12/12/2019

Website visits per country in numbers and percentage of total visits[9]

	Country	Visits	Share
1	Cambodia	5,101,048	92.79%
2	Viet Nam	101,547	1.85%
3	United States	93,330	1.70%
4	Philippines	38,553	0.70%
5	Thailand	26,538	0.48%
6	India	25,444	0.46%
7	Hong Kong	23,180	0.42%
8	Singapore	16,905	0.31%
9	China	16,841	0.31%
10	Australia	8,301	0.15%
11	Taiwan, Province of	6,386	0.12%
12	Malaysia	5,330	0.10%
13	Japan	4,951	0.09%
14	United Kingdom	4,066	0.07%
15	Germany	3,716	0.07%
16	Canada	3,657	0.07%
17	European Union	3,506	0.06%
18	France	2,478	0.05%
19	New Zealand	2,244	0.04%
20	Korea, Republic of	1,343	0.02%
21	Russian Federation	1,126	0.02%
22	Switzerland	818	0.01%
23	Italy	656	0.01%
24	Netherlands	591	0.01%
25	Indonesia	572	0.01%
26	Lao People's	451	0.01%
27	Macao	402	0.01%
28	Belgium	332	0.01%
29	Spain	304	0.01%
30	Austria	280	0.01%

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[9] http://www.supercounters.com/stats/1320145 consulted on 12/12/2019

Annex 3

List of words with frequencies greater than 5 in citizens' Facebook comments

Word	Frequency	Word	Frequency	Word	Frequency	Word	Frequency
thanks	1348	Big	49	svay	30	sorry	20
rain	983	Careful	48	lake	29	construction	20
water	789	Really	47	preah	29	longer	20
ministry	593	Just	46	land	28	project	20
inform	392	Get	45	khmer	28	national	20
much	340	veng	45	far	27	sap	19
district	329	tell	44	need	27	stung	19
resources	321	storm	43	new	27	chhnang	19
province	261	hot	42	still	27	brother	19
day	232	uncle	42	support	27	end	19
rice	217	don	42	level	27	station	19
please	194	may	42	small	26	look	19
good	190	congratulations	41	effort	26	make	19
people	187	cold	41	grow	26	money	19
like	187	system	41	almost	26	team	19
meteorology	171	great	40	paddy	26	cool	19
farmer	163	last	40	pursat	26	problem	19
canal	144	Let	40	morning	26	oddarmeanchey	19
commune	138	forecast	40	road	26	benefit	19
year	133	wish	40	dont	26	damage	18
help	131	dam	39	care	25	right	18
battambang	127	today	39	never	25	job	18
river	116	always	37	wind	25	first	18
weather	113	years	37	house	25	kandal	18
village	113	health	36	hope	25	daily	18
flood	95	phnompenh	36	little	25	mongkol	18
field	86	svayrieng	36	sharing	24	side	18
irrigation	86	enough	35	hard	24	tonle	17
month	81	government	34	yesterday	24	attention	17
kampong	80	long	34	less	24	bridge	17
prey	71	beautiful	34	excellency	24	bit	17
banteaymeanchey	70	continue	34	agriculture	24	even	17
ask	69	take	34	development	23	three	17
time	68	takeo	34	back	23	say	17
season	68	Go	33	next	23	pailin	17
come	67	thmor	33	alert	23	easy	17
well	67	kratie	33	important	23	old	17
now	65	happy	33	notice	23	mekong	17
die	63	potato	32	place	23	shortage	17
cambodia	62	yet	32	lot	23	clear	16
news	61	thom	32	difficult	23	leaders	16
dry	61	use	31	kampot	22	large	16
country	57	notifying	31	lim	22	thai	16
work	56	especially	31	love	22	nature	16
siemreap	56	heavy	31	poor	21	ratanakkiri	16
want	56	night	31	without	21	find	16
comment	55	cham	31	achievement	21	done	16
providing	53	two	31	speu	20	ready	16
kompong	51	crops	30	hor	20	royal	15
pumping	51	gone	30	high	20	family	15
advance	50	since	30	dig	20	full	15
area	50	sky	30	data	20	times	15

Word	Frequency	Word	Frequency	Word	Frequency	Word	Frequency
name	15	Ago	13	kol	11	looks	9
april	15	Another	13	average	11	put	9
provincial	15	Success	13	residents	11	early	9
citizens	15	Active	13	samrong	11	flow	9
better	15	source	13	save	11	company	9
possible	15	needs	13	live	10	wonderful	9
mean	15	russey	13	air	10	seen	9
sure	15	Way	13	appreciate	10	sir	9
drought	15	tboungkhmum	12	taking	10	som	9
vihear	15	Week	12	nation	10	till	9
around	14	bottom	12	south	10	sun	9
giving	14	Telling	12	heard	10	treng	9
hopefully	14	City	12	true	10	nas	9
late	14	Run	12	whole	10	borey	9
god	14	forest	12	bavel	10	september	9
provide	14	harvest	12	sell	10	wait	9
along	14	recede	12	stop	10	km	9
department	14	Oh	12	future	10	maung	9
main	14	keo	12	supply	10	china	9
mm	14	strong	12	degrees	10	prevent	8
due	14	borei	12	grateful	10	dog	8
open	14	prek	12	rise	10	activities	8
tomorrow	14	master	12	climate	10	vietnam	8
fall	14	thanksly	12	different	10	words	8
phnom	14	date	12	heng	10	feedback	8
lack	14	facebook	12	celebration	10	knows	8
farm	14	understand	12	fish	10	wants	8
keep	14	nice	12	saw	10	nothing	8
scenery	14	already	12	com	10	natural	8
home	14	market	11	ah	10	life	8
visit	14	drain	11	dear	10	community	8
best	14	children	11	local	10	building	8
sea	13	technical	11	pool	10	bring	8
broken	13	situation	11	pressure	10	hello	8
post	13	give	11	detail	10	caused	8
restore	13	build	11	buy	10	region	8
kean	13	think	11	flowing	9	kiri	8
waiting	13	whether	11	corn	9	able	8
try	13	cheap	11	pay	9	check	8
near	13	stopped	11	called	9	peace	8
ang	13	part	11	staff	9	wow	8
banteay	13	working	11	believe	9	useful	8
hi	13	available	11	destroy	9	kohkong	8
away	13	officials	11	banan	9	solve	8
drainage	13	five	11	bank	9	MoWRAM	8
trapeang	13	located	11	border	9	prepare	8
poipet	13	town	11	contact	9	price	8
low	13	anymore	11	fact	9	samdech	8
completely	13	luck	11	getting	9	state	8
lost	13	farming	11	trabek	9	trying	8
hectares	13	built	11	evening	9	middle	8
request	13	clean	11	samlot	9	wet	8

Word	Frequency	Word	Frequency	Word	Frequency	Word	Frequency	Word	Frequency
chey	8	Honey	7	past	6	sart	6	release	5
speed	8	Aware	7	responsibility	6	chief	6	hear	5
meanchey	8	disasters	7	born	6	drinking	6	action	5
timely	8	everyone	7	harvested	6	mix	6	valid	5
tv	8	Grass	7	sow	6	received	6	tired	5
something	8	Ok	7	mango	6	pretty	6	sampov	5
must	8	pity	7	phnomdistrict	6	teacher	6	suffering	5
throughout	8	rest	7	everything	6	intervention	6	went	5
thailand	8	pot	7	mountain	6	hours	6	broadcast	5
deep	8	malai	7	page	6	mesang	6	chi	5
means	8	sad	7	learn	6	serei	6	prepared	5
koh	8	Oil	7	access	6	pagoda	6	normal	5
issues	8	conditions	7	commend	6	behalf	6	basin	5
four	8	policy	7	confirm	6	safety	6	bless	5
restored	8	tourism	7	economy	6	dedicated	6	electricity	5
villagers	8	send	7	effects	6	trapaing	6	school	5
least	8	sophorn	7	emergency	6	daun	6	chroy	5
lower	8	leadership	7	reach	6	krolanh	6	peam	5
monsoon	8	known	7	ur	6	forget	6	read	5
quality	8	thmey	7	heat	6	weak	6	develop	5
reduce	7	came	7	map	6	trach	6	join	5
ground	7	scheme	7	general	6	cultivation	6	kingdom	5
safe	7	Ek	7	temperature	6	beans	5	man	5
follow	7	lives	7	book	6	free	5	trees	5
made	7	koul	7	director	6	etc	5	tuk	5
public	7	looking	7	increase	6	management	5	wonder	5
beginning	7	write	7	island	6	ahead	5	change	5
december	7	point	7	later	6	result	5	ha	5
baby	7	art	7	lightning	6	according	5	june	5
creek	7	pray	7	short	6	announcing	5	started	5
growing	7	kirivong	7	miss	6	beware	5	bat	5
meters	7	wat	7	lead	6	bong	5	poi	5
world	7	fishermen	7	however	6	disseminate	5	office	5
sometimes	7	social	6	pol	6	hundred	5	maintenance	5
report	7	sen	6	hometown	6	else	5	secondary	5
thing	7	huge	6	location	6	students	5	word	5
running	7	Re	6	forestry	6	friends	5	restoration	5
chrey	7	tasks	6	engine	6	november	5	valuable	5
finished	7	recent	6	president	6	sangker	5	monitor	5
worried	7	regularly	6	kim	6	experience	5	prices	5
going	7	remember	6	reservoir	6	interested	5	things	5
half	7	risk	6	prediction	6	making	5	mid	5
mondulkiri	7	across	6	authority	6	putin	5	higher	5
color	7	boeung	6	kok	6	several	5	priority	5
nearly	7	irrigated	6	kong	6	thinking	5	number	5
cassava	7	mountains	6	rich	6	satisfied	5	chek	5
climatechange	7	thousands	6	healthy	6	head	5	predict	5
program	7	sam	6	prince	6	plan	5	seng	5
srei	7	found	6	hundreds	6	story	5	sowing	5
start	7	march	6	systems	6	guess	5	vision	5
kind	7	reason	6	angkorchey	6	economic	5	temple	5
sok	7	dark	6	explain	6	capacity	5	nika	5

Annex 4

#replacing family of words

```
Data$message <- str_replace_all(DATA$message, "achievements" , "achievement")
Data$message <- str_replace_all(DATA$message, "agricultural" , "agriculture")
Data$message <- str_replace_all(DATA$message, "alerts" , "alert")
Data$message <- str_replace_all(DATA$message, "areas" , "area")
Data$message <- str_replace_all(DATA$message, "asking" , "ask")
Data$message <- str_replace_all(DATA$message, "asked" , "ask")
Data$message <- str_replace_all(DATA$message, "benefits" , "benefit")
Data$message <- str_replace_all(Data$message, "brothers" , "brother")
Data$message <- str_replace_all(Data$message, "canals" , "canal")
Data$message <- str_replace_all(Data$message, "cambodian" , "cambodia")
Data$message <- str_replace_all(Data$message, "celebrate" , "celebration")
Data$message <- str_replace_all(Data$message, "comes" , "come")
Data$message <- str_replace_all(Data$message, "coming" , "come")
Data$message <- str_replace_all(Data$message, "comments" , "comment")
Data$message <- str_replace_all(Data$message, "communes" , "commune")
Data$message <- str_replace_all(Data$message, "congratulate" , "congratulations")
Data$message <- str_replace_all(Data$message, "continues" , "continue")
Data$message <- str_replace_all(Data$message, "crop " , "crops ")
Data$message <- str_replace_all(Data$message, "damaged" , "damage")
Data$message <- str_replace_all(Data$message, "details" , "detail")
Data$message <- str_replace_all(Data$message, "dies" , "die")
Data$message <- str_replace_all(Data$message, "dead" , "die")
Data$message <- str_replace_all(Data$message, "dying" , "die")
Data$message <- str_replace_all(Data$message, "digging" , "dig")
Data$message <- str_replace_all(Data$message, "districts" , "district")
Data$message <- str_replace_all(Data$message, "efforts" , "effort")
Data$message <- str_replace_all(Data$message, "farmers" , "farmer")
Data$message <- str_replace_all(Data$message, "fields" , "field")
Data$message <- str_replace_all(Data$message, "floods" , "flood")
Data$message <- str_replace_all(Data$message, "flooded" , "flood")
Data$message <- str_replace_all(Data$message, "flooding" , "flood")
Data$message <- str_replace_all(Data$message, "forecasts" , "forecast")
Data$message <- str_replace_all(Data$message, "governor" , "government")
Data$message <- str_replace_all(Data$message, "helps" , "help")
Data$message <- str_replace_all(Data$message, "helping" , "help")
Data$message <- str_replace_all(Data$message, "helped" , "help")
Data$message <- str_replace_all(Data$message, "homes" , "home")
Data$message <- str_replace_all(Data$message, "houses" , "house")
Data$message <- str_replace_all(Data$message, "lakes" , "lake")
Data$message <- str_replace_all(Data$message, "levels" , "level")
Data$message <- str_replace_all(Data$message, "months" , "month")
Data$message <- str_replace_all(Data$message, "notification" , "notifying")
Data$message <- str_replace_all(Data$message, "notified" , "notifying")
Data$message <- str_replace_all(Data$message, "paddies" , "paddy")
Data$message <- str_replace_all(Data$message, "paddie" , "paddy")
Data$message <- str_replace_all(Data$message, "potatoes" , "potato")
```

```r
Data$message <- str_replace_all(Data$message, "problems" , "problem")
Data$message <- str_replace_all(Data$message, "provinces" , "province")
Data$message <- str_replace_all(Data$message, "pump " , "pumping ")
Data$message <- str_replace_all(Data$message, "wishes" , "wish")
Data$message <- str_replace_all(Data$message, "wishing" , "wish")
Data$message <- str_replace_all(Data$message, "roads", "road")
Data$message <- str_replace_all(Data$message, "resource " , "resources ")
Data$message <- str_replace_all(Data$message, "storms", "storm")
Data$message <- str_replace_all(Data$message, "villages", "village")

Data$message <- str_replace_all(Data$message, "rainstorm" , "rain")
Data$message <- str_replace_all(Data$message, "rainstorms" , "rain")
Data$message <- str_replace_all(Data$message, "rains" , "rain")
Data$message <- str_replace_all(Data$message, "rainy" , "rain")
Data$message <- str_replace_all(Data$message, "rained" , "rain")
Data$message <- str_replace_all(Data$message, "raining" , "rain")
Data$message <- str_replace_all(Data$message, "rainfall", "rain")

Data$message <- str_replace_all(Data$message, "thanks", "thank")
Data$message <- str_replace_all(Data$message, "thankful", "thank")
Data$message <- str_replace_all(Data$message, "thankfully", "thank")
Data$message <- str_replace_all(Data$message, "thankyou", "thank")
Data$message <- str_replace_all(Data$message, "thx", "thank")
Data$message <- str_replace_all(Data$message, "thunk", "thank")
Data$message <- str_replace_all(Data$message, "thank", "thanks")

Data$message <- str_replace_all(Data$message, "meteorologist", "meteorology")
Data$message <- str_replace_all(Data$message, "meteorological", "meteorology")

Data$message <- str_replace_all(Data$message, "informing", "inform")
Data$message <- str_replace_all(Data$message, "information", "inform")
Data$message <- str_replace_all(Data$message, "informed", "inform")
Data$message <- str_replace_all(Data$message, "info ", "inform ")


#districts
Data$message <- str_replace_all(Data$message, "phnom penh", "phnompenh")
Data$message <- str_replace_all(Data$message, "phnom district", "phnomdistrict")

Data$message <- str_replace_all(Data$message, "siem reap", "siemreap")
Data$message <- str_replace_all(Data$message, "banteay meanchey", "banteaymeanchey")
Data$message <- str_replace_all(Data$message, "oddar meanchey", "oddarmeanchey")
#Data$message <- str_replace_all(Data$message, "kampong cham", "kampongcham")
#Data$message <- str_replace_all(Data$message, "kampong chhnang", "kampongchhnang")
#Data$message <- str_replace_all(Data$message, "kampong speu", "kampongspeu")
#Data$message <- str_replace_all(Data$message, "kampong thom", "kampongthom")
Data$message <- str_replace_all(Data$message, "tboung khmum", "tboungkhmum")
Data$message <- str_replace_all(Data$message, "tbong khmum", "tboungkhmum")
Data$message <- str_replace_all(Data$message, "koh kong", "kohkong")
```

```
Data$message <- str_replace_all(Data$message, "koh district", "kohdistrict")

Data$message <- str_replace_all(Data$message, "angkor chey", "angkorchey")

Data$message <- str_replace_all(Data$message, "ratanak kiri", "ratanakkiri")
Data$message <- str_replace_all(Data$message, "ratanakiri", "ratanakkiri")

Data$message <- str_replace_all(Data$message, "kiri sakor", "kirisakor")
Data$message <- str_replace_all(Data$message, "rukhak kiri", "rukhakkiri")

Data$message <- str_replace_all(Data$message, "svay rieng", "svayrieng")
Data$message <- str_replace_all(Data$message, "svay pak", "svaypak")

Data$message <- str_replace_all(Data$message, "climate change", "climatechange")
```

Word Associations

	word	Scor	X	word	scor	X1	word	scor	X1	word	scor
ministry	resources	0.76	rain	day	0.58	thanks	inform	0.87	water	resources	0.77
ministry	water	0.67	rain	battambang	0.53	thanks	much	0.84	water	ministry	0.67
ministry	meteorology	0.67	rain	inform	0.52	thanks	advance	0.66	water	meteorology	0.62
ministry	inform	0.61	rain	thanks	0.50	thanks	ministry	0.58	water	people	0.46
ministry	thanks	0.58	rain	month	0.48	thanks	resources	0.58	water	inform	0.46
ministry	like	0.55	rain	province	0.45	thanks	providing	0.54	water	always	0.46
ministry	providing	0.49	rain	tboungkhmum	0.41	thanks	day	0.52	water	thanks	0.42
ministry	basis	0.49	rain	potato	0.40	thanks	meteorology	0.52	water	farmer	0.42
ministry	always	0.47	rain	siemreap	0.39	thanks	weather	0.52	water	like	0.4
ministry	advance	0.45	rain	weather	0.38	thanks	rain	0.5	water	rice	0.39
ministry	receiving	0.43	rain	cut	0.38	thanks	notice	0.47	water	field	0.39
ministry	farmer	0.42	rain	much	0.37	thanks	news	0.46	water	canal	0.38
ministry	weather	0.42	rain	ask	0.36	thanks	notifying	0.44	water	irrigation	0.38
ministry	much	0.41	rain	yesterday	0.35	thanks	like	0.43	water	providing	0.38
ministry	people	0.39	rain	climate	0.35	thanks	water	0.42	water	country	0.37
ministry	health	0.39	rain	like	0.34	thanks	sharing	0.38	water	commune	0.37
ministry	structures	0.39	rain	ministry	0.33	thanks	program	0.36	water	district	0.36
ministry	day	0.38	rain	forecast	0.33	thanks	event	0.36	water	time	0.36
ministry	ask	0.37	rain	cham	0.33	thanks	caution	0.36	water	advance	0.35
ministry	lim	0.37	rain	now	0.32	thanks	soun	0.36	water	please	0.35
ministry	work	0.37	rain	lun	0.32	thanks	organizing	0.36	water	year	0.33
ministry	contribute	0.37	rain	advance	0.31	thanks	campost	0.34	water	weather	0.33
ministry	sutures	0.37	rain	just	0.31	thanks	telling	0.33	water	day	0.32
ministry	angk	0.37	rain	sampov	0.31	thanks	ready	0.33	water	now	0.32
ministry	asshole	0.37	rain	th	0.31	thanks	good	0.32	water	use	0.32
ministry	awareness	0.37	rain	publishing	0.31	thanks	alert	0.31	water	effort	0.32
ministry	bismarck	0.37	rain	kampong	0.30	thanks	potato	0.31	water	ready	0.32
ministry	bodie	0.37	rain	meteorology	0.30	thanks	month	0.31	water	help	0.31
ministry	cancel	0.37	rain	rice	0.30	thanks	grateful	0.31	water	crops	0.31
ministry	capable	0.37	rain	banteaymeanchey	0.30	thanks	nas	0.31	water	department	0.31
ministry	chhum	0.37	rain	resources	0.29	thanks	storm	0.3	water	support	0.31
ministry	coverage	0.37	rain	today	0.29	thanks	giving	0.3	water	dry	0.31
ministry	crisis	0.37	rain	half	0.29	thanks	now	0.3	water	great	0.3
ministry	disease	0.37	rain	providing	0.29	thanks	careful	0.3	water	good	0.3
ministry	fled	0.37	rain	cassava	0.29	thanks	wonderful	0.3	water	percent	0.3
ministry	frankly	0.37	rain	farmer	0.28	thanks	ask	0.29	water	dam	0.29
ministry	honestly	0.37	rain	season	0.28	thanks	feedback	0.29	water	enough	0.29
ministry	hurting	0.37	rain	little	0.28	thanks	announcement	0.29	water	chief	0.29
ministry	kheang	0.37	rain	ago	0.28	thanks	people	0.28	water	hor	0.28
ministry	leg	0.37	rain	storm	0.27	thanks	always	0.28	water	province	0.28
ministry	legs	0.37	rain	time	0.27	thanks	may	0.28	water	hundred	0.28
ministry	lol	0.37	rain	dggicv	0.27	thanks	th	0.28	water	active	0.28
ministry	lump	0.37	rain	gift	0.27	thanks	letting	0.28	water	hundreds	0.28
ministry	naturally	0.37	rain	leaning	0.27	thanks	conditions	0.28	water	come	0.27
ministry	poung	0.37	rain	predicted	0.27	thanks	protect	0.27	water	lim	0.27
ministry	puy	0.37	rain	preuk	0.27	thanks	clarifying	0.27	water	work	0.27
ministry	raise	0.37	rain	rainless	0.27	thanks	big	0.26	water	far	0.27
ministry	ran	0.37	rain	akuntha	0.27	thanks	climate	0.26	water	season	0.27
ministry	risked	0.37	rain	bottun	0.27	thanks	planted	0.26	water	main	0.27
ministry	salary	0.37	rain	brief	0.27	thanks	hong	0.26	water	hectares	0.27
ministry	scholars	0.37	rain	chansovanleakna	0.27	thanks	tboungkhmum	0.25	water	apparitions	0.27
ministry	seized	0.37	rain	definition	0.27	thanks	farmer	0.25	water	aunt	0.27
ministry	shout	0.37	rain	definitions	0.27	thanks	disseminate	0.25	water	blessed	0.27
ministry	simply	0.37	rain	dictionary	0.27	thanks	forecast	0.25	water	commons	0.27
ministry	strengthen	0.37	rain	divided	0.27	thanks	lightning	0.25	water	confusing	0.27
ministry	strengthenin	0.37	rain	false	0.27	thanks	clever	0.25	water	defeat	0.27
ministry	sum	0.37	rain	fortune	0.27	thanks	downpours	0.25	water	divide	0.27
ministry	supervisors	0.37	rain	grazing	0.27	thanks	informok	0.25	water	forgiving	0.27
ministry	technicians	0.37	rain	infothanks	0.27	thanks	ponleuah	0.25	water	hectare	0.27
ministry	urging	0.37	rain	losing	0.27	thanks	precaution	0.25	water	nays	0.27
ministry	wake	0.37	rain	material	0.27	thanks	rate	0.25	water	paying	0.27
ministry	wearing	0.37	rain	mud	0.27	thanks	borith	0.25	water	separates	0.27
ministry	weigh	0.37	rain	numerals	0.27	thanks	carry	0.25	water	texas	0.27
ministry	ready	0.36	rain	observation	0.27	thanks	chumteavs	0.25	water	borith	0.27
ministry	please	0.34	rain	outcome	0.27	thanks	coat	0.25	water	carry	0.27
ministry	hor	0.34	rain	pg	0.27	thanks	crucial	0.25	water	chumteavs	0.27
ministry	rain	0.33	rain	rainforest	0.27	thanks	gentlemen	0.25	water	coat	0.27
ministry	eyes	0.33	rain	ream	0.27	thanks	hairdresser	0.25	water	crucial	0.27
ministry	letting	0.33	rain	rebuild	0.27	thanks	homeowners	0.25	water	gentlemen	0.27
ministry	drowning	0.33	rain	sos	0.27	thanks	ketchup	0.25	water	hairdresser	0.27
ministry	sustainable	0.33	rain	survey	0.27	thanks	ladie	0.25	water	homeowners	0.27
ministry	issued	0.33	rain	svet	0.27	thanks	laughing	0.25	water	ketchup	0.27
ministry	ideas	0.32	rain	tanmisy	0.27	thanks	nimok	0.25	water	ladie	0.27
ministry	everything	0.32	rain	teller	0.27	thanks	obstruction	0.25	water	laughing	0.27
ministry	keep	0.32	rain	tropical	0.27	thanks	onwards	0.25	water	nimok	0.27
ministry	updating	0.32	rain	unspecified	0.27	thanks	rather	0.25	water	obstruction	0.27

ministry	light	0.32	rain	wallet	0.27	thanks	rejoice	0.25	water	onwards	0.27
ministry	acid	0.32	rain	warmly	0.27	thanks	serum	0.25	water	rather	0.27
ministry	country	0.31	rain	yey	0.27	thanks	sick	0.25	water	rejoice	0.27
ministry	matter	0.31	rain	kampot	0.26	thanks	swan	0.25	water	serum	0.27
ministry	effort	0.31	rain	district	0.26	thanks	thunder	0.25	water	sick	0.27
ministry	criticism	0.31	rain	crops	0.26	thanks	unaware	0.25	water	swan	0.27
ministry	sit	0.31	rain	tell	0.26	thanks	vatey	0.25	water	thunder	0.27
ministry	surrounding	0.31	rain	sky	0.26	thanks	visible	0.25	water	unaware	0.27
ministry	now	0.30	rain	veng	0.26	thanks	cold	0.24	water	vatey	0.27
ministry	year	0.29	rain	less	0.26	thanks	continue	0.24	water	visible	0.27
ministry	irrigation	0.29	rain	mistaken	0.26	thanks	cool	0.24	water	ask	0.26
ministry	cambodia	0.29	rain	gutters	0.26	thanks	thz	0.24	water	much	0.26
ministry	news	0.29	rain	loun	0.26	thanks	anymore	0.24	water	government	0.26
ministry	open	0.29	rain	neang	0.26	thanks	sad	0.24	water	according	0.26
ministry	however	0.29	rain	kompong	0.25	thanks	air	0.23	water	bottom	0.26
ministry	mentioned	0.29	rain	almost	0.25	thanks	tell	0.23	water	harvest	0.26
ministry	focus	0.29	rain	april	0.25	thanks	just	0.23	water	benefit	0.26
ministry	praise	0.29	rain	fall	0.25	thanks	province	0.23	water	closed	0.26
ministry	wise	0.29	rain	rush	0.25	thanks	today	0.23	water	dragboat	0.26
ministry	great	0.28	rain	watermelon	0.25	thanks	change	0.23	water	sangke	0.26
ministry	notifying	0.28	rain	grind	0.25	thanks	plow	0.23	water	shortage	0.26
ministry	forecast	0.28	rain	holds	0.25	thanks	gave	0.23	water	sub	0.26
ministry	schemes	0.28	rain	poet	0.25	thanks	time	0.22	water	big	0.25
ministry	good	0.27	rain	thona	0.25	thanks	rice	0.22	water	irrigated	0.25
ministry	province	0.27	rain	winter	0.25	thanks	year	0.22	water	two	0.25
ministry	rice	0.27	rain	corn	0.24	thanks	border	0.22	water	svay	0.25
ministry	notice	0.27	rain	gone	0.24	thanks	yesterday	0.22	water	left	0.25
ministry	remember	0.27	rain	year	0.24	thanks	advice	0.22	water	therefore	0.25
ministry	support	0.27	rain	may	0.24	thanks	june	0.22	water	development	0.24
ministry	short	0.27	rain	heavy	0.24	thanks	gmail	0.22	water	three	0.24
ministry	pass	0.27	rain	btb	0.24	thanks	manita	0.22	water	sometimes	0.24
ministry	constructive	0.27	rain	good	0.23	thanks	nosing	0.22	water	paddy	0.24
ministry	involved	0.27	rain	uncle	0.23	thanks	pen	0.22	water	prepared	0.24
ministry	borith	0.27	rain	banteay	0.23	thanks	samoeun	0.22	water	hand	0.24
ministry	carry	0.27	rain	grow	0.23	thanks	thankshi	0.22	water	attention	0.23
ministry	chumteavs	0.27	rain	harvest	0.23	thanks	thiefs	0.22	water	notifying	0.23
ministry	coat	0.27	rain	rattanak	0.23	thanks	thoeun	0.22	water	svayrieng	0.23
ministry	crucial	0.27	rain	went	0.23	thanks	youbiie	0.22	water	mr	0.23
ministry	gentlemen	0.27	rain	anymore	0.23	thanks	fair	0.22	water	difficult	0.23
ministry	hairdresser	0.27	rain	expect	0.23	thanks	broken	0.21	water	system	0.23
ministry	homeowner	0.27	rain	cattle	0.23	thanks	please	0.21	water	success	0.23
ministry	ketchup	0.27	rain	samlut	0.23	thanks	siemreap	0.21	water	scheme	0.23
ministry	ladie	0.27	rain	lucky	0.22	thanks	want	0.21	water	fortunate	0.23
ministry	laughing	0.27	rain	speu	0.22	thanks	whether	0.21	water	koul	0.23
ministry	nimok	0.27	rain	notice	0.22	thanks	stormy	0.21	water	tbong	0.23
ministry	obstruction	0.27	rain	bit	0.22	thanks	cham	0.21	water	tons	0.23
ministry	onwards	0.27	rain	kratie	0.22	thanks	cassava	0.21	water	excellencies	0.23
ministry	rather	0.27	rain	prev	0.22	thanks	prepared	0.21	water	share	0.23
ministry	rejoice	0.27	rain	acres	0.22	thanks	sok	0.21	water	kean	0.22
ministry	serum	0.27	rain	book	0.22	thanks	ur	0.21	water	royal	0.22
ministry	sick	0.27	rain	says	0.22	thanks	regular	0.21	water	area	0.22
ministry	swan	0.27	rain	starting	0.22	thanks	monitor	0.21	water	pumping	0.22
ministry	thunder	0.27	rain	dance	0.22	thanks	mistaken	0.21	water	times	0.22
ministry	unaware	0.27	rain	abuwaa	0.22	thanks	blade	0.21	water	cold	0.22
ministry	vatey	0.27	rain	ces	0.22	thanks	carefulmao	0.21	water	running	0.22
ministry	visible	0.27	rain	chung	0.22	thanks	chanraksmeylid	0.21	water	especially	0.22
ministry	storm	0.26	rain	counters	0.22	thanks	clothes	0.21	water	harvested	0.22
ministry	activities	0.26	rain	cracä	0.22	thanks	festival	0.21	water	climatechang	0.22
ministry	build	0.26	rain	increasing	0.22	thanks	fluctuations	0.21	water	lack	0.22
ministry	officials	0.26	rain	influence	0.22	thanks	hai	0.21	water	farm	0.22
ministry	district	0.25	rain	kralanh	0.22	thanks	hov	0.21	water	happy	0.22
ministry	time	0.25	rain	oñ	0.22	thanks	irregular	0.21	water	complete	0.22
ministry	hard	0.25	rain	pilot	0.22	thanks	jojosophearith	0.21	water	keep	0.22
ministry	concerned	0.25	rain	resour	0.22	thanks	kon	0.21	water	farming	0.22
ministry	prepared	0.25	rain	sreyl	0.22	thanks	lerng	0.21	water	mean	0.22
ministry	benefit	0.25	rain	sreypoch	0.22	thanks	neo	0.21	water	plowed	0.22
ministry	grass	0.25	rain	ssî	0.22	thanks	nivung	0.21	water	seeing	0.22
ministry	bright	0.25	rain	tengleang	0.22	thanks	rim	0.21	water	deputy	0.22
ministry	lie	0.25	rain	vornsomaly	0.22	thanks	tembin	0.21	water	hong	0.22
ministry	ministrys	0.25	rain	chiang	0.22	thanks	ter	0.21	water	river	0.21
ministry	hong	0.25	rain	highly	0.22	thanks	thobebe	0.21	water	well	0.21
ministry	metal	0.25	rain	kambol	0.22	thanks	tylyvann	0.21	water	successful	0.21
ministry	directive	0.25	rain	mai	0.22	thanks	yoeun	0.21	water	may	0.21
ministry	looked	0.25	rain	outside	0.22	thanks	week	0.2	water	cool	0.21
ministry	iron	0.25	rain	recommend	0.22	thanks	bottom	0.2	water	director	0.21
ministry	productive	0.25	rain	sprouts	0.22	thanks	color	0.2	water	blows	0.21
ministry	brain	0.24	rain	suing	0.22	thanks	keep	0.2	water	expertise	0.21
ministry	help	0.24	rain	tbbbbbbmm	0.22	thanks	advantages	0.2	water	haseka	0.21
ministry	dark	0.24	rain	œcambodiacambo	0.22	thanks	bopha	0.2	water	intersect	0.21
ministry	soun	0.24	rain	vet	0.21	thanks	feared	0.2	water	karen	0.21
ministry	conditions	0.24	rain	week	0.21	thanks	kotler	0.2	water	party	0.21

ministry			rain			thanks			water		
ministry	closed	0.24	rain	want	0.21	thanks	kraeng	0.2	water	reporting	0.21
ministry	ministries	0.24	rain	lot	0.21	thanks	offered	0.2	water	given	0.21
ministry	sub	0.24	rain	guess	0.21	thanks	pearl	0.2	water	adaptation	0.21
ministry	fair	0.24	rain	news	0.21	thanks	tamnoeng	0.2	water	agreed	0.21
ministry	welfare	0.24	rain	harvested	0.21	thanks	thkea	0.2	water	chaired	0.21
ministry	kirivong	0.24	rain	ratanakkiri	0.21	thanks	upgrade	0.2	water	chiefs	0.21
ministry	crops	0.23	rain	program	0.21	thanks	read	0.2	water	classification	0.21
ministry	try	0.23	rain	takeo	0.21	thanks	hand	0.2	water	demand	0.21
ministry	field	0.23	rain	two	0.21	thanks	crops	0.19	water	distribute	0.21
ministry	mind	0.23	rain	mean	0.21	thanks	bit	0.19	water	distributed	0.21
ministry	yesterday	0.23	rain	average	0.21	thanks	cambodia	0.19	water	encourages	0.21
ministry	caution	0.23	rain	water	0.2	thanks	anything	0.19	water	equitable	0.21
ministry	leadership	0.23	rain	hot	0.2	thanks	animal	0.19	water	equitably	0.21
ministry	given	0.23	rain	believe	0.2	thanks	dont	0.19	water	guaranteed	0.21
ministry	face	0.23	rain	notifying	0.2	thanks	later	0.19	water	hean	0.21
ministry	monitoring	0.23	rain	showers	0.2	thanks	given	0.19	water	interim	0.21
ministry	service	0.23	rain	evening	0.2	thanks	btb	0.19	water	organized	0.21
ministry	actions	0.22	rain	reason	0.2	thanks	great	0.18	water	pros	0.21
ministry	far	0.22	rain	pailin	0.2	thanks	bong	0.18	water	rainwater	0.21
ministry	bottom	0.22	rain	samlot	0.2	thanks	field	0.18	water	san	0.21
ministry	especially	0.22	rain	pm	0.2	thanks	heavy	0.18	water	scarce	0.21
ministry	able	0.22	rain	sow	0.2	thanks	night	0.18	water	six	0.21
ministry	happy	0.22	rain	mondulkiri	0.2	thanks	lun	0.18	water	suggested	0.21
ministry	everyone	0.22	rain	thz	0.2	thanks	morning	0.18	water	users	0.21
ministry	hand	0.22	rain	dont	0.2	thanks	easy	0.18	water	vice	0.21
ministry	systems	0.22	rain	facing	0.2	thanks	farm	0.18	water	rain	0.2
ministry	angkorchey	0.22	rain	plantation	0.2	thanks	everyone	0.18	water	tell	0.2
ministry	therefore	0.22	rain	received	0.2	thanks	drowning	0.18	water	just	0.2
ministry	constantly	0.22	rain	visiting	0.2	thanks	neath	0.18	water	new	0.2
ministry	answer	0.22	rain	afternoon	0.2	thanks	timely	0.18	water	forecast	0.2
ministry	sharing	0.21	rain	fair	0.2	thanks	capital	0.18	water	thinking	0.2
ministry	land	0.21	rain	please	0.19	thanks	farmland	0.18	water	officials	0.2
ministry	big	0.21	rain	late	0.19	thanks	alerting	0.18	water	paid	0.2
ministry	sky	0.21	rain	phnompenh	0.19	thanks	barang	0.18	water	useful	0.2
ministry	cold	0.21	rain	never	0.19	thanks	catching	0.18	water	conditions	0.2
ministry	cool	0.21	rain	hope	0.19	thanks	hopeless	0.18	water	meanchev	0.2
ministry	th	0.21	rain	honey	0.19	thanks	mobile	0.18	water	twice	0.2
ministry	start	0.21	rain	predict	0.19	thanks	poisonous	0.18	water	residents	0.2
ministry	sok	0.21	rain	trip	0.19	thanks	withering	0.18	water	systems	0.2
ministry	nas	0.21	rain	thailand	0.19	thanks	really	0.17	water	parrot	0.2
ministry	active	0.21	rain	siam	0.19	thanks	season	0.17	water	planning	0.2
ministry	chum	0.21	rain	soft	0.19	thanks	banteaymeanch	0.17	water	north	0.2
ministry	center	0.21	rain	right	0.18	thanks	reliable	0.17	water	btb	0.2
ministry	lower	0.21	rain	since	0.18	thanks	lot	0.17	water	fair	0.2
ministry	excellencies	0.21	rain	don	0.18	thanks	harvesters	0.17	water	basis	0.2
ministry	cleared	0.21	rain	thom	0.18	thanks	pailin	0.17	water	structures	0.2
ministry	btb	0.21	rain	baby	0.18	thanks	peam	0.17	water	praise	0.2
ministry	khmers	0.21	rain	poipet	0.18	thanks	publishing	0.17	water	wise	0.2
ministry	utmost	0.21	rain	satisfied	0.18	thanks	suspended	0.17	water	next	0.19
ministry	conserve	0.21	rain	beyond	0.18	thanks	track	0.17	water	kampong	0.19
ministry	tell	0.2	rain	fine	0.18	thanks	com	0.17	water	land	0.19
ministry	leaders	0.2	rain	stopped	0.18	thanks	contract	0.17	water	try	0.19
ministry	right	0.2	rain	quick	0.18	thanks	human	0.17	water	since	0.19
ministry	last	0.2	rain	dry	0.18	thanks	mention	0.17	water	beginning	0.19
ministry	give	0.2	rain	immediately	0.18	thanks	president	0.17	water	drainage	0.19
ministry	month	0.2	rain	farm	0.18	thanks	states	0.17	water	full	0.19
ministry	lot	0.2	rain	ur	0.18	thanks	tells	0.17	water	prey	0.19
ministry	almost	0.2	rain	heat	0.18	thanks	feeding	0.17	water	open	0.19
ministry	solve	0.2	rain	useful	0.18	thanks	gospel	0.17	water	wonderful	0.19
ministry	budget	0.2	rain	plants	0.18	thanks	blows	0.17	water	short	0.19
ministry	kingdom	0.2	rain	keep	0.18	thanks	expertise	0.17	water	wish	0.19
ministry	forestry	0.2	rain	siem	0.18	thanks	haseka	0.17	water	however	0.19
ministry	regular	0.2	rain	suspended	0.18	thanks	intersect	0.17	water	add	0.19
ministry	image	0.2	rain	chicken	0.18	thanks	karen	0.17	water	die	0.19
ministry	blows	0.2	rain	eating	0.18	thanks	party	0.17	water	spirit	0.19
ministry	expertise	0.2	rain	soeun	0.18	thanks	reporting	0.17	water	source	0.19
ministry	haseka	0.2	rain	loss	0.18	thanks	bitch	0.17	water	control	0.19
ministry	intersect	0.2	rain	anywhere	0.18	thanks	constant	0.17	water	cows	0.19
ministry	karen	0.2	rain	medium	0.18	thanks	homework	0.17	water	kinds	0.19
ministry	party	0.2	rain	ra	0.18	thanks	krong	0.17	water	opened	0.19
ministry	reporting	0.2	rain	turned	0.18	thanks	lime	0.17	water	staung	0.19
ministry	things	0.2	rain	bitch	0.18	thanks	plowing	0.17	water	farmland	0.19
ministry	capital	0.2	rain	constant	0.18	thanks	predictably	0.17	water	committee	0.19
ministry	birth	0.2	rain	homework	0.18	thanks	sametang	0.17	water	long	0.18
ministry	drink	0.2	rain	krong	0.18	thanks	thanksthanks	0.17	water	last	0.18
ministry	dr	0.2	rain	lime	0.18	thanks	tiger	0.17	water	careful	0.18
ministry	trang	0.2	rain	plowing	0.18	thanks	nowaday	0.17	water	following	0.18
ministry	siemreap	0.19	rain	predictably	0.18	thanks	excellencies	0.17	water	notice	0.18
ministry	export	0.19	rain	sametang	0.18	thanks	po	0.17	water	tried	0.18
ministry	careful	0.19	rain	cheaper	0.18	thanks	battambang	0.16	water	across	0.18
ministry	princess	0.19	rain	august	0.18	thanks	regularly	0.16	water	matter	0.18

ministry			rain			thanks			water		
ministry	reliable	0.19	rain	saturday	0.18	thanks	beforehand	0.16	water	several	0.18
ministry	harvesters	0.19	rain	appear	0.18	thanks	thai	0.16	water	cambodia	0.18
ministry	harvesting	0.19	rain	earth	0.18	thanks	sky	0.16	water	reliable	0.18
ministry	wonderful	0.19	rain	geography	0.18	thanks	evening	0.16	water	lot	0.18
ministry	planted	0.19	rain	prefecture	0.18	thanks	wind	0.16	water	harvesters	0.18
ministry	must	0.19	rain	monsoon	0.18	thanks	especially	0.16	water	news	0.18
ministry	farmland	0.19	rain	roeun	0.18	thanks	harvested	0.16	water	sok	0.18
ministry	october	0.19	rain	phsar	0.18	thanks	harvest	0.16	water	able	0.18
ministry	po	0.19	rain	hong	0.18	thanks	organization	0.16	water	sufficient	0.18
ministry	keeping	0.19	rain	alertthy	0.18	thanks	watching	0.16	water	door	0.18
ministry	restore	0.18	rain	blurred	0.18	thanks	advertise	0.16	water	years	0.18
ministry	royal	0.18	rain	blurry	0.18	thanks	brohim	0.16	water	soun	0.18
ministry	care	0.18	rain	car	0.18	thanks	bã	0.16	water	tbeng	0.18
ministry	result	0.18	rain	ceramic	0.18	thanks	chheang	0.16	water	secondary	0.18
ministry	new	0.18	rain	chhinhyee	0.18	thanks	dim	0.16	water	monitor	0.18
ministry	season	0.18	rain	focused	0.18	thanks	element	0.16	water	things	0.18
ministry	disseminate	0.18	rain	international	0.18	thanks	forecaster	0.16	water	maybe	0.18
ministry	sometimes	0.18	rain	law	0.18	thanks	girl	0.16	water	throughout	0.18
ministry	money	0.18	rain	ng	0.18	thanks	hamidah	0.16	water	ones	0.18
ministry	low	0.18	rain	nh	0.18	thanks	seun	0.16	water	capital	0.18
ministry	running	0.18	rain	nine	0.18	thanks	thoung	0.16	water	issues	0.18
ministry	less	0.18	rain	overflow	0.18	thanks	vonok	0.16	water	animals	0.18
ministry	continue	0.18	rain	paper	0.18	thanks	ãrm	0.16	water	used	0.18
ministry	color	0.18	rain	phenomenon	0.18	thanks	åºåº	0.16	water	chantrea	0.18
ministry	learn	0.18	rain	riels	0.18	thanks	earlier	0.16	water	hun	0.18
ministry	climate	0.18	rain	sang	0.18	thanks	herz	0.16	water	dams	0.18
ministry	achievemen	0.18	rain	sangng	0.18	thanks	queen	0.16	water	groups	0.18
ministry	system	0.18	rain	seemed	0.18	thanks	showing	0.16	water	understandin	0.18
ministry	prime	0.18	rain	sothida	0.18	thanks	daun	0.16	water	way	0.18
ministry	wish	0.18	rain	stops	0.18	thanks	countryside	0.16	water	ministries	0.18
ministry	rest	0.18	rain	area	0.17	thanks	give	0.15	water	sit	0.18
ministry	local	0.18	rain	beginning	0.17	thanks	teat	0.15	water	surrounding	0.18
ministry	scheme	0.18	rain	harvesters	0.17	thanks	link	0.15	water	sreng	0.18
ministry	chantrea	0.18	rain	running	0.17	thanks	difficult	0.15	water	distribution	0.18
ministry	hun	0.18	rain	age	0.17	thanks	almost	0.15	water	kor	0.18
ministry	bringing	0.18	rain	dark	0.17	thanks	april	0.15	water	bringing	0.18
ministry	ho	0.18	rain	climatechange	0.17	thanks	start	0.15	water	ho	0.18
ministry	ability	0.18	rain	chairman	0.17	thanks	confirm	0.15	water	battambang	0.17
ministry	clarification	0.18	rain	temperature	0.17	thanks	socheat	0.15	water	care	0.17
ministry	delighted	0.18	rain	alertness	0.17	thanks	things	0.15	water	give	0.17
ministry	diverted	0.18	rain	deduce	0.17				water	made	0.17
ministry	ended	0.18	rain	domestic	0.17				water	head	0.17
ministry	excavated	0.18	rain	exclude	0.17				water	never	0.17
ministry	finance	0.18	rain	final	0.17				water	almost	0.17
ministry	handle	0.18	rain	furthermore	0.17				water	half	0.17
ministry	hek	0.18	rain	nights	0.17				water	old	0.17
ministry	ignore	0.18	rain	occurs	0.17				water	construction	0.17
ministry	invite	0.18	rain	oven	0.17				water	phase	0.17
ministry	kachik	0.18	rain	prepare	0.17				water	project	0.17
ministry	lawmaker	0.18	rain	spell	0.17				water	rest	0.17
ministry	moved	0.18	rain	thanksachra	0.17				water	mentioned	0.17
ministry	proceeding	0.18	rain	thanksgiving	0.17				water	office	0.17
ministry	pu	0.18	rain	welcome	0.17				water	policy	0.17
ministry	romeask	0.18	rain	yards	0.17				water	uses	0.17
ministry	sixth	0.18	rain	yogurt	0.17				water	drinking	0.17
ministry	steps	0.18	rain	aka	0.17				water	properly	0.17
ministry	subdivision	0.18	rain	bishop	0.17				water	works	0.17
ministry	talents	0.18	rain	commemorate	0.17				water	write	0.17
ministry	teap	0.18	rain	cup	0.17				water	already	0.17
ministry	teapra	0.18	rain	falls	0.17				water	lacking	0.17
ministry	tracks	0.18	rain	happens	0.17				water	abuwaa	0.17
ministry	undergone	0.18	rain	kiss	0.17				water	ces	0.17
ministry	wicker	0.18	rain	middle	0.17				water	chung	0.17
ministry	wifi	0.18	rain	normally	0.17				water	counters	0.17
ministry	battambang	0.17	rain	obesity	0.17				water	cracä	0.17
ministry	well	0.17	rain	pours	0.17				water	increasing	0.17
ministry	government	0.17	rain	rainmaker	0.17				water	influence	0.17
ministry	provide	0.17	rain	roast	0.17				water	kralanh	0.17
ministry	even	0.17	rain	session	0.17				water	pilot	0.17
ministry	never	0.17	rain	soup	0.17				water	resour	0.17
ministry	dry	0.17	rain	sruoch	0.17				water	srevl	0.17
ministry	may	0.17	rain	threw	0.17				water	sreypoch	0.17
ministry	climatechan	0.17	rain	thsnk	0.17				water	tengleang	0.17
ministry	old	0.17	rain	ok	0.17				water	vornsomaly	0.17
ministry	useful	0.17	rain	sad	0.17				water	sustainable	0.17
ministry	national	0.17	rain	nas	0.17				water	storm	0.16
ministry	die	0.17	rain	suffer	0.17				water	kampot	0.16
ministry	predicts	0.17	rain	eye	0.17				water	clear	0.16
	residents	0.17	rain	summer	0.17				water	huge	0.16
ministry	romeas	0.17	rain	knowing	0.17				water	month	0.16
ministry	countryside	0.17	rain	rich	0.17				water	bit	0.16

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