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DARAJA endline data analysis

Learning and outcomes workshop

September 2020

Dar Es Salaam

Nairobi

Key Indicators for Data analysis:

% Access

In what ways do people regularly access/ receive weather climate information (E.g. weather forecasts or warnings)?

% Preference

Why do respondents prefer receiving/accessing weather and climate information from specific channels

% Understanding

How well the respondents are able to understand the weather information (e.g. forecast)? *(technical details, advice, probability, impacts, implications)*

% Use

How do people use the information they get through different channels, which are the most common preparatory actions taken

DARAJA

Nairobi

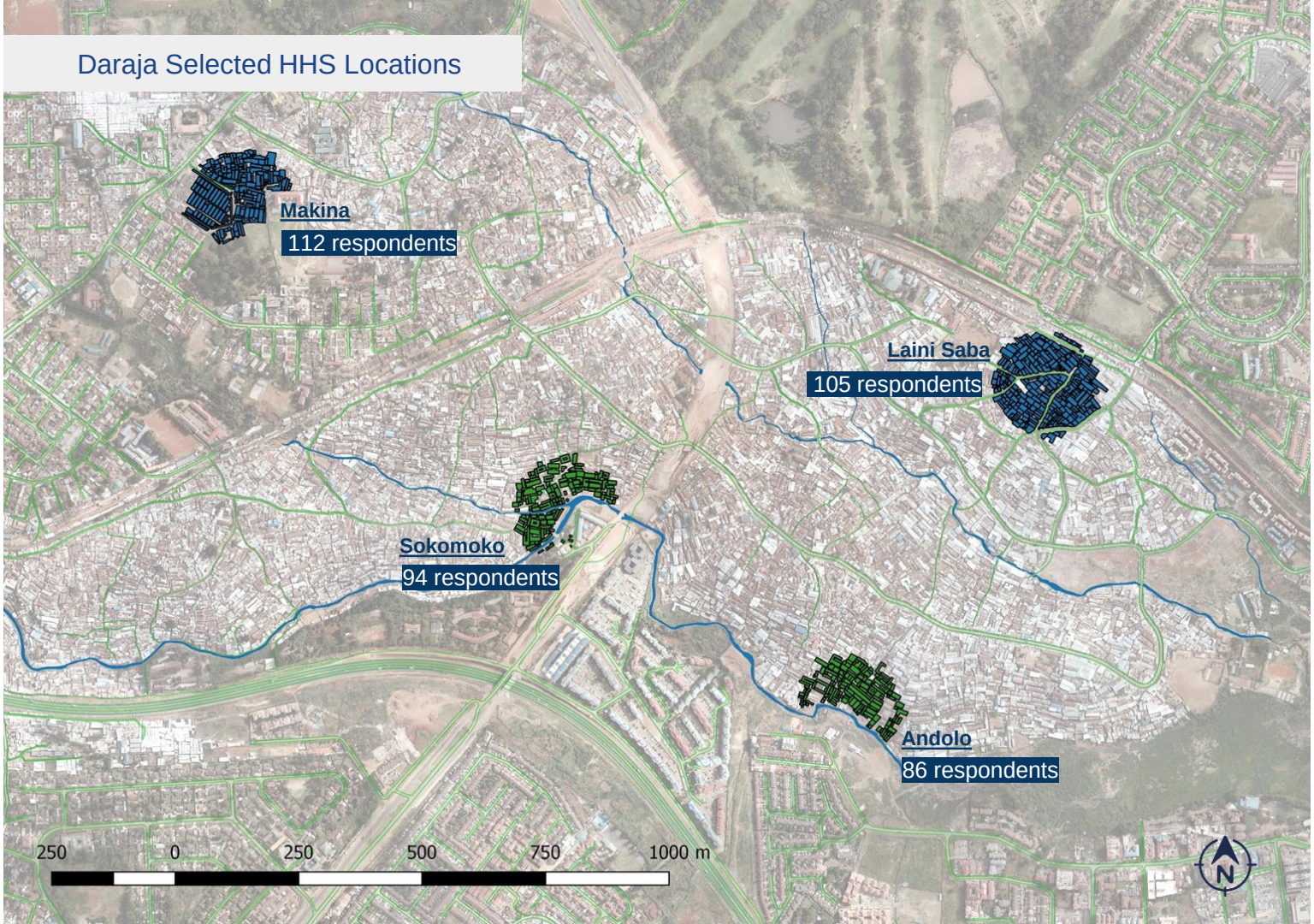
398 HHS respondents

4 areas /1 Informal Settlement

10 Focus Group Discussions

12 Key Informant Interviews

Daraja Selected HHS Locations



Nairobi

Pilots:

- Community communication system
- City-wide radio station
- Community radio stations
- Social media and awareness campaign

Key Inputs:

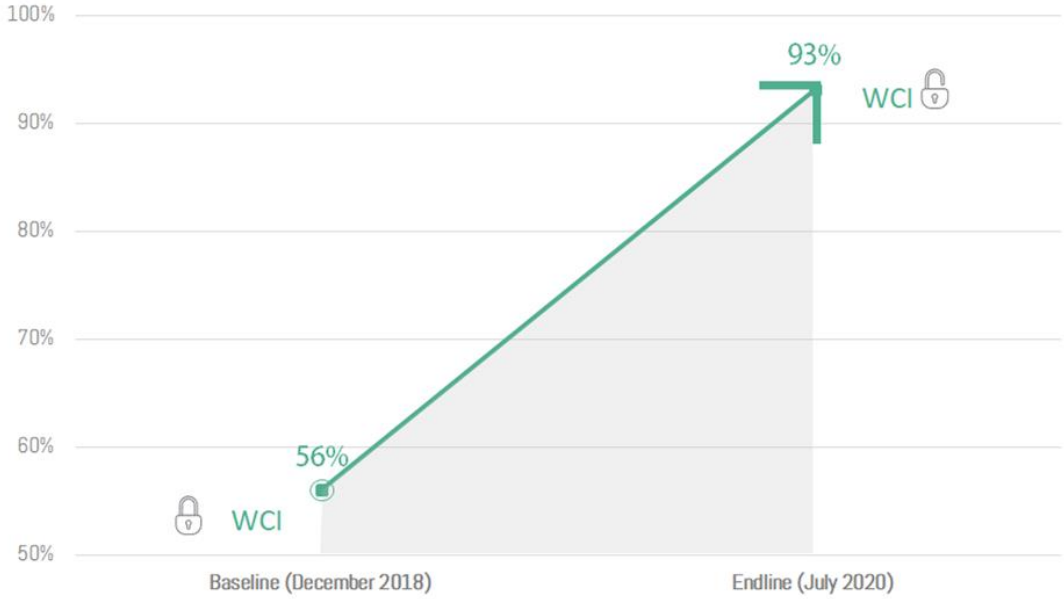
➔ Daily and weekly forecast
➔ Terminology reference guide
➔ Impact description guide
➔ Re-designed weather icons

Access

93% respondents access or receive weather and climate information.

Compared with **56%** of respondents in the baseline.

% Access from the baseline to the Endline



% of total respondents **[370]**

Access

SMS and Radio

are the most popular ways to access/ receive WCI.

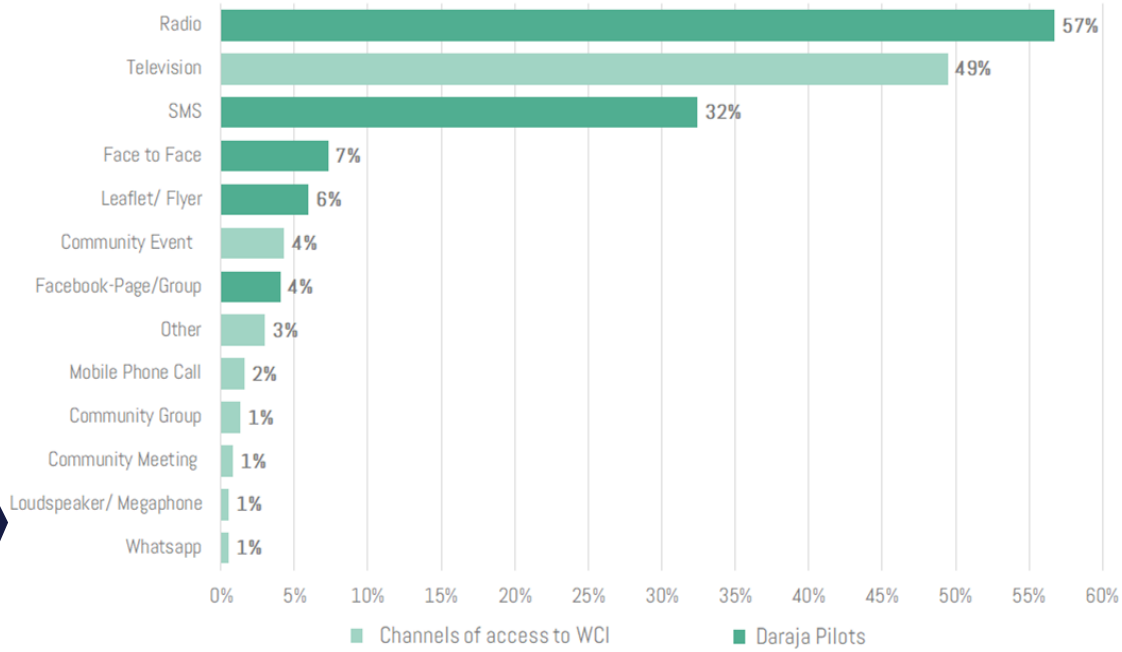
57%

Radio

32%

SMS

% of respondents who access WCI by channel



% of total respondents who access WCI **[370 respondents]**

Nairobi / HHS Survey Data Results-2020

Access:
Pilot channels

54% respondents access or receive WCI through the DARAJA informed services.

31% receive Weather Mtaani SMS

31% listen to WCI on one of the Weather Mtaani participating radio stations

19% by leaflet or community events/ meetings

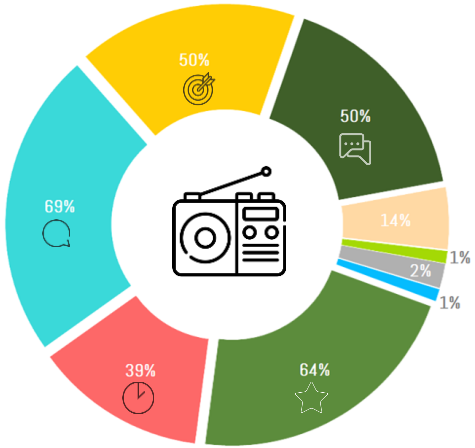
7% by Habari Kibra Facebook page

% of total respondents who access WCI **[370 respondents]**

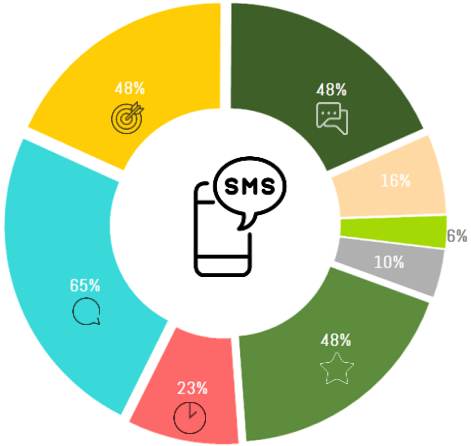
Nairobi / HHS Survey Data Results-2020

Access: Preference

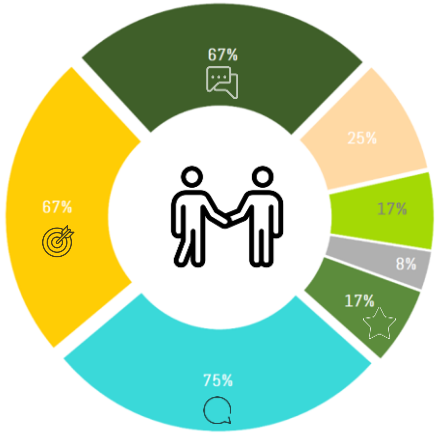
Radio
36 respondents



SMS
31 respondents



Face to Face / Fb / Leaflet
12 respondents



- The information was easy to understand
- Language used
- I trusted the source
- Advice was provided
- Relevant to my area
- Other
- Timing of the forecast (when I recieved it)
- The information was accurate
- It was relevant to my needs
- Advice provided relevant to me
- Visuals included
- Dont Know

Based on respondents who access WCI through a single channel

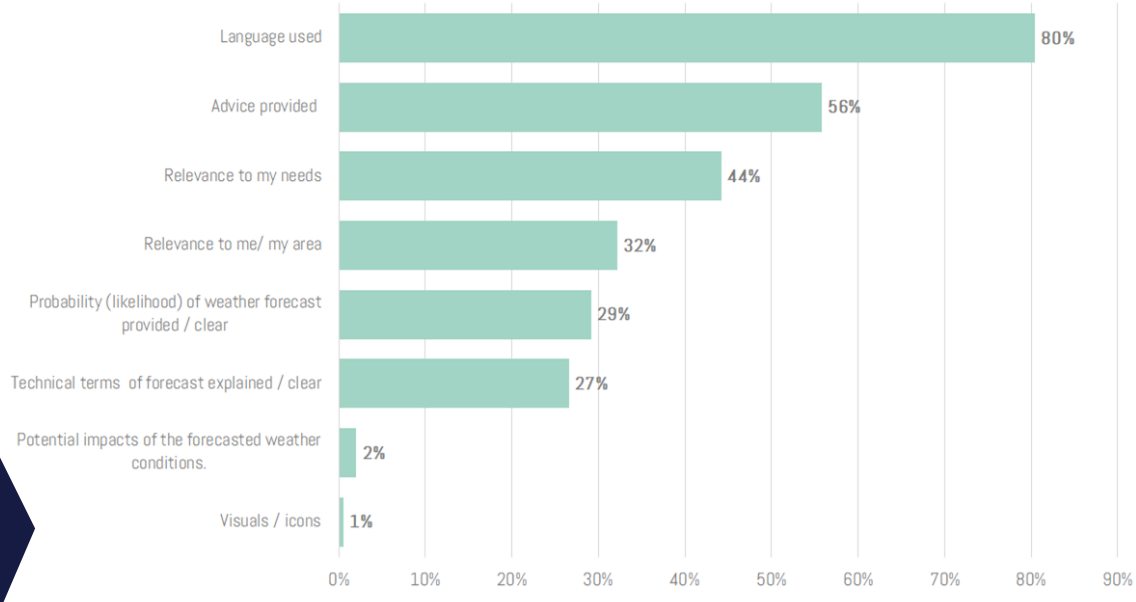
Understanding:
Daraja pilot channels

93% of respondents understood information shared through DARAJA pilots very well.

Most popular features that made understanding easier:

1. Language Used **(80%)**
2. Advice Provided **(56%)**
3. Relevance to their needs **(44%)**

% of features which made understanding easier
Daraja Pilot Channels



% of respondents who state they understand the WCI very well **[199 respondents]**

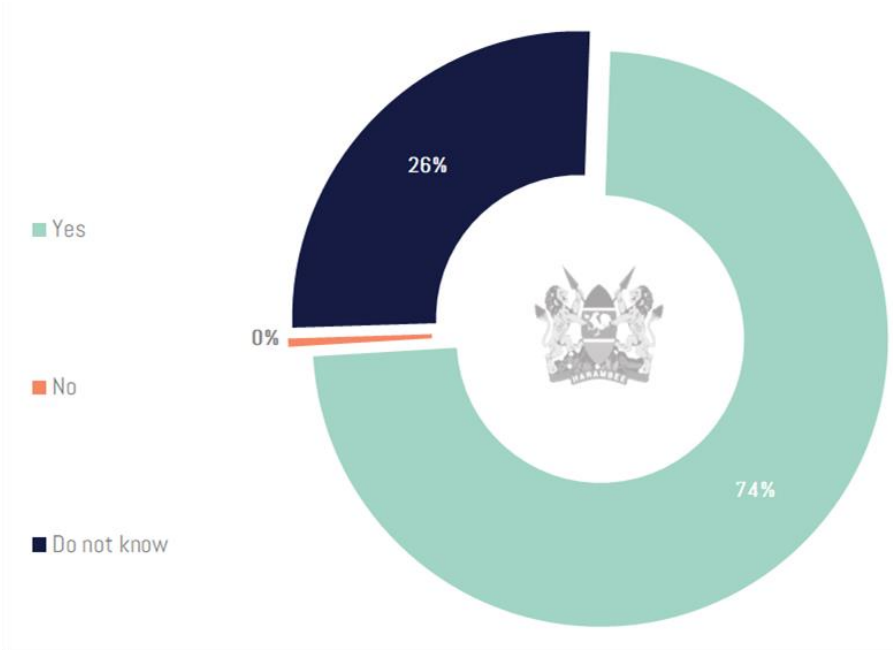
Nairobi / HHS Survey Data Results-2020

Understanding:
Daraja pilot channels

77% know the source of the information.

74% are aware the source of the information is KMD.

% of acknowledgment of KMD as source of WCI



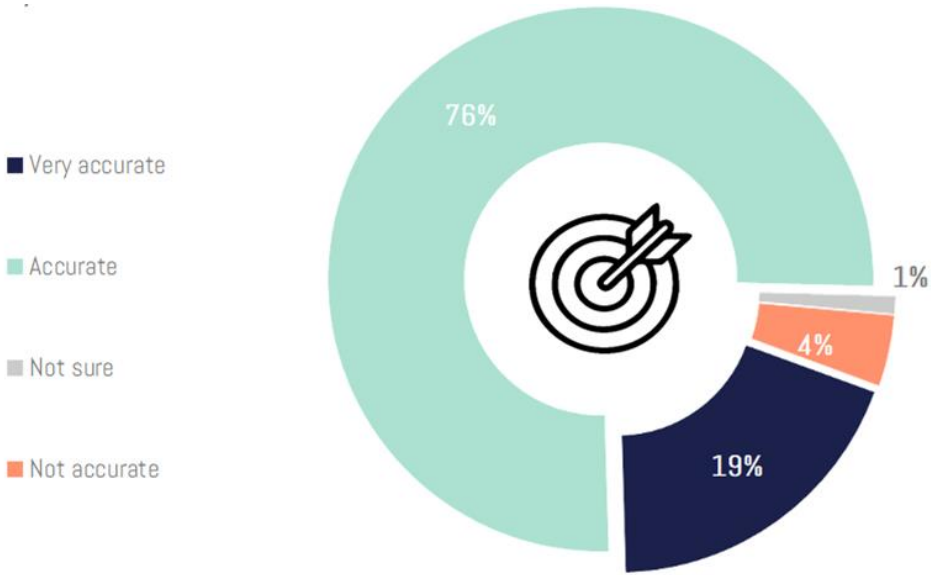
% of respondents who access WCI through Daraja services **[215 respondents]**

Nairobi / HHS Survey Data Results-2020

Accuracy

76% of respondents stated they found the information through the DARAJA services to be accurate, and an additional **19%** found it to be very accurate

% Accuracy of the WCI received



% .of respondents who access WCI through pilots **[215 respondents]**

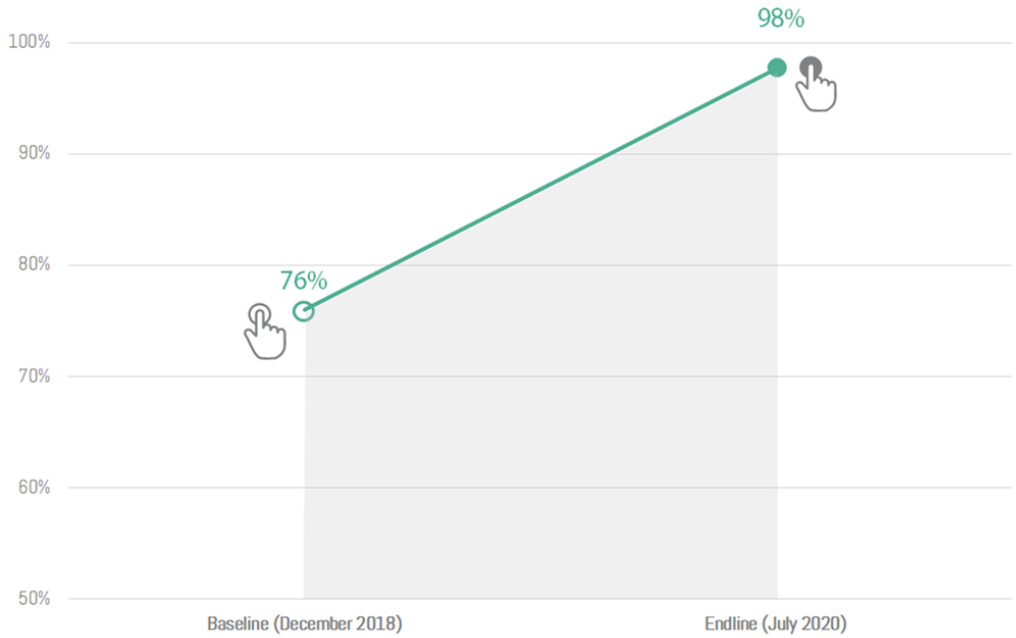
Use:

98% use the information through the DARAJA pilots to take preparatory action.

Compared with 76% in the baseline.

85% share the information with their household, friends and family.

% of respondents who use WCI



% of respondents who access WCI through pilots **[215 respondents]**

Nairobi / HHS Survey Data Results-2020

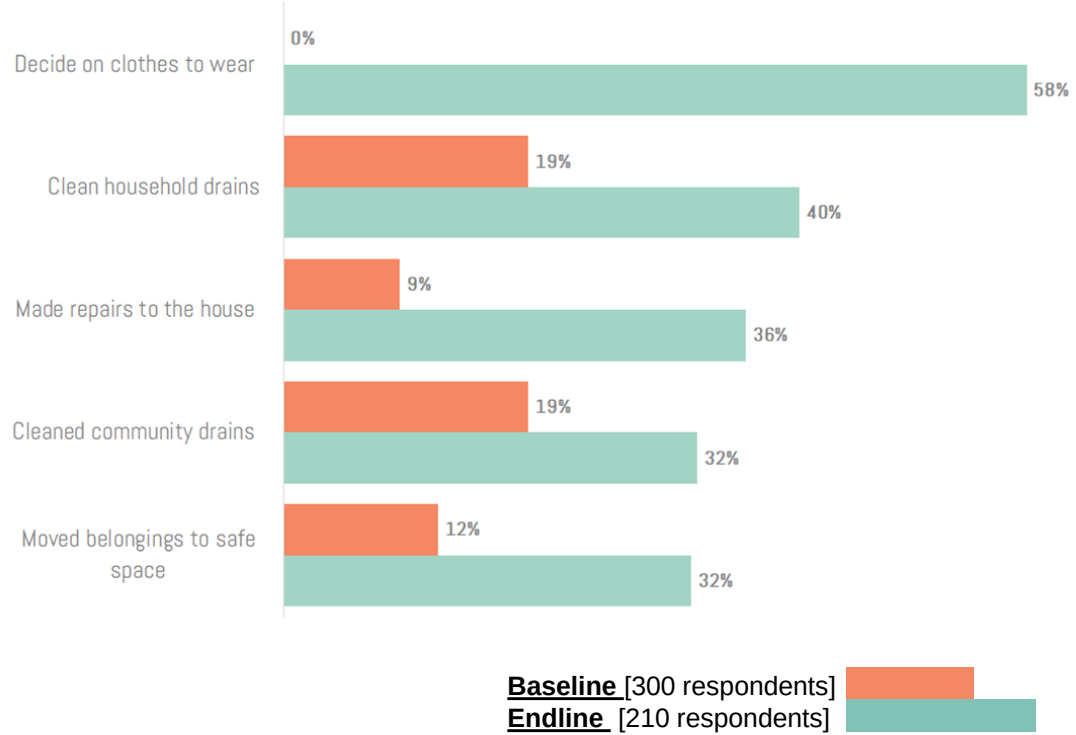
Use: Most common actions taken

Common actions taken

1. Decide on clothes to wear*
2. Clean household drains
3. Made repairs to house
4. Clean Community drains
5. Moved belongings to a safe place

**option not asked in baseline*

% most common ways of use, from the Baseline to the Endline



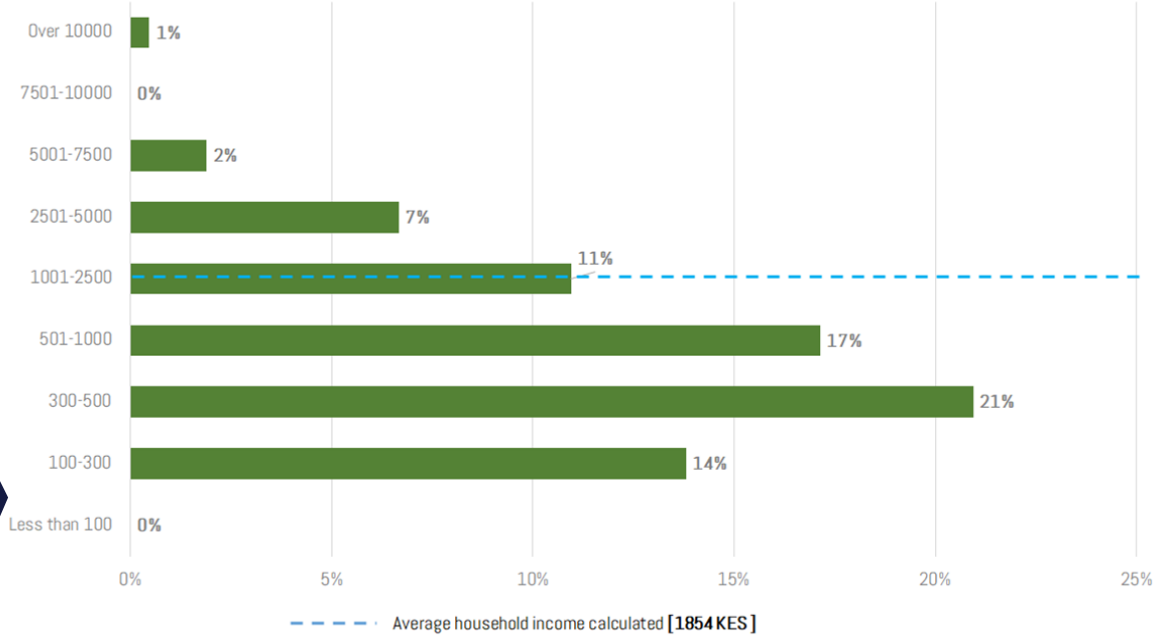
Nairobi / HHS Survey Data Results-2020

Use:
Avoided Damage & Loss

76% felt the actions they took saved their household income.

76% felt they were able to protect their assets and valuables, most commonly their clothing, radio, TV, bed, food, food and furniture.

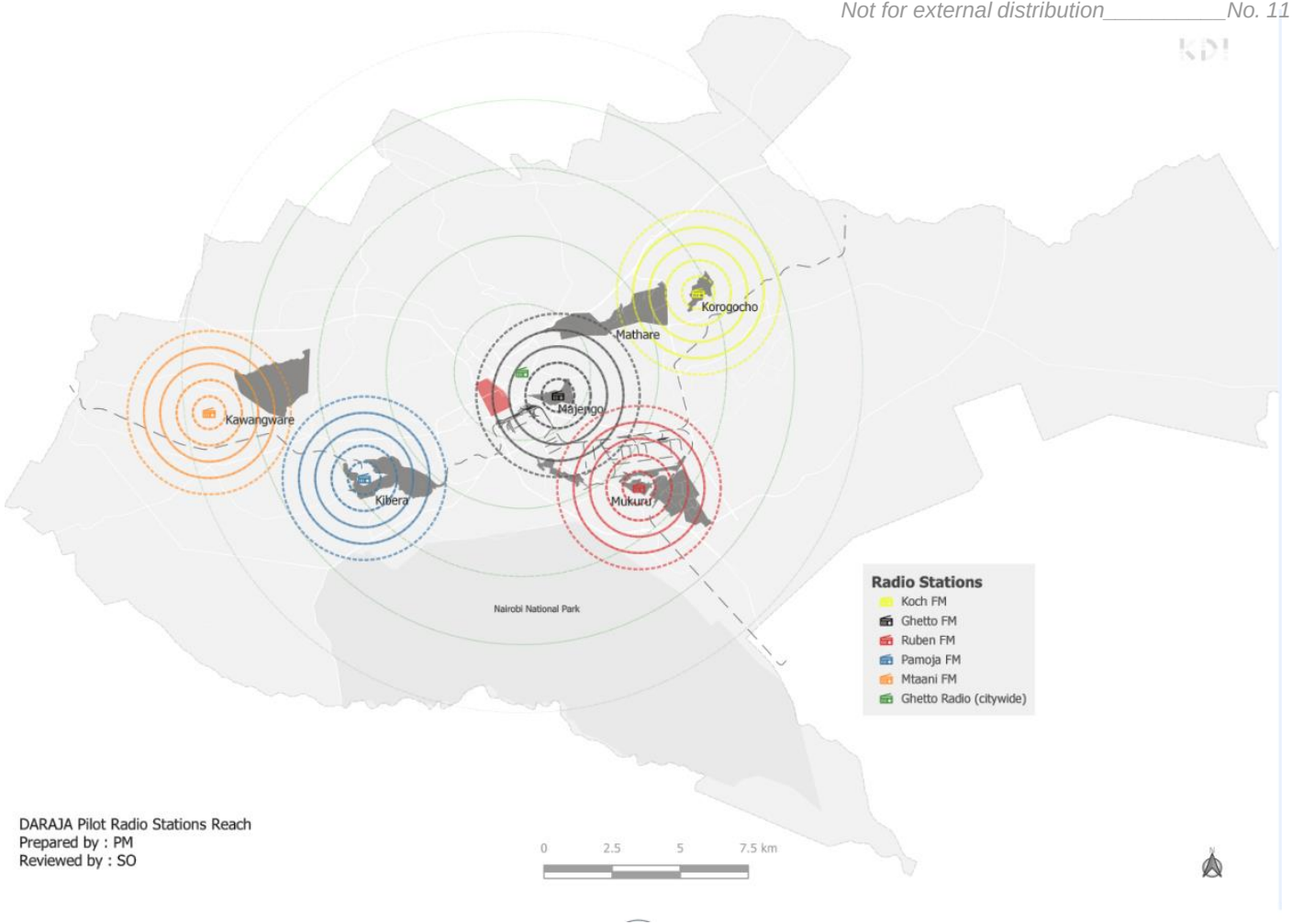
% of approximate saved income per week, by receiving WCI
*Kenyan Shilling **(KES)***



% of respondents who use WCI accessed through Daraja Pilots **[210 respondents]**

Nairobi / HHS Survey Data Results-2020

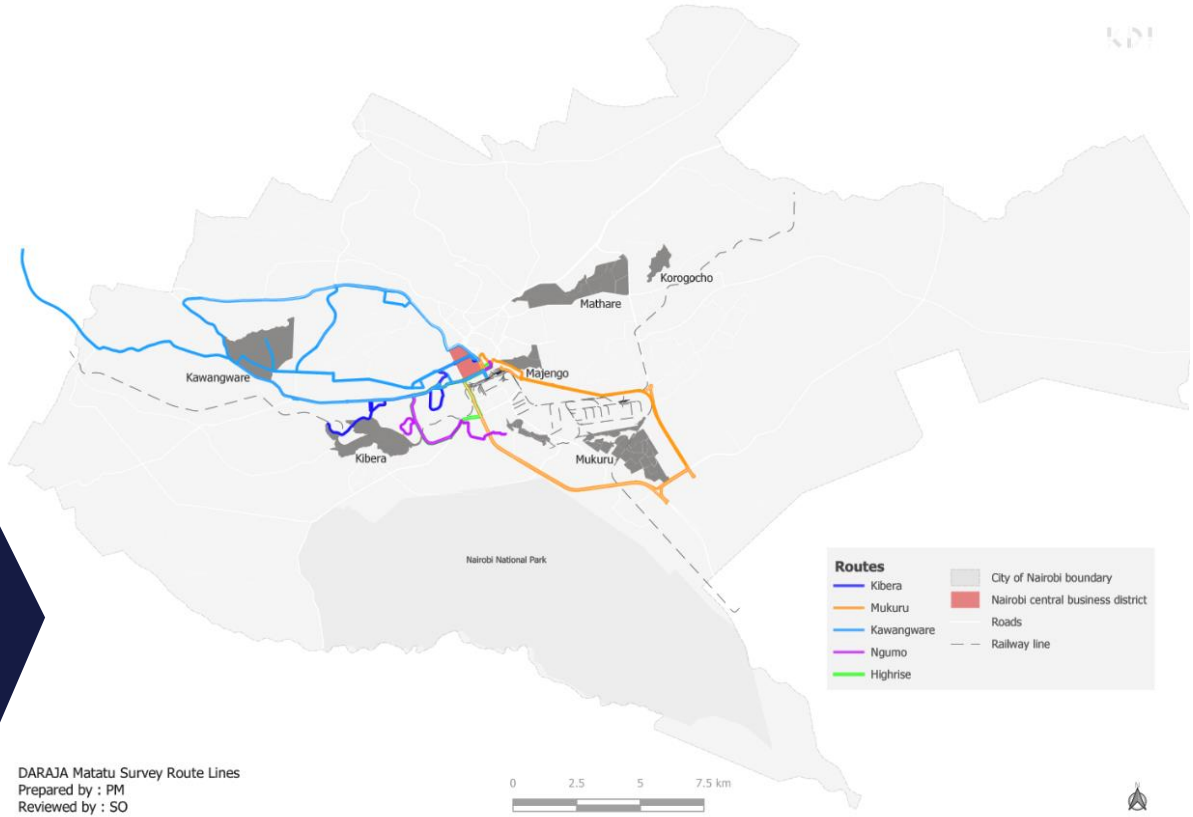
Ghetto Radio	800,000 - 1 million
Pamoja FM	460,000
Ruben FM	300,000
Ghetto FM	200,000
Mtaani FM	300,000
Koch FM	500,000



City-wide Radio pilot: Matatu survey findings

66 Matatu drivers surveyed

On routes:
Kawangware *to CBD*
Mukuru *to CBD*
Kibera
Ngumo
Highrise



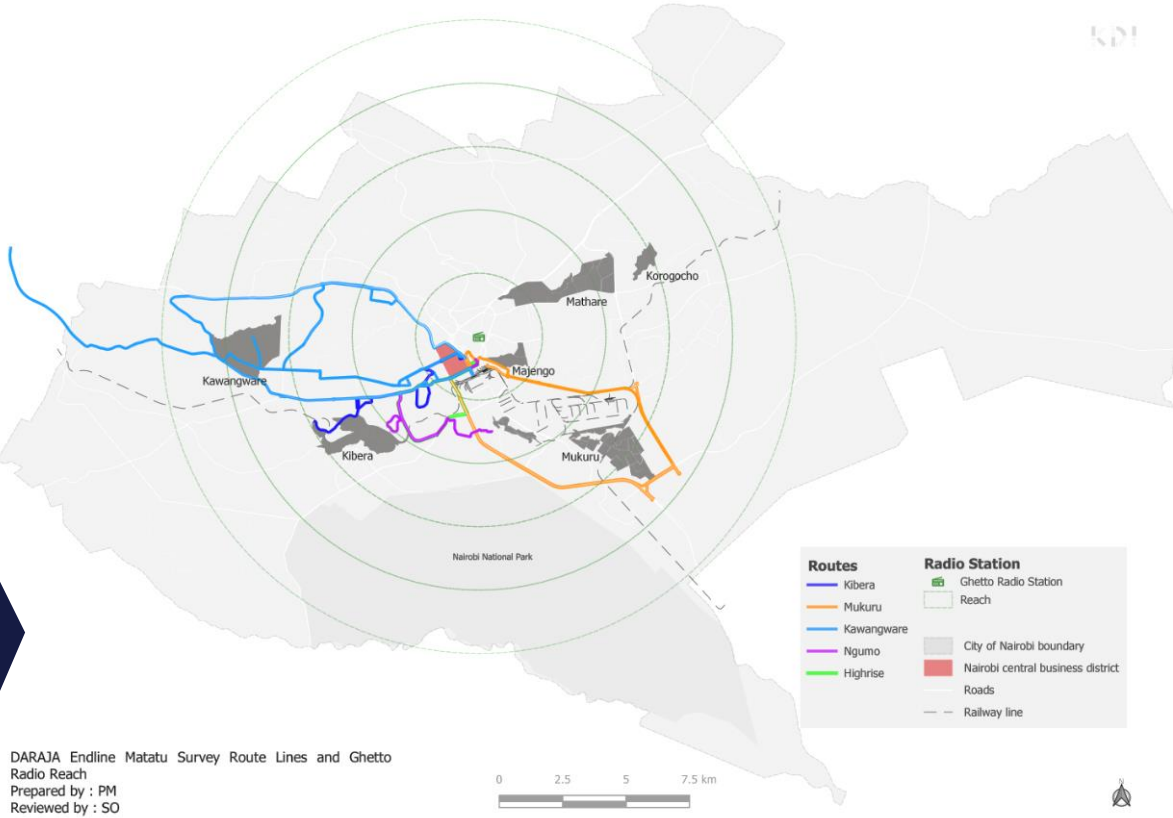
City-wide Radio pilot: Matatu survey findings

65% listen to Ghetto Radio everyday

94% have taken note of the weather forecast on Ghetto Radio

% of total respondents **[66]**

Nairobi / Matatu drivers Survey Data Results-2020

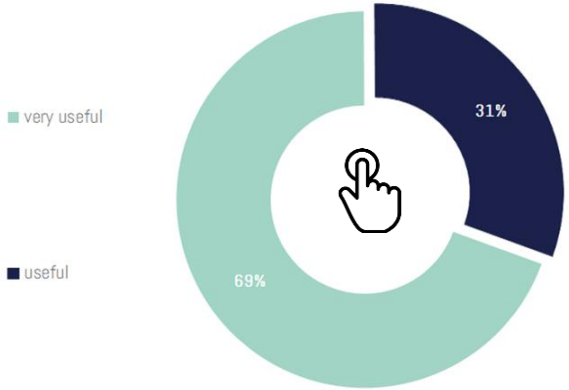


City-wide Radio pilot: Matatu survey findings

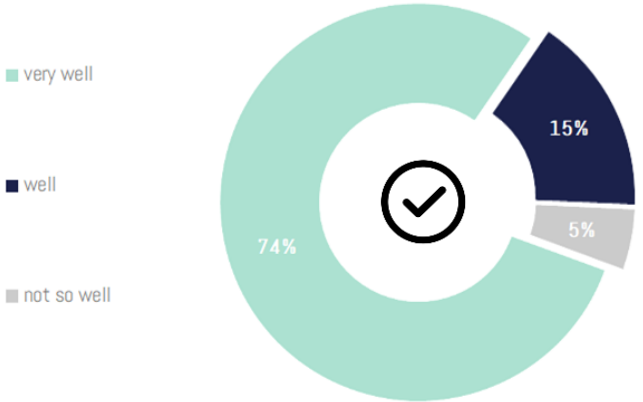
69% find the weather announcement to be very useful. The remaining drivers found it to be useful.

74% understand the weather announcement very well.
An additional 15% understand it well.

% of respondents who find WCI useful



% understanding the message given



% of total respondents **[66]**

Dar Es Salaam

106 HHS respondents

1 settlement

5 Focus Group Discussions

6 Key Informant Interviews

Dar Es Salaam

Pilots:

- Community communications system
- Schools Programme
- Clouds FM radio
- Local municipality partnerships and community training

Key Inputs:

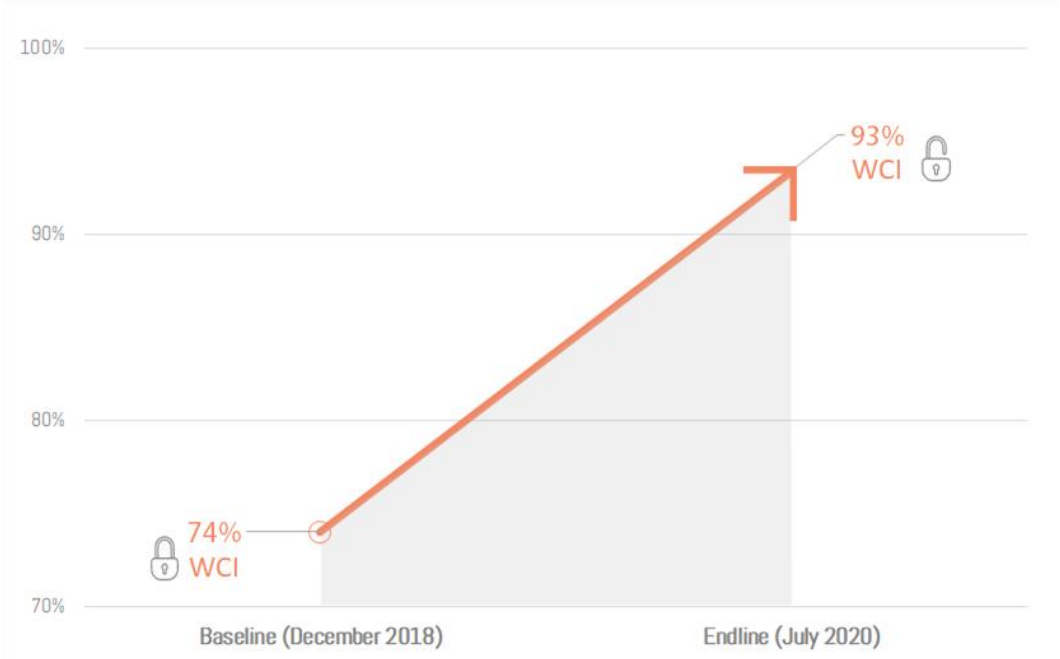
➔ Rolling 5-days forecast
➔ Terminology reference guide
➔ Impact description guide

Access

93% respondents access or receive weather and climate information.

Compared with 74% of respondents in the baseline.

% Access from the baseline to the Endline



% of total respondents **[105]**

Access

79% respondents use the DARAJA pilots with **SMS** being the most popular channel.

69%

SMS

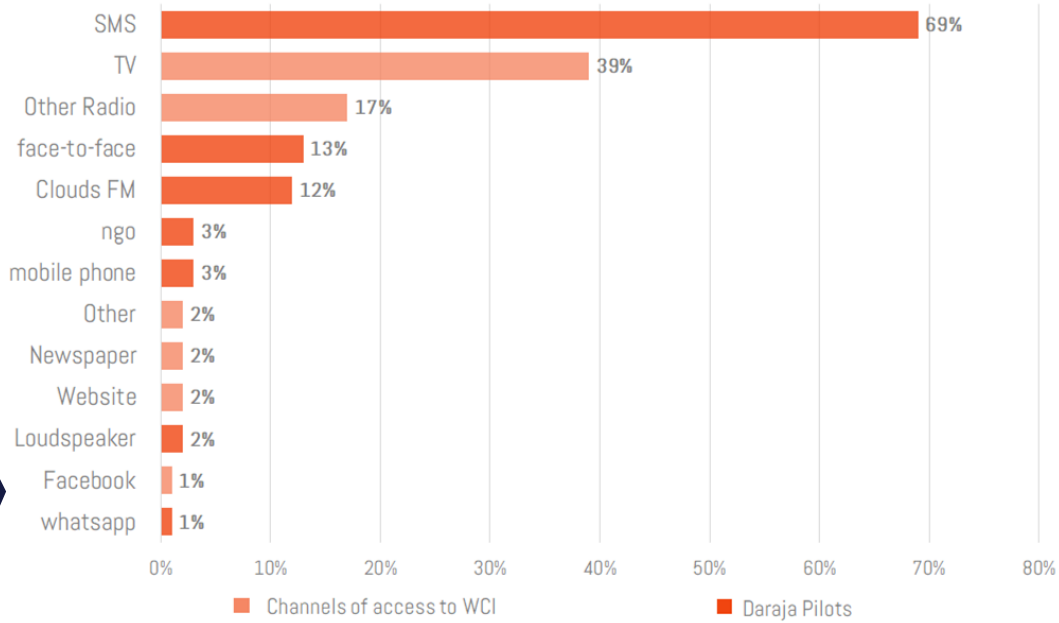
13%

Face to Face

12%

Radio

% of respondents who access WCI by channel



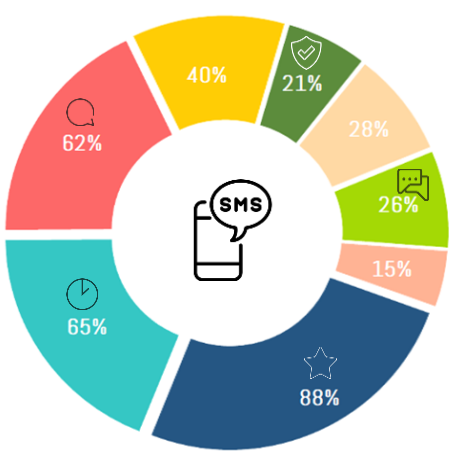
* % of respondents who access WCI **[99 respondents]**

Dar Es Salaam / HHS Survey Data Results-2020

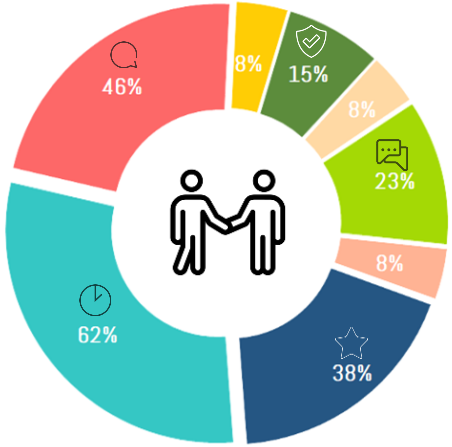
Access: preference

Reason for preferring pilot channels to access WCI

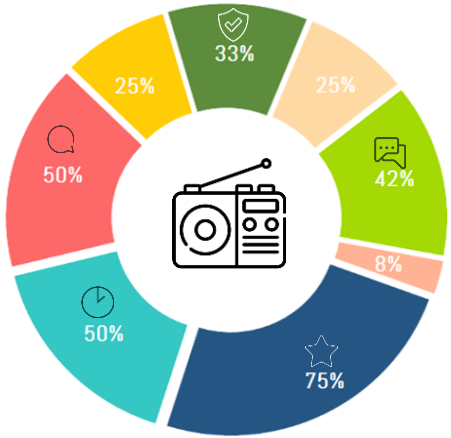
SMS Pilot
69% of respondents



Face to Face
13% of respondents



Clouds Fm Radio
12% of respondents



- The information was easy to understand
- Language used
- I trusted the source
- Advice was provided
- Visuals included
- Timing of the forecast (when I received it)
- The information was accurate
- It was relevant to my needs
- Advice provided relevant to me, Relevant to my area

% of respondents who access WCI **[99 respondents]**

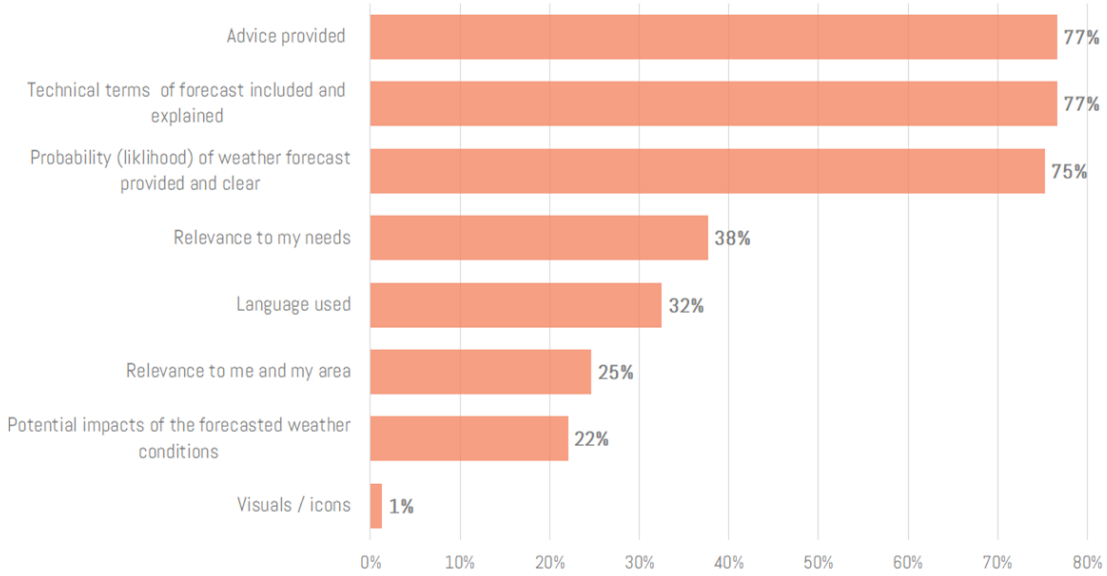
Understanding

Overall, 91% of respondents state they understand the information received through pilot channels very well.

Most popular features that made understanding easier:

1. Advice provided **(80%)**
2. Technical terms of forecast explained **(80%)**
3. Probability of weather forecast provided and clear **(78%)**

% of features which made understanding easier



% of respondents who state they understand the information very well through Daraja pilots **[77 respondents]**

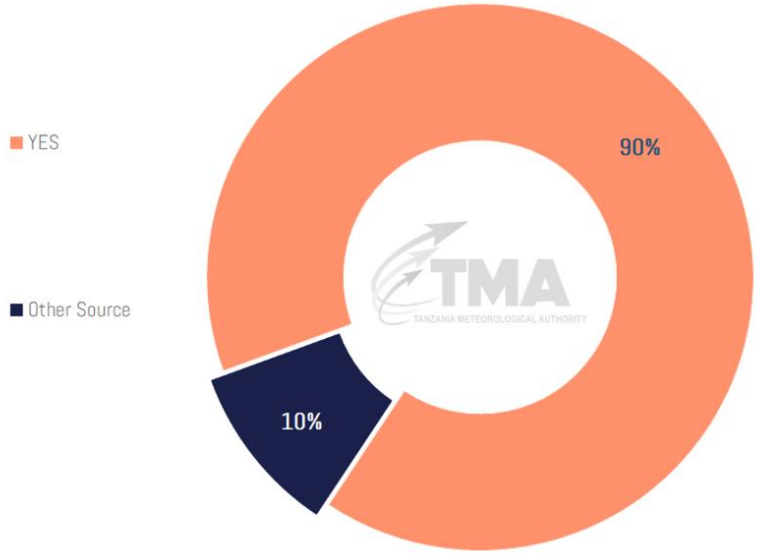
Dar Es Salaam / HHS Survey Data Results-2020

Understanding

90% stated the source of the WCI as TMA.

Compared with 72% of respondents in the baseline who were aware TMA is the mandated WCI provider.

% of respondents who indicate TMA as source of WCI

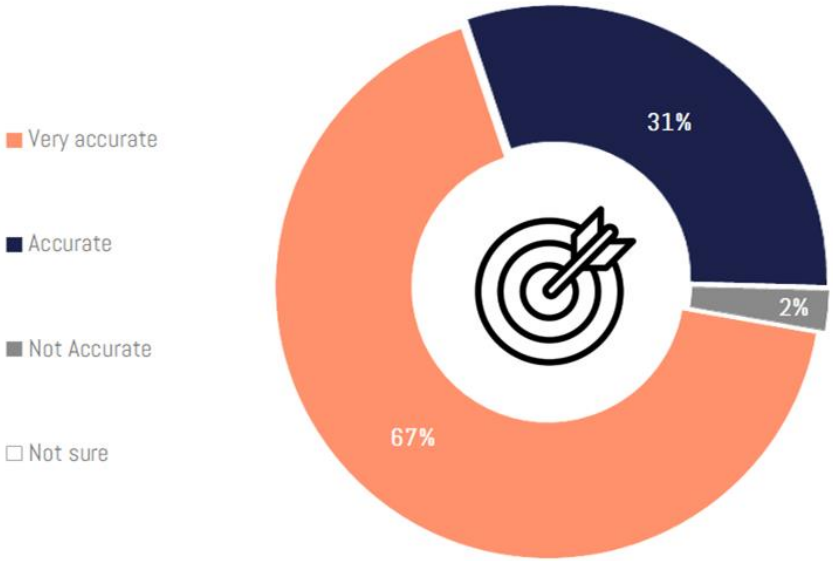


% of respondents who access WCI **[99]**

Accuracy

67% of respondents stated they found the information through the DARAJA services to be very accurate,
and an additional 31% found it to be accurate.

% Accuracy of the WCI received



% of respondents who access WCI through Dararaja Pilots **[85 respondents]**

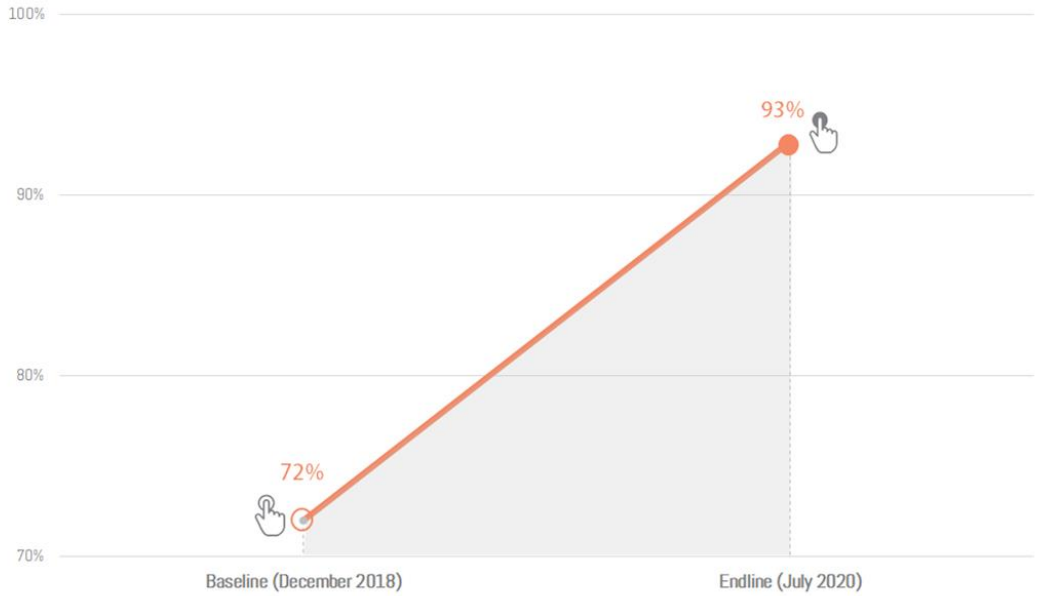
Use

93% use the information through the DARAJA pilot services to take preparatory action.

Compared to 72% of respondents in the baseline.

80% of those share the information at work, with their household, other family and with friends.

% of respondents who use WCI



% of respondents who access WCI through Daraja Pilots **[85 respondents]**

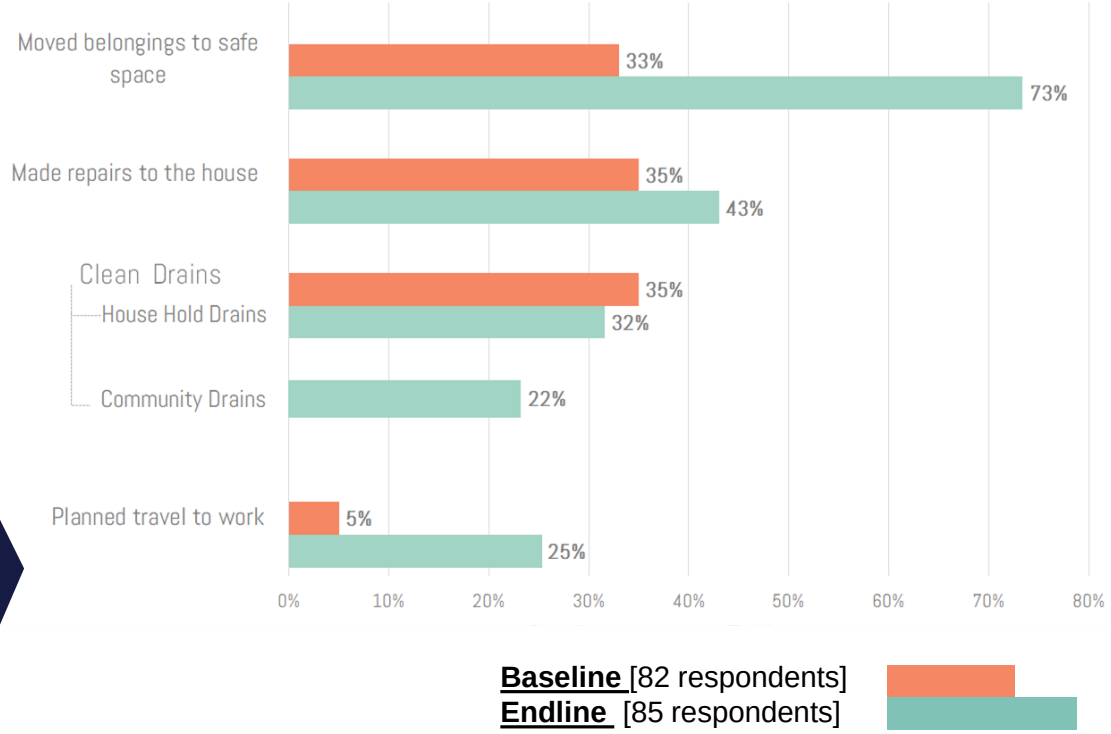
Dar Es Salaam / HHS Survey Data Results-2020

Use:

Common actions taken

1. Moved belongings to safe space.
2. Made repairs to the house.
3. Clean household drains.
4. Planned travel to work.
5. Clean community drains.

% common ways of use, from the Baseline to the Endline



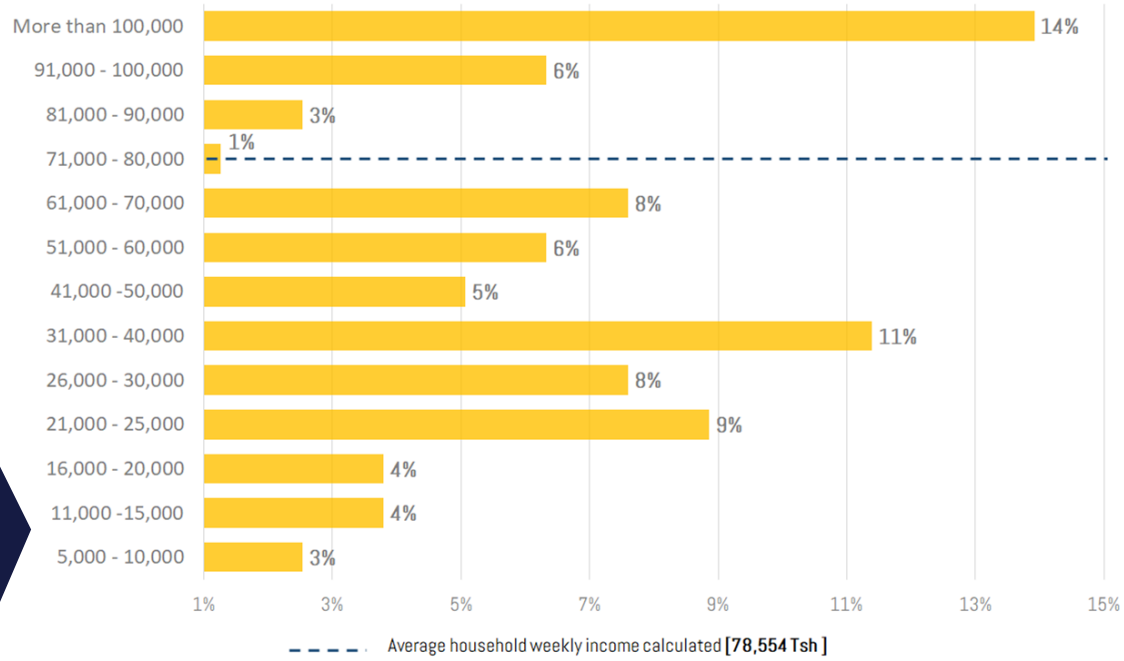
Baseline [82 respondents]
Endline [85 respondents]

Use:
Avoided Damage & Loss

81% felt the actions they took saved their household income.

81% felt they were able to protect their assets and valuables, most commonly their TV, small furniture, food and clothing.

% of approximate saved income per week, by receiving WCI
*Tanzanian Shilling **(Tsh)***



%.of respondents who used WCI through Daraja Pilots **[79 respondents]**

Dar Es Salaam / HHS Survey Data Results-2020

School pilot:

Teachers and **school children** as an intermediary in WCIS.

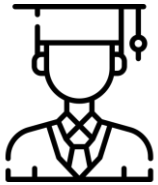
Teachers were trained on WCI and implemented design modules and training classes for the students.

Tools like **notice boards** and **school assemblies** during school hours were used to share information.

Schools Pilot
Total 8 Schools

Teachers trained
Total 19

With 1 Teacher Coordinating Programme



Students trained
Total 240

An additional **13,711** students across the 8 schools have received the information

Student-led awareness campaign

Information was shared within households, and with family and friends

School pilot:

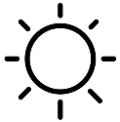
Feedback survey from **153 students** from **5 schools**

KII with teachers

153 students

76% More understanding of WCI

69% Take actions to protect themselves & community

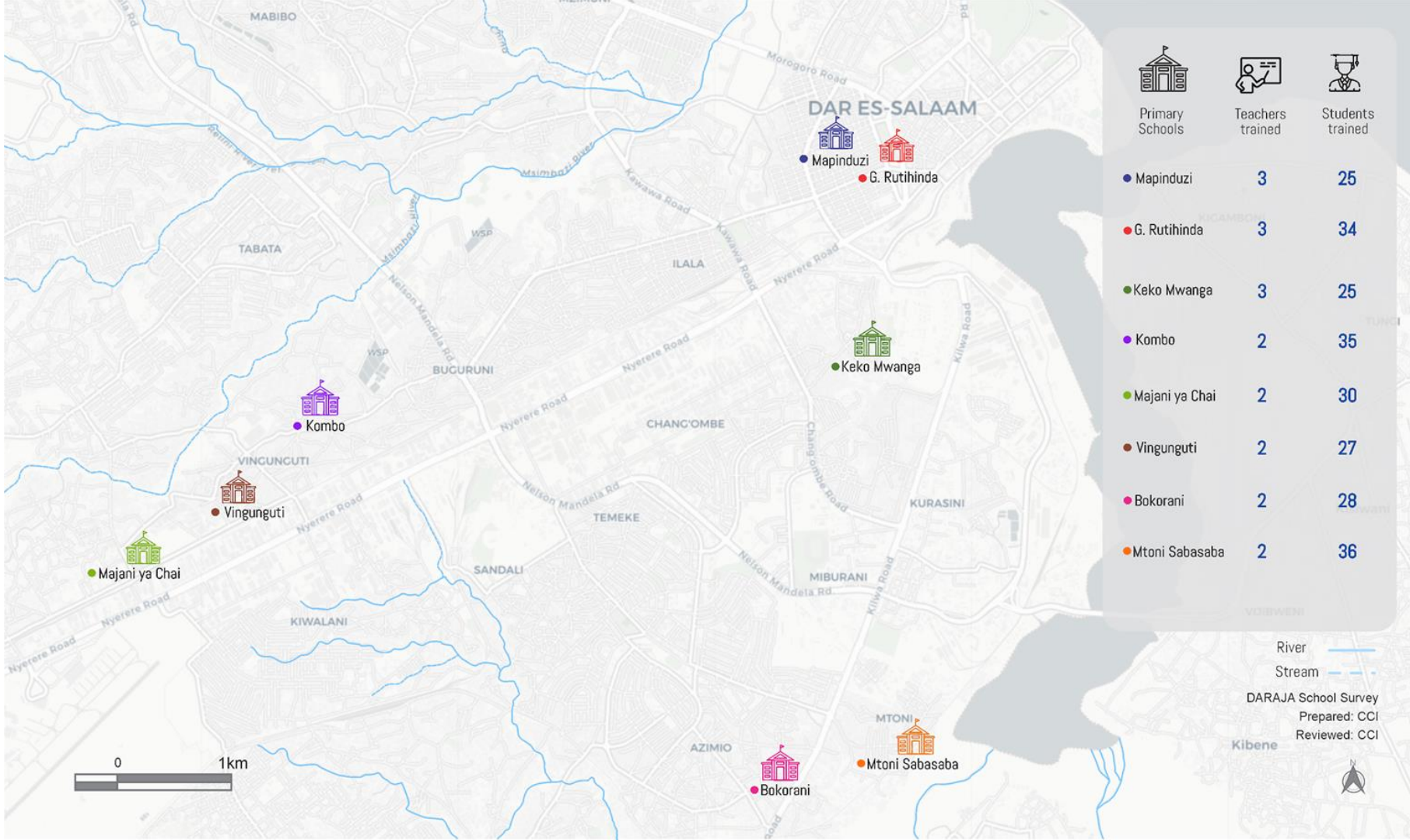


- Drink water
- Sit in shade
- Loose clothing

- Relocate
- Avoid playing in stagnant water
- Protective clothing & umbrella

57% Parents follow up on WCI through children & media

Schools: save budget on healthcare, books & resources, building maintenance



Primary Schools	Teachers trained	Students trained
Mapinduzi	3	25
G. Rutihinda	3	34
Keko Mwanga	3	25
Kombo	2	35
Majani ya Chai	2	30
Vingunguti	2	27
Bokorani	2	28
Mtoni Sabasaba	2	36

Nairobi

Information Ecosystem Maps

ⓘ Aim:

1. **Identify channels** that people use to gain information
2. Establish **multi-way communication** between TMA and users
3. **Diagnose blockages** to the flow of WCI
4. Develop practical measures to **remedy blockages**

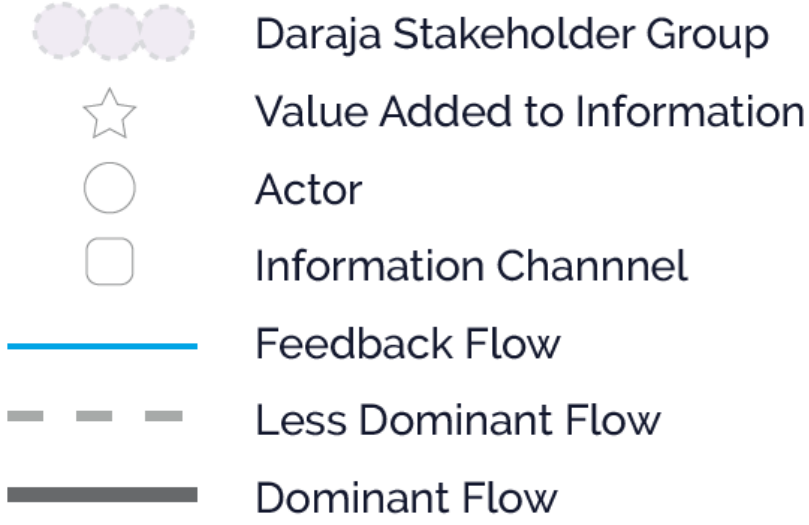
Concept:

Diagrams show:

- Actors
- Channels used
- Frequency and popularity of info flow

Additional for Endline:

- Coordination of actors
- Value added through interpretation and locally relevant advice



Validation:

Please consider the following questions as you review the diagrams:

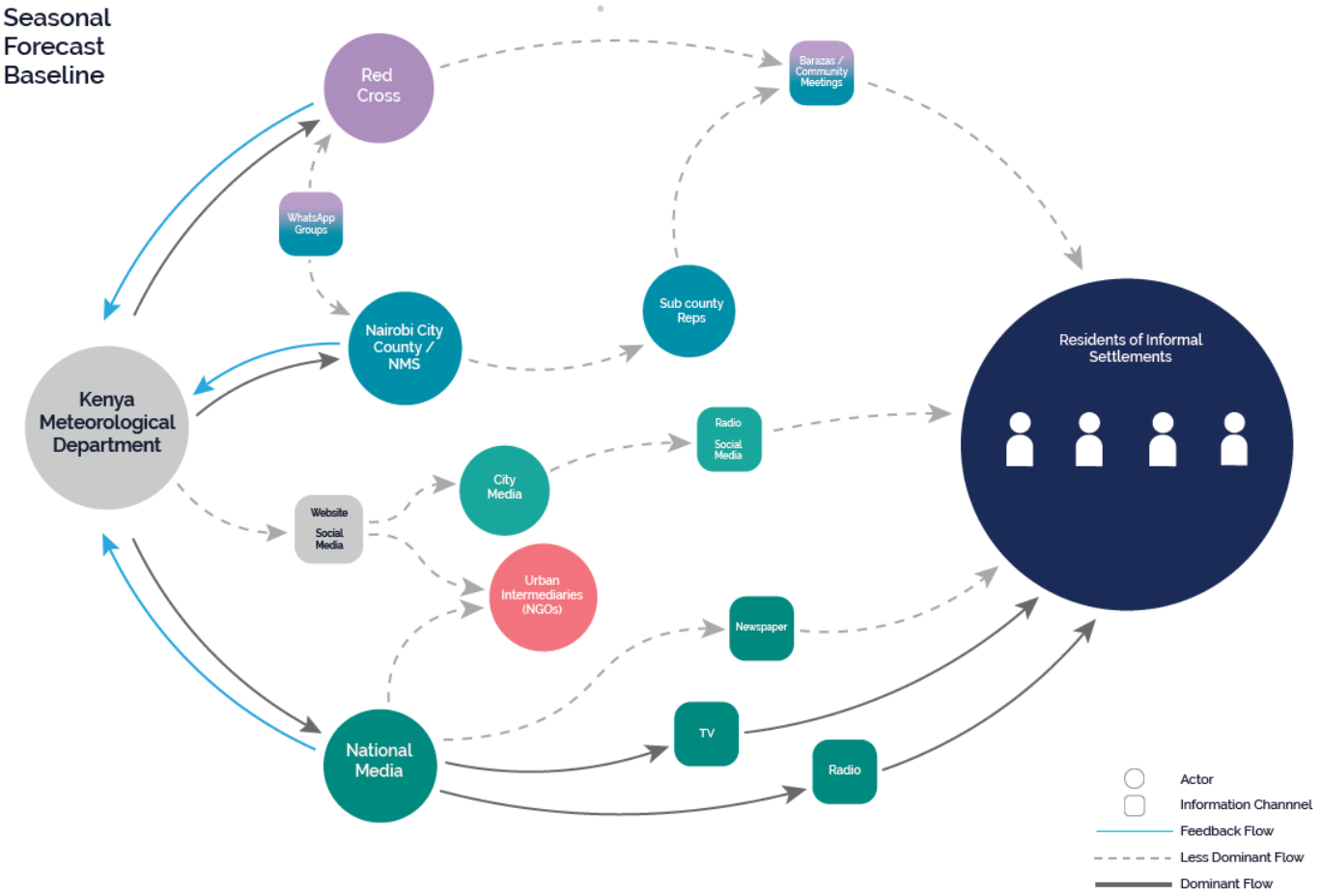
Thinking about the different types of forecast *(seasonal, regular & severe)* information services:

1. Do these diagrams represent the ways you/ your organisation receive or access the forecast information and share it with others?

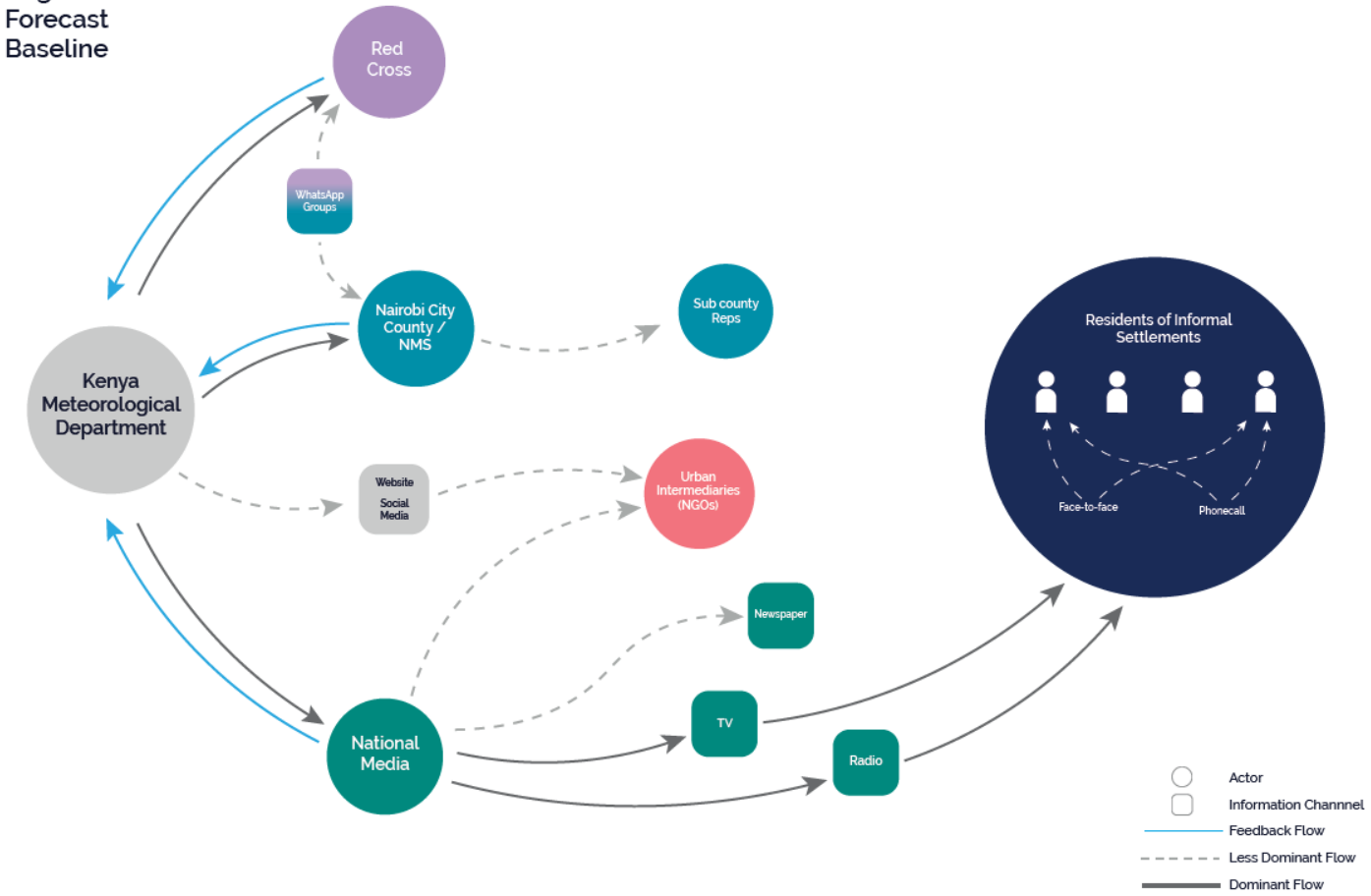
1. Do these diagrams represent the changes to information flows from the DARAJA pilot services?

ⓘ Baseline:

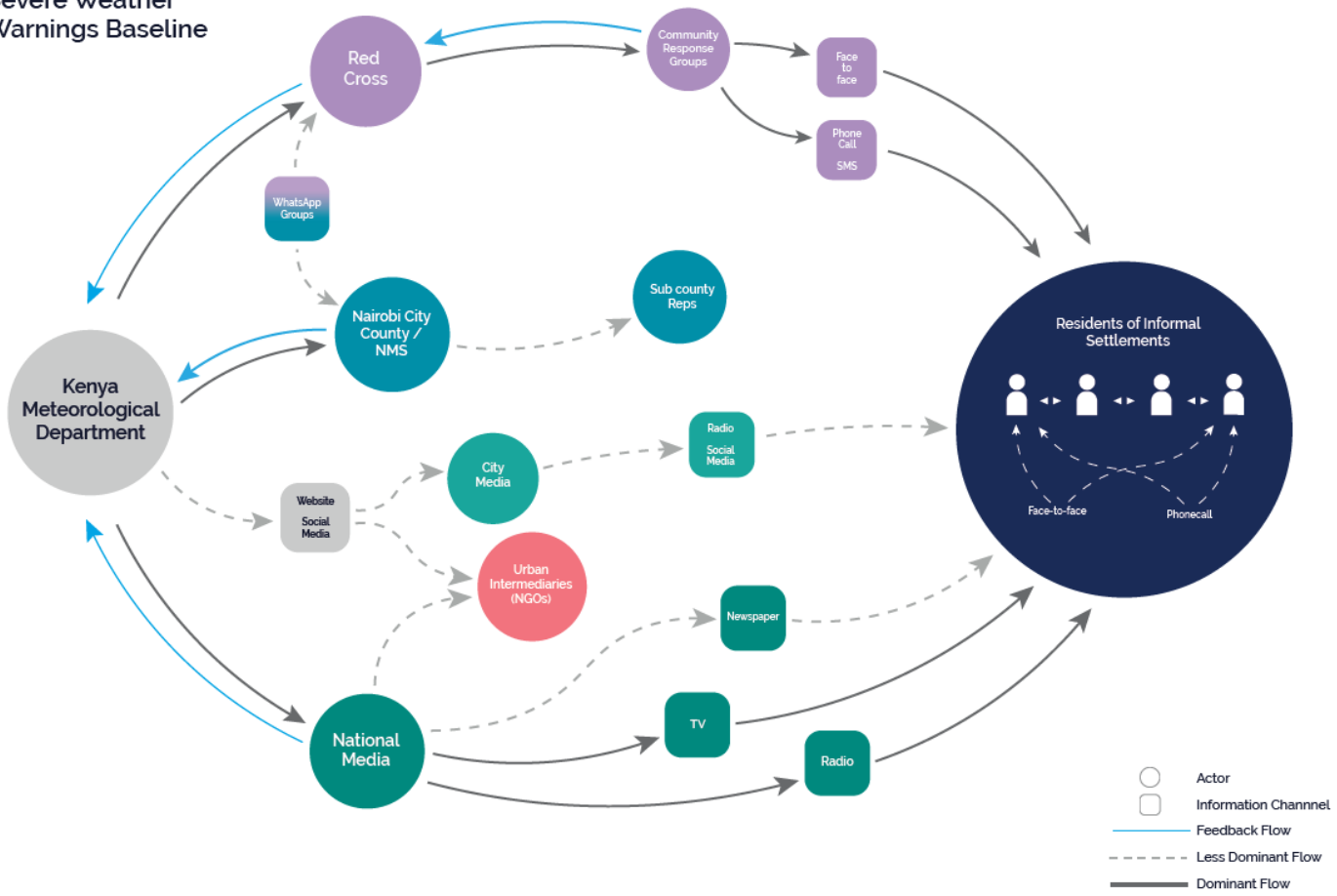
Nairobi: Seasonal Forecast Baseline



Nairobi: Regular Forecast Baseline

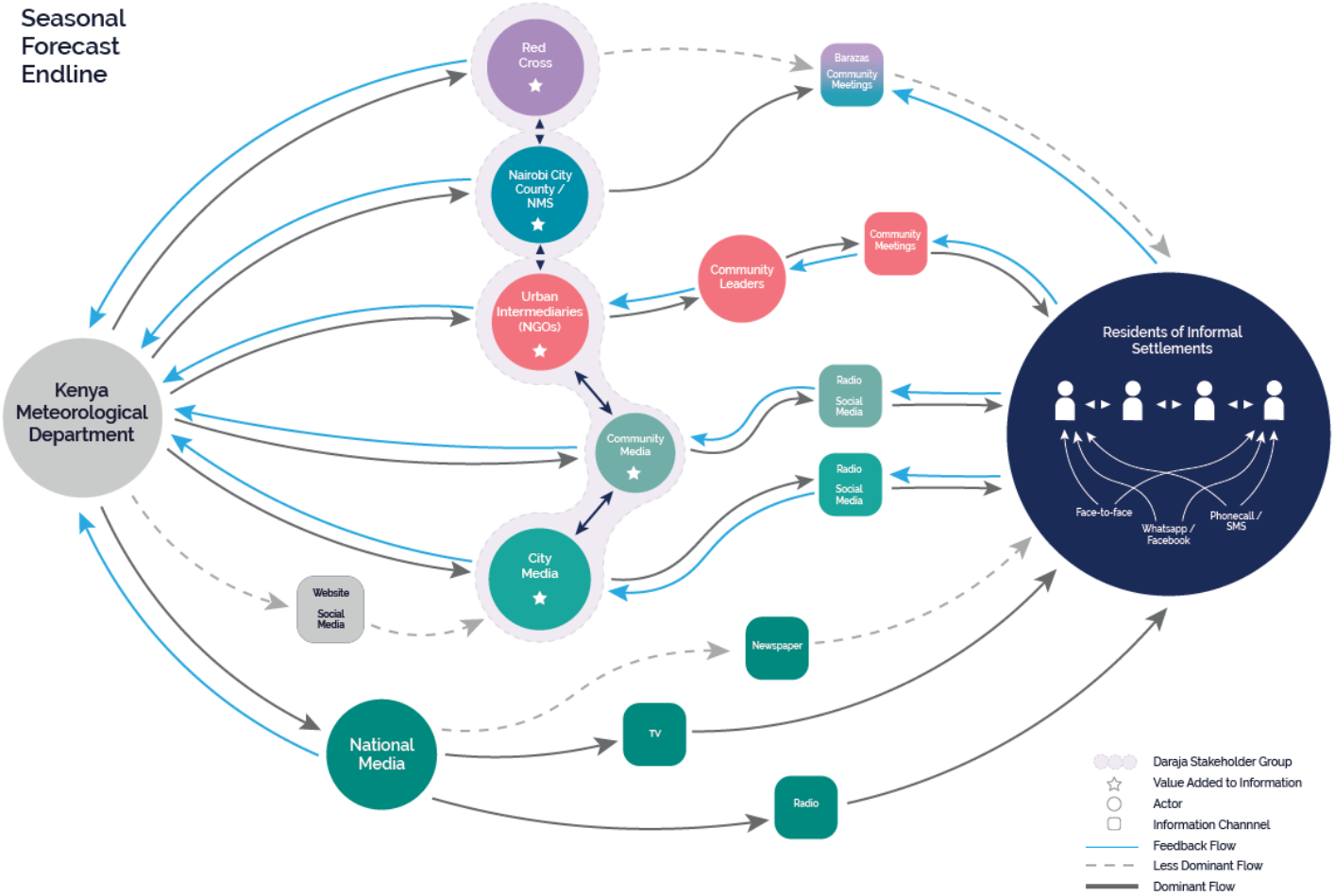


Nairobi: Severe Weather Warnings Baseline

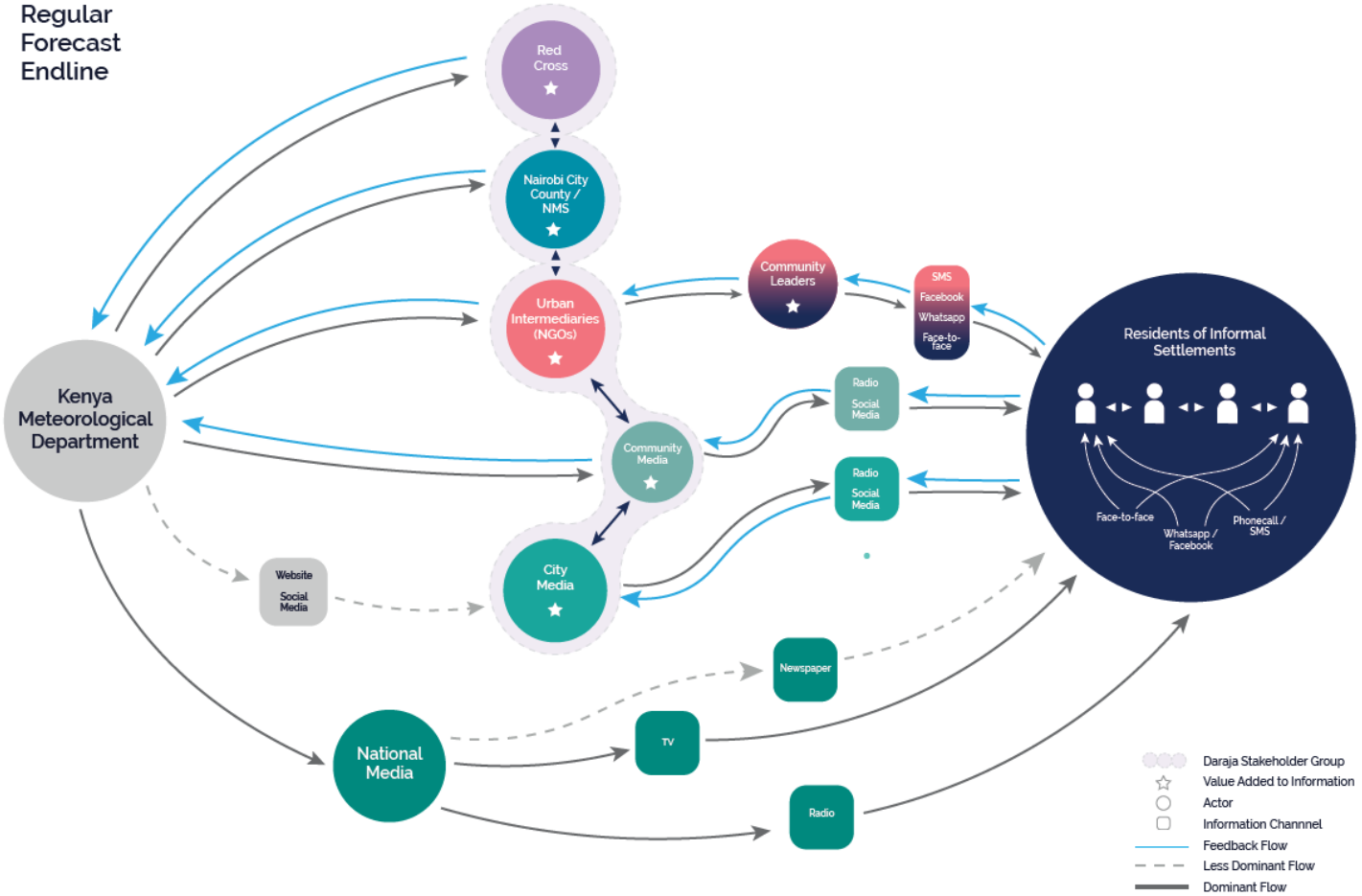


ⓘ Endline:

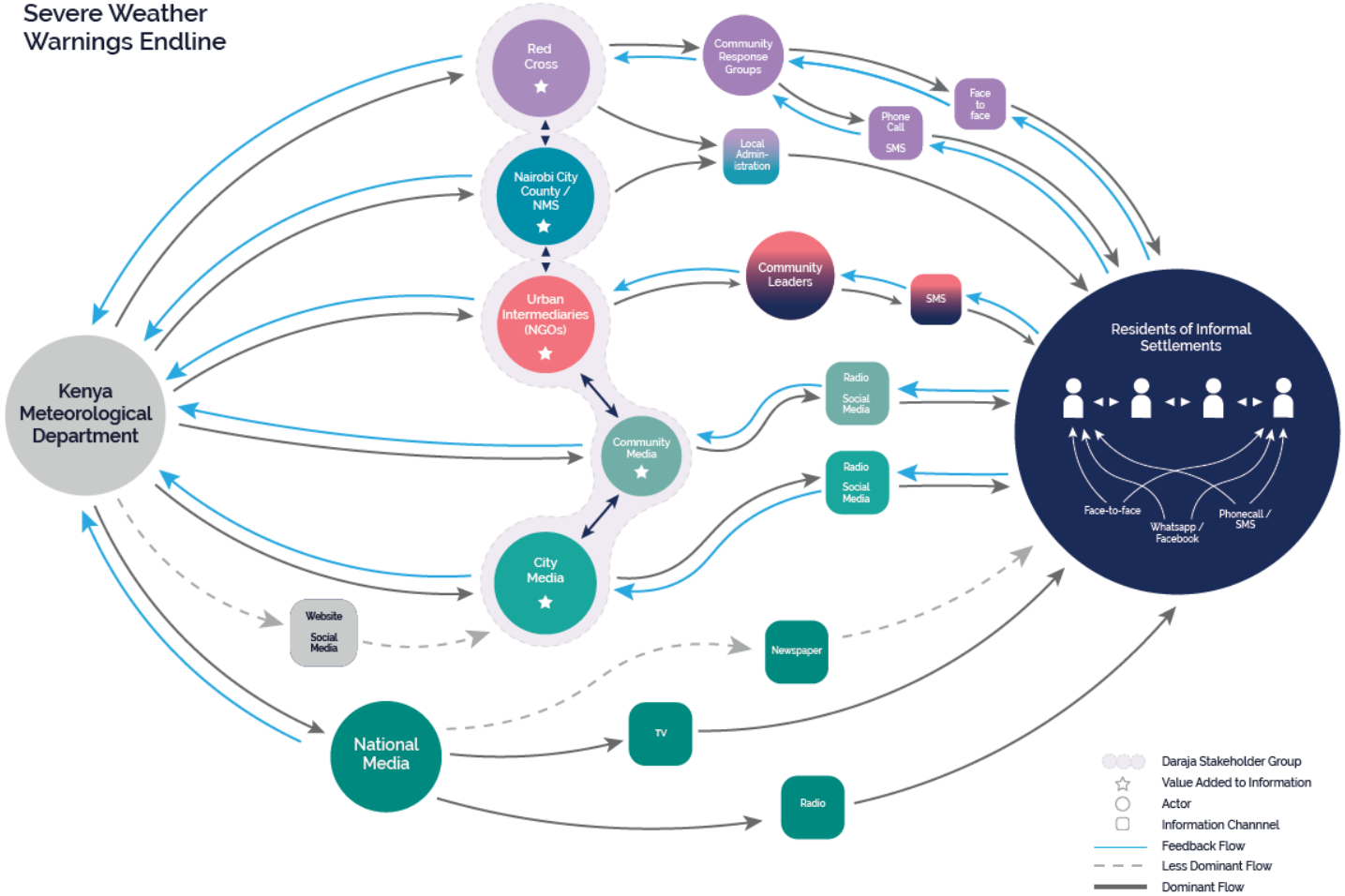
Nairobi: Seasonal Forecast Endline



Nairobi: Regular Forecast Endline



Nairobi: Severe Weather Warnings Endline



Dar Es Salaam

Information Ecosystem Maps

ⓘ Aim:

1. **Identify channels** that people use to gain information
2. Establish **multi-way communication** between TMA and users
3. **Diagnose blockages** to the flow of WCI
4. Develop practical measures to **remedy blockages**

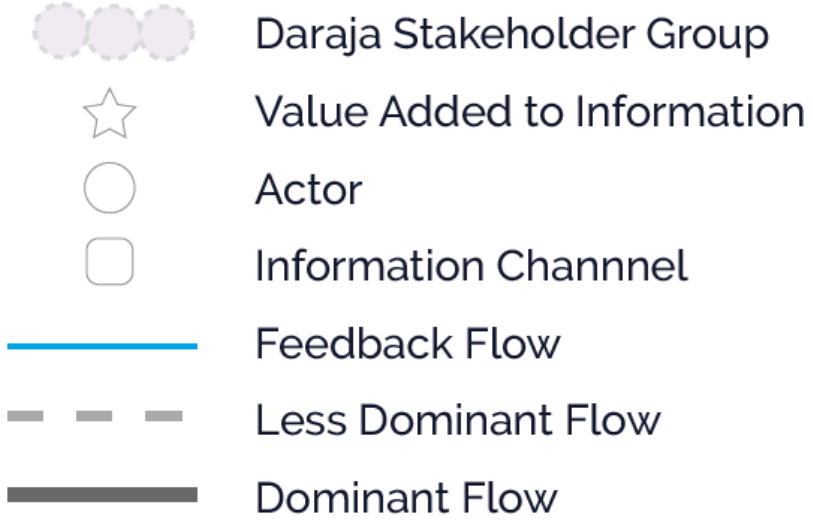
Concept:

Diagrams show:

- Actors
- Channels used
- Frequency and popularity of info flow

Additional for Endline:

- Coordination of actors
- Interpretation and localisation of info flow



Validation:

Please consider the following questions as you review the diagrams:

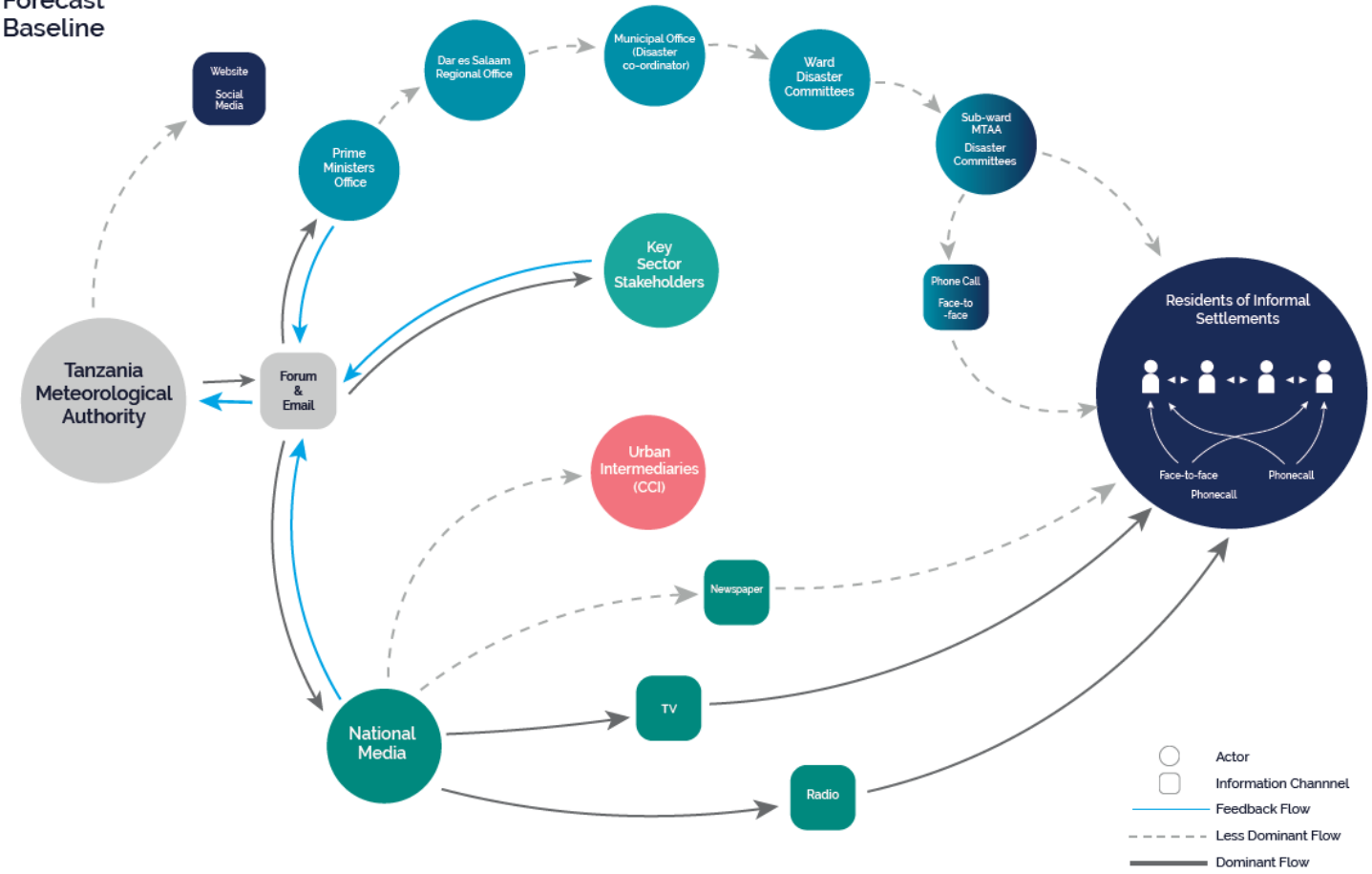
Thinking about the different types of forecast *(seasonal, regular & severe)* information services:

1. Do these diagrams represent the ways you/ your organisation receive or access the forecast information and share it with others?

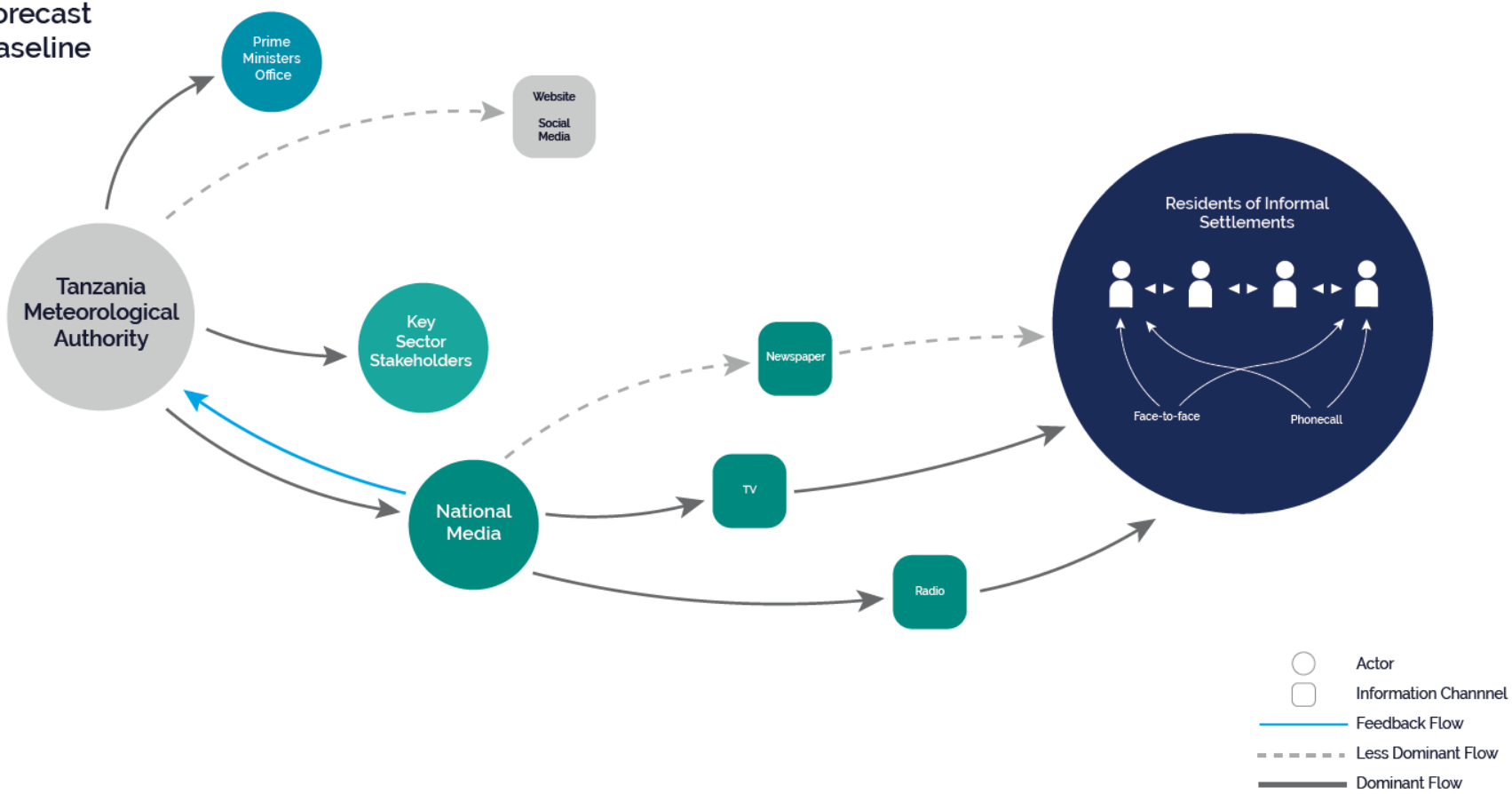
1. Do these diagrams represent the changes to information flows from the DARAJA pilot services?

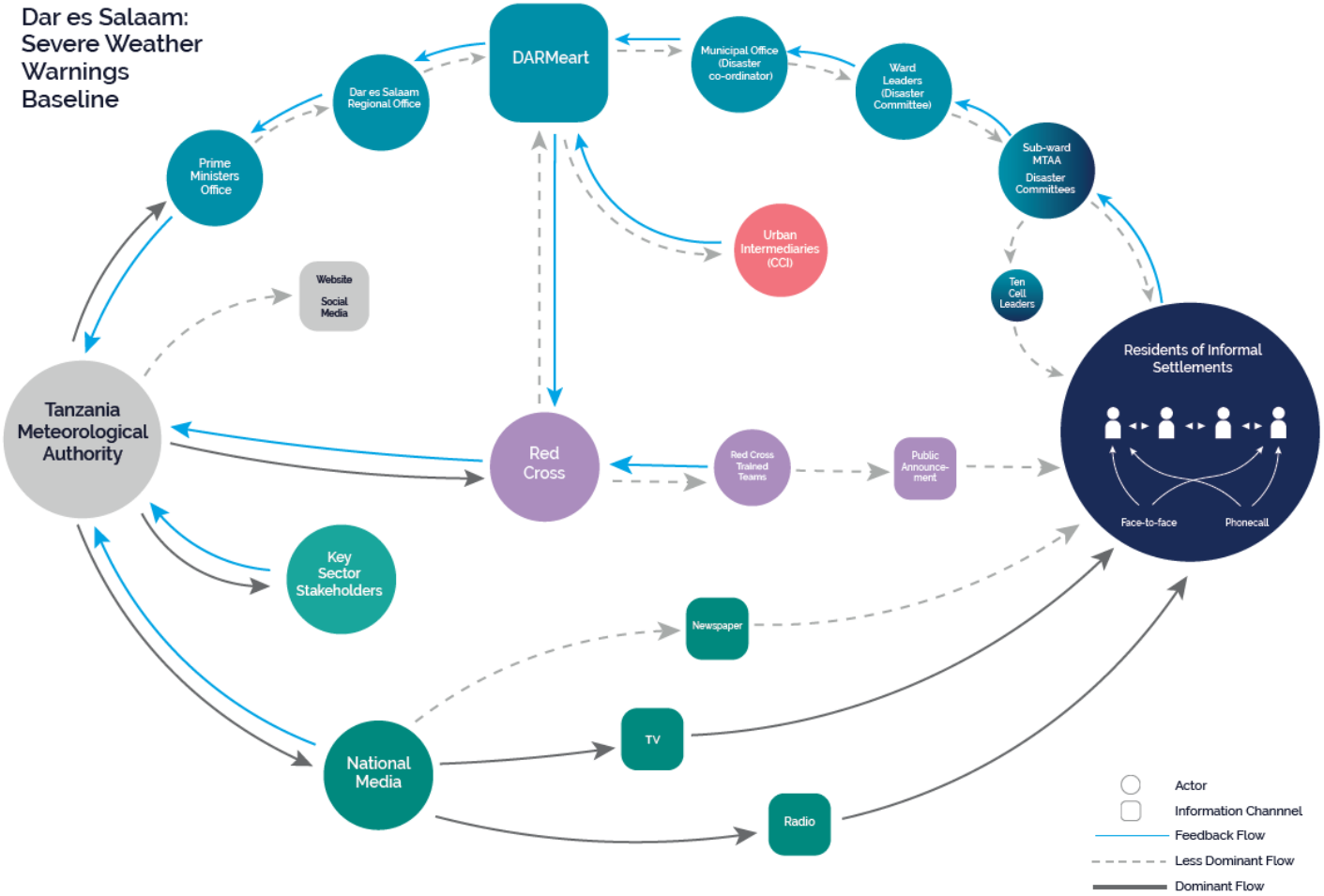
Baseline:

Dar es Salaam: Seasonal Forecast Baseline



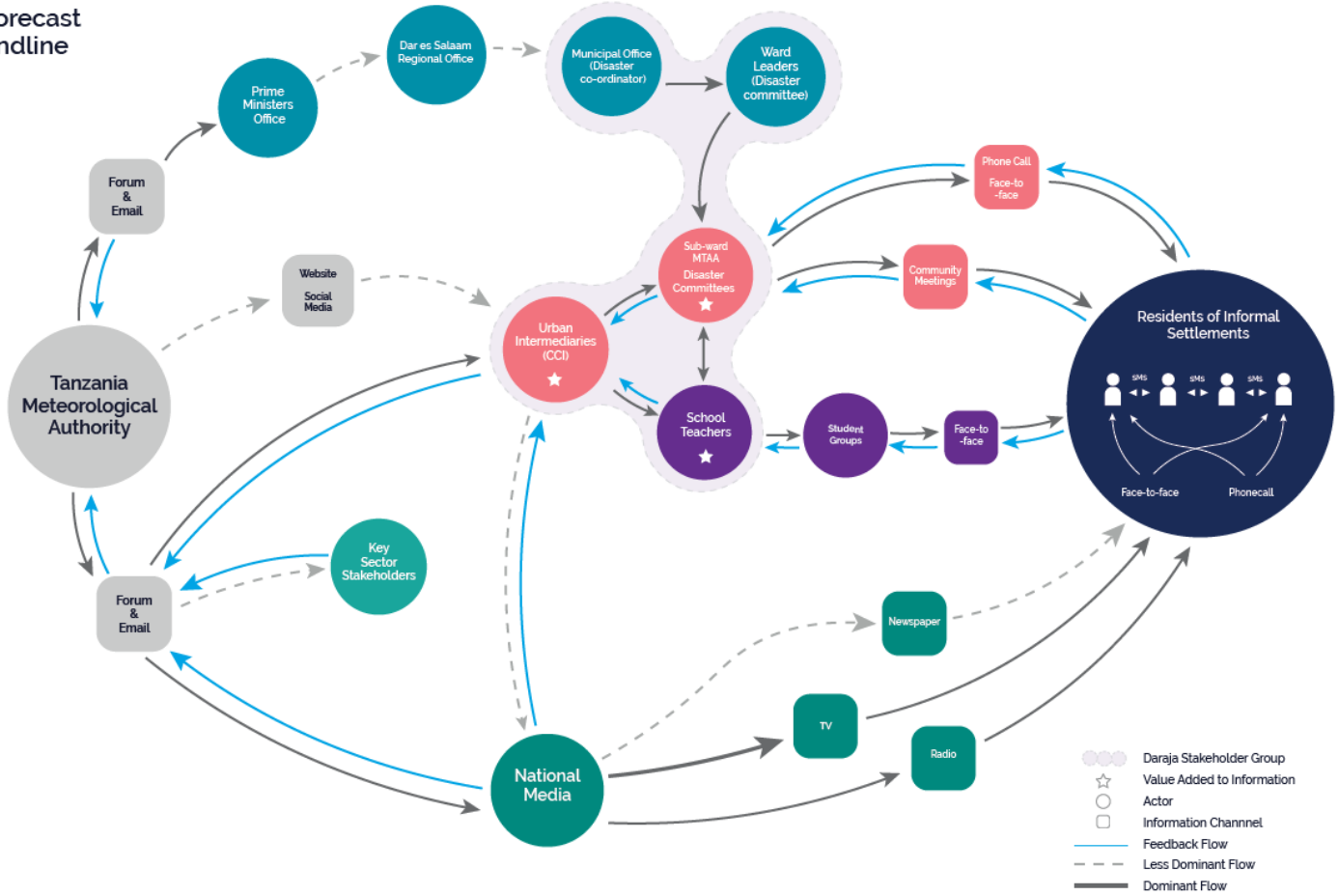
Dar es Salaam: Regular Forecast Baseline



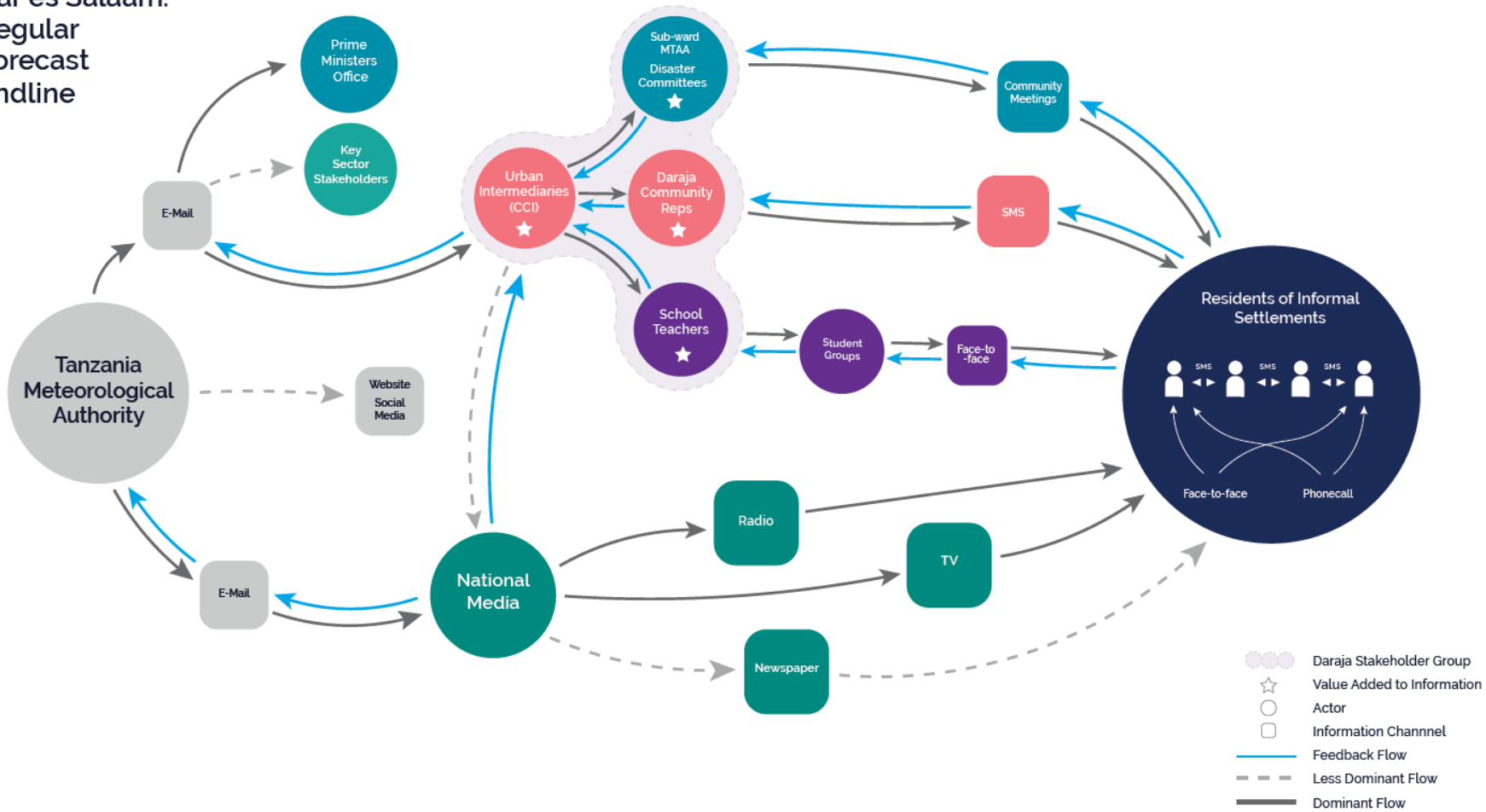

Dar es Salaam: Severe Weather Warnings Baseline
DARMeart
Municipal Office (Disaster co-ordinator)
Ward Leaders (Disaster Committee)
Sub-ward MTAA Disaster Committees
Ten Cell Leaders
Dar es Salaam Regional Office
Prime Ministers Office
Urban Intermediaries (CCI)
Website
Social Media
Tanzania Meteorological Authority
Red Cross
Red Cross Trained Teams
Public Announce-ment
Residents of Informal Settlements
Face-to-face
Phonecall
Key Sector Stakeholders
Newspaper
National Media
TV
Radio
Actor
Information Channnel
Feedback Flow
Less Dominant Flow
Dominant Flow

Endline:

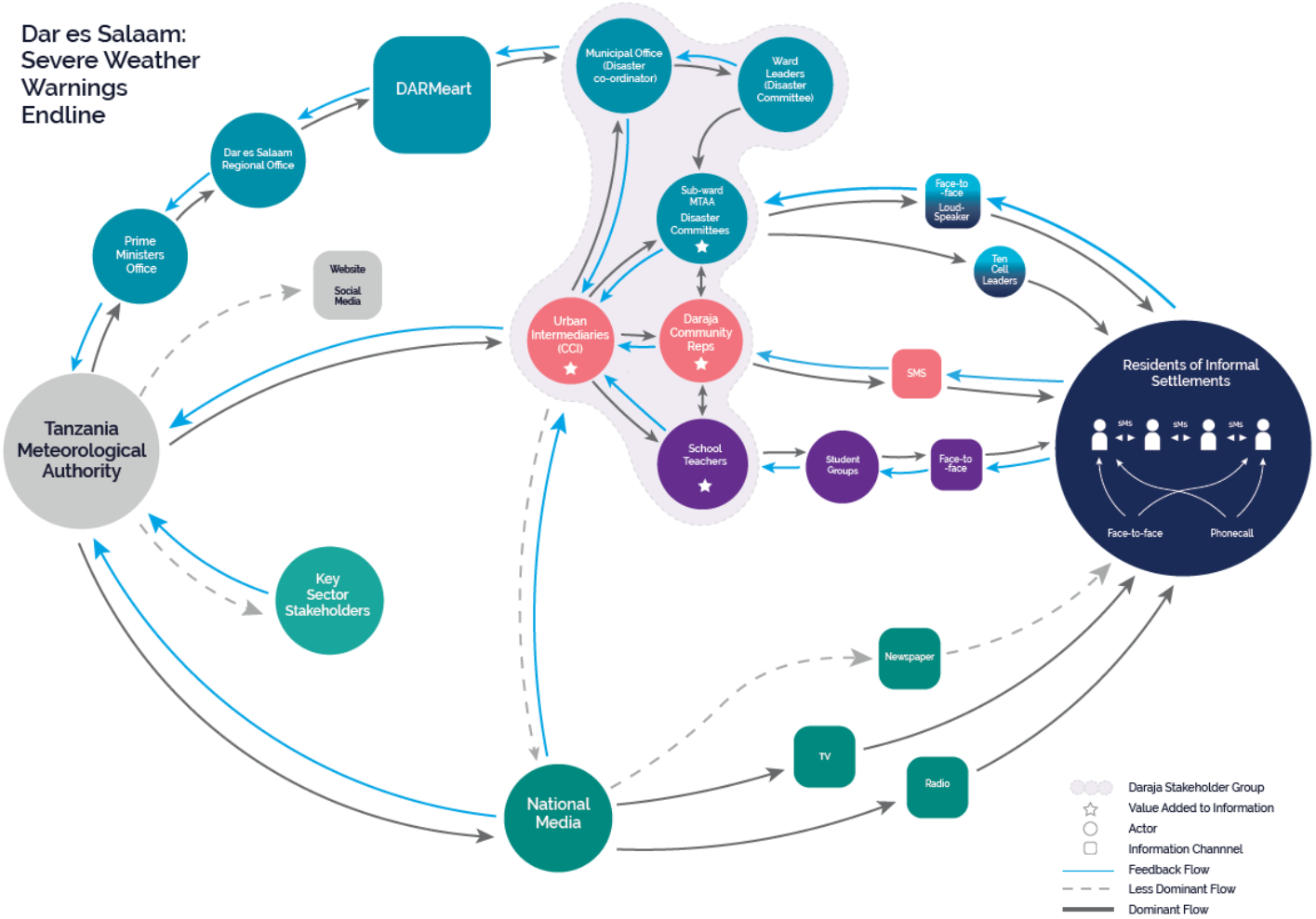
Dar es Salaam: Seasonal Forecast Endline



Dar es Salaam: Regular Forecast Endline



Dar es Salaam: Severe Weather Warnings Endline



DARAJA

Partnership + **Research and Data** + **Co-design**

Partnerships

Kounkuey Design Initiative **(KDI)**, Nairobi

Centre for Community Initiatives **(CCI),** Dar es Salaam

Resurgence Urban Resilience Impact Ltd

- **Build bridges** between weather forecasters and communities in informal settlements
- **Build resilience** of communities toward high impact weather events
- **Build relationships** with the key actors in the system

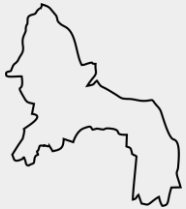
Not for external distribution

DARAJA endline data analysis

Learning and outcomes workshop

September 2020

Dar Es Salaam



Nairobi

Key Indicators for Data analysis:

% Access

In what ways do people regularly access/ receive weather climate information (E.g. weather forecasts or warnings)?

% Preference

Why do respondents prefer receiving/accessing weather and climate information from specific channels

% Understanding

How well the respondents are able to understand the weather information (e.g. forecast)? *(technical details, advice, probability, impacts, implications)*

% Use

How do people use the information they get through different channels, which are the most common preparatory actions taken

Nairobi

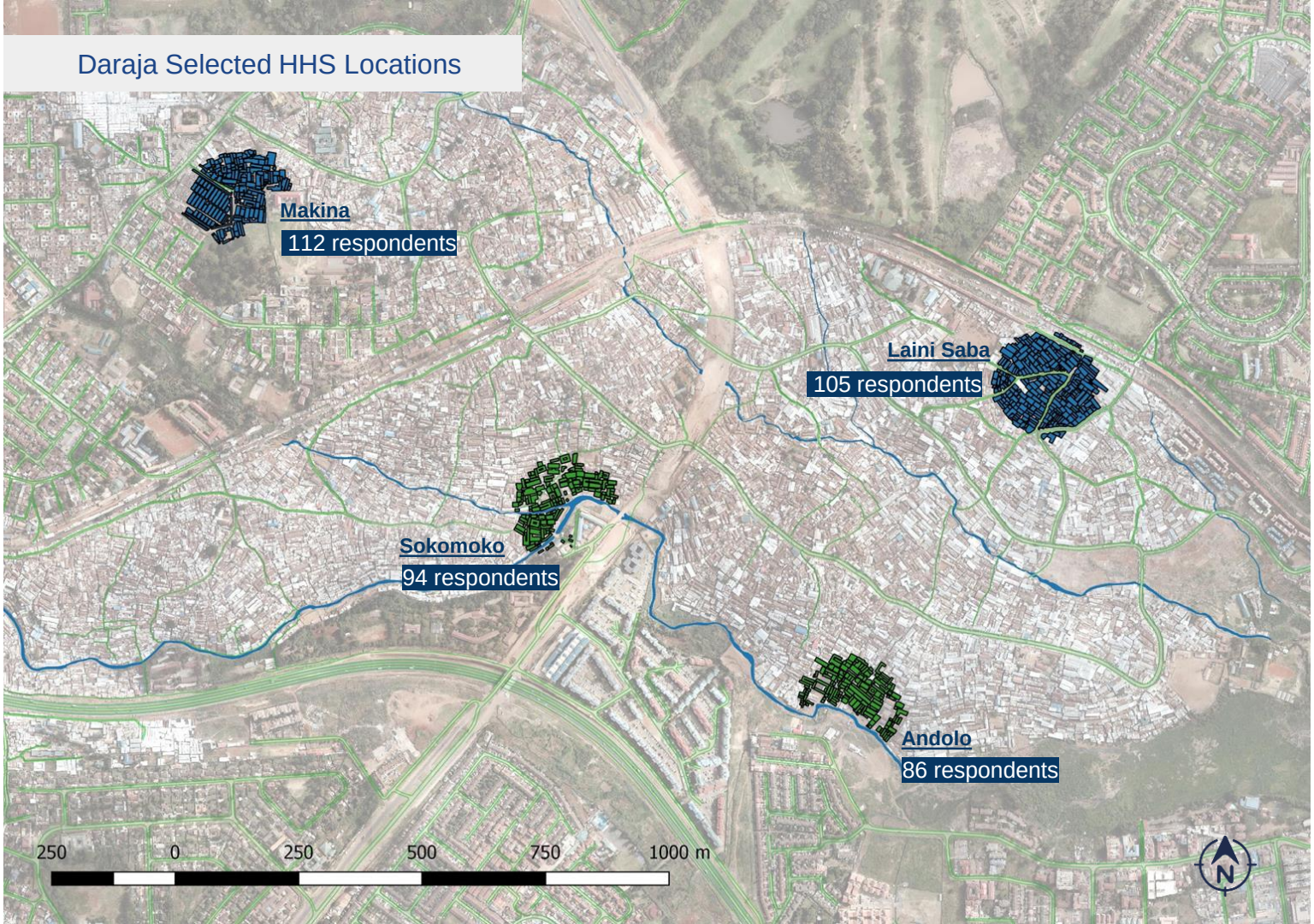
398 HHS respondents

4 areas /1 Informal Settlement

10 Focus Group Discussions

12 Key Informant Interviews

Daraja Selected HHS Locations



Nairobi

Pilots:

- Community communication system
- City-wide radio station
- Community radio stations
- Social media and awareness campaign

Key Inputs:

➔ Daily and weekly forecast
➔ Terminology reference guide
➔ Impact description guide
➔ Re-designed weather icons

Access

93% respondents access or receive weather and climate information.

Compared with 56% of respondents in the baseline.

% Access from the baseline to the Endline

% of total respondents **[370]**

Access

SMS and Radio

are the most popular ways to access/ receive WCI.

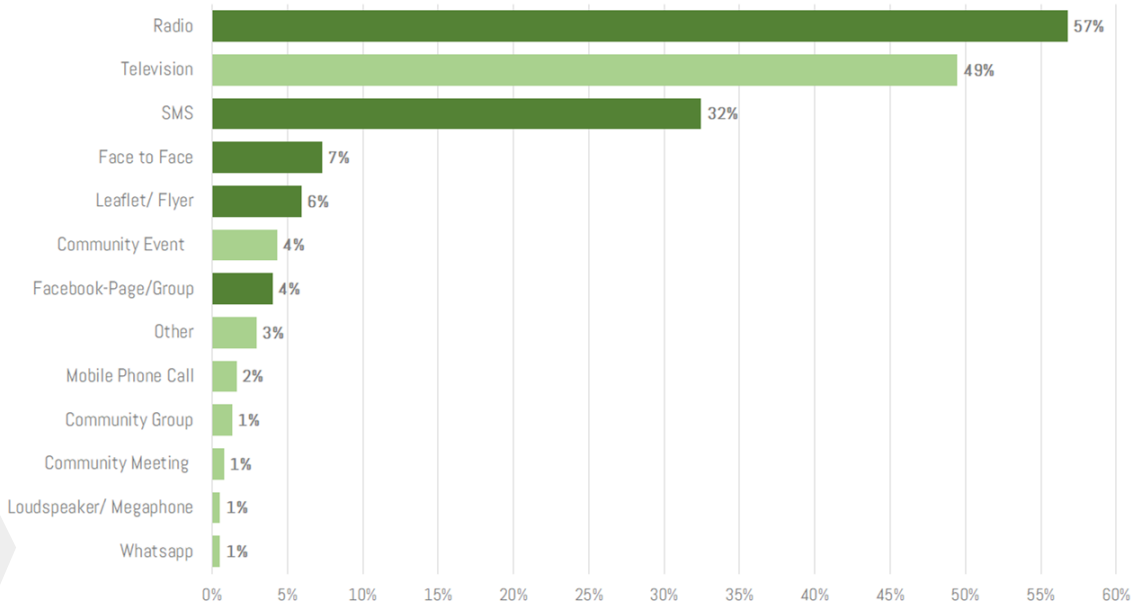
57%

Radio

32%

SMS

% of respondents who access WCI by channel



% of total respondents who access WCI **[370 respondents]**

Nairobi / HHS Survey Data Results-2020

Access:

Pilot channels

54% respondents access or receive WCI through the DARAJA informed services.

31% receive Weather Mtaani SMS

31% listen to WCI on one of the Weather Mtaani participating radio stations

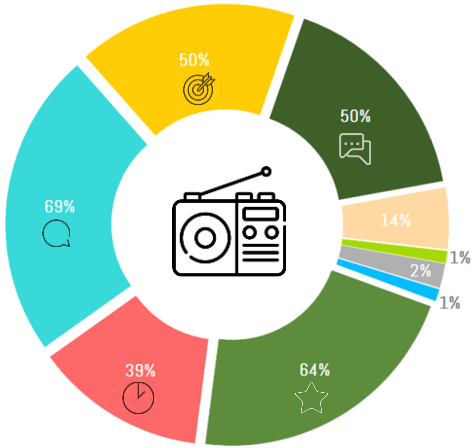
19% by leaflet or community events/ meetings

7% by Habari Kibra Facebook page

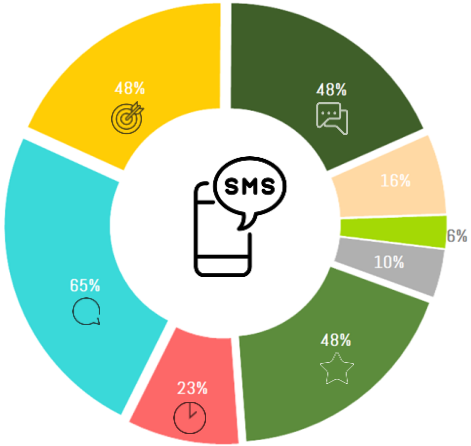
% of total respondents who access WCI **[370 respondents]**

Access: Preference

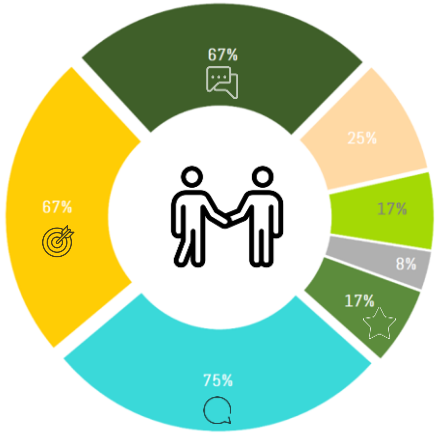
Radio
36 respondents



SMS
31 respondents



Face to Face / Fb / Leaflet
12 respondents



- The information was easy to understand
- Language used
- I trusted the source
- Advice was provided
- Relevant to my area
- Other
- Timing of the forecast (when I recieved it)
- The information was accurate
- It was relevant to my needs
- Advice provided relevant to me
- Visuals included
- Dont Know

Based on respondents who access WCI through a single channel

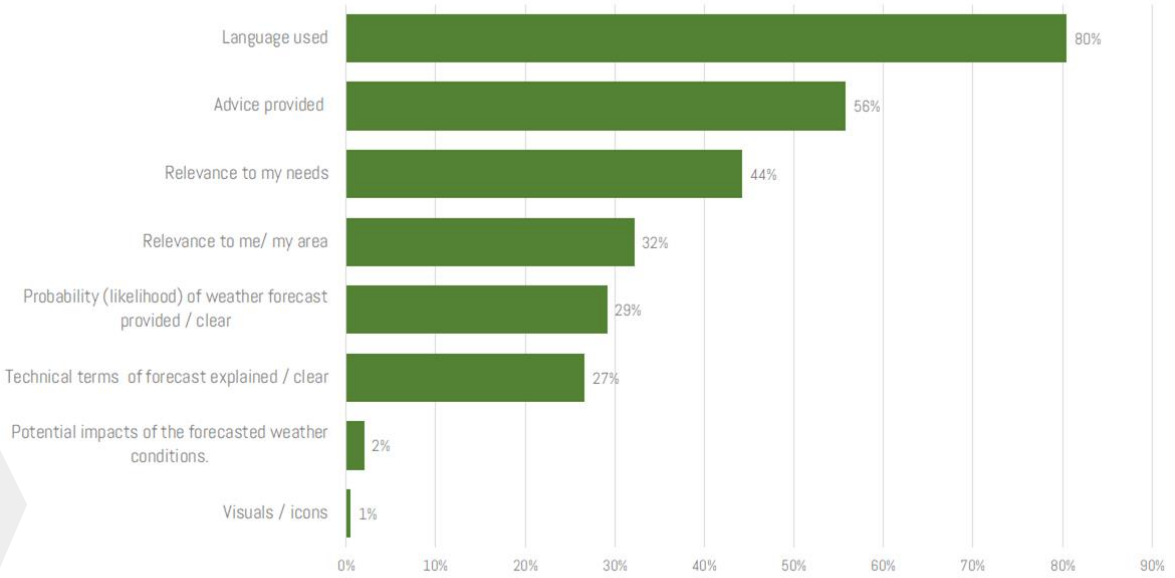
Understanding:
Daraja pilot channels

93% of respondents understood information shared through DARAJA pilots very well.

Most popular features that made understanding easier:

1. Language Used **(80%)**
2. Advice Provided **(56%)**
3. Relevance to their needs **(44%)**

% of features which made understanding easier
Daraja Pilot Channels



% of respondents who state they understand the WCI very well **[199 respondents]**

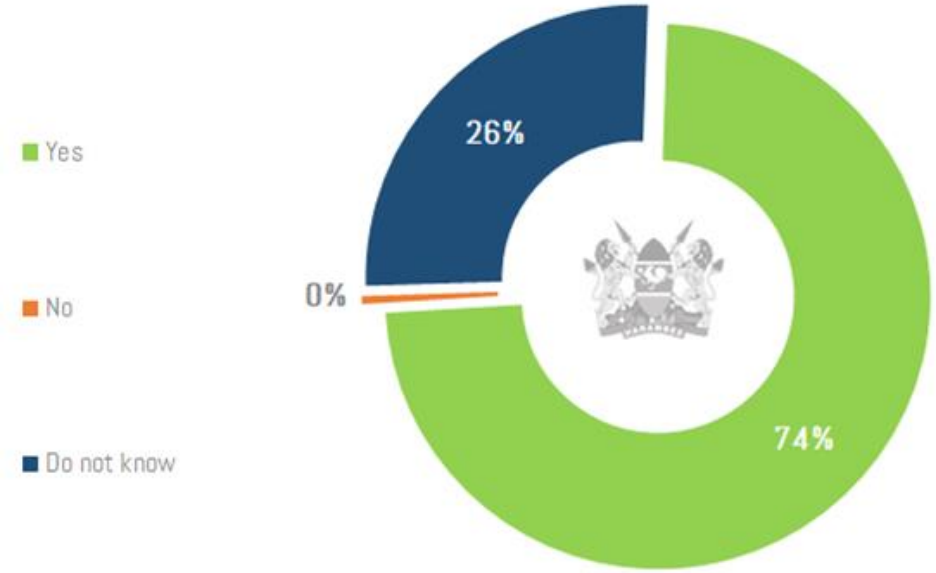
Nairobi / HHS Survey Data Results-2020

Understanding:
Daraja pilot channels

77% know the source of the information.

74% are aware the source of the information is KMD.

% of acknowledgment of KMD as source of WCI



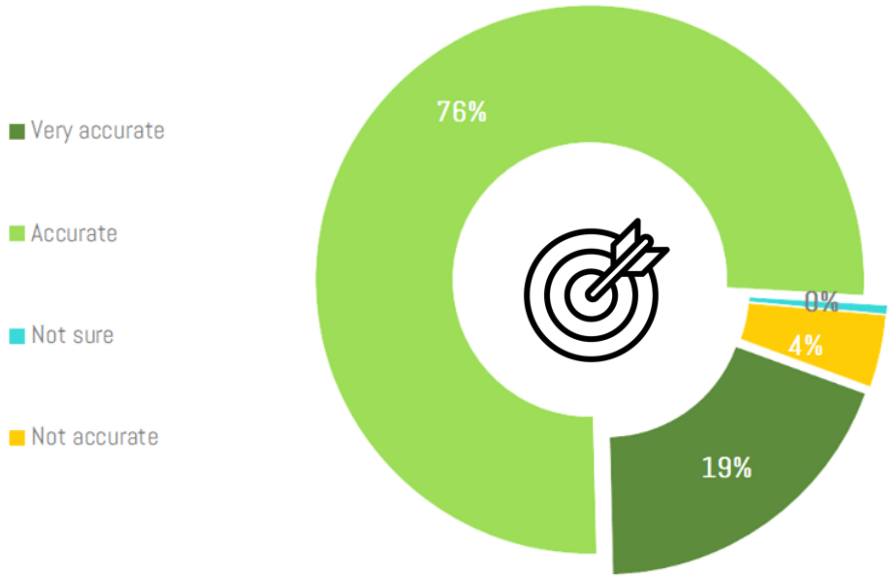
% of respondents who access WCI through Daraja services **[215 respondents]**

Nairobi / HHS Survey Data Results-2020

Accuracy

76% of respondents stated they found the information through the DARAJA services to be accurate, and an additional **19%** found it to be very accurate

% Accuracy of the WCI received



% .of respondents who access WCI through pilots **[215 respondents]**

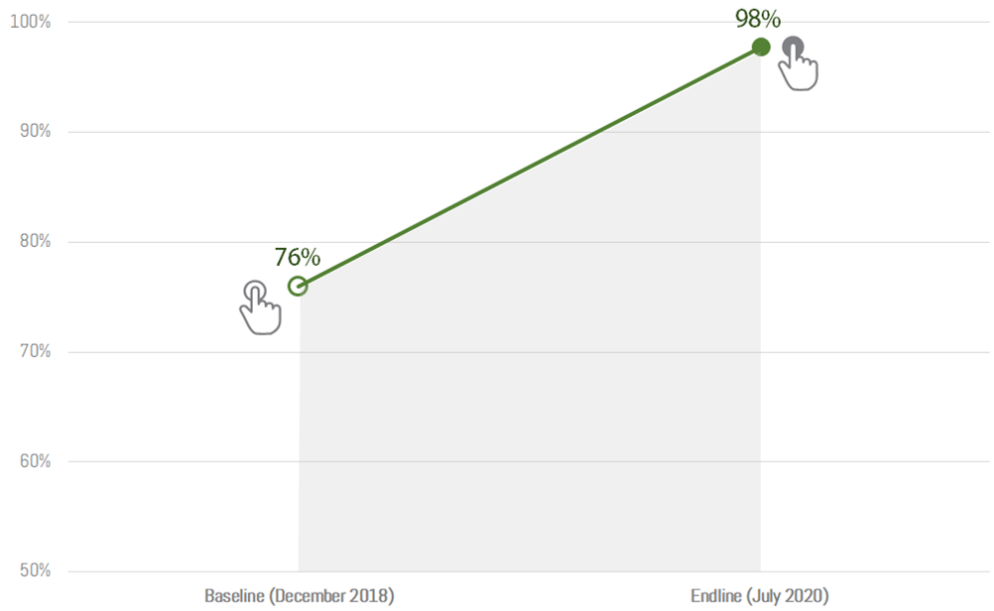
Use:

98% use the information through the DARAJA pilots to take preparatory action.

Compared with 76% in the baseline.

85% share the information with their household, friends and family.

% of respondents who use WCI



% of respondents who access WCI through pilots **[215 respondents]**

Nairobi / HHS Survey Data Results-2020

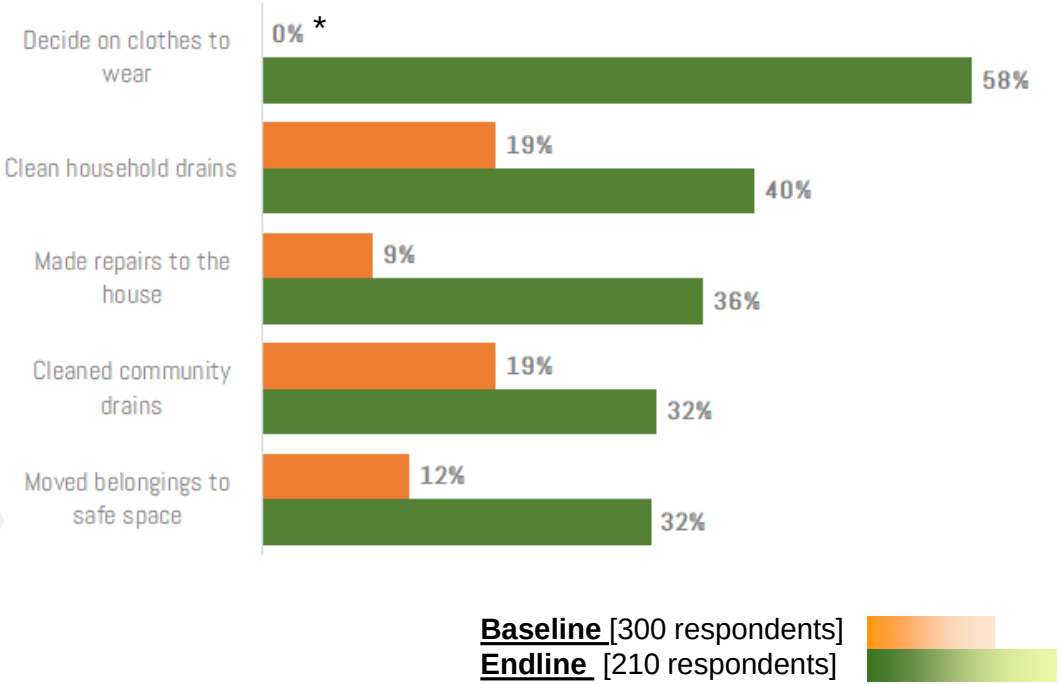
Use:
Most common actions taken

Common actions taken

1. Decide on clothes to wear*
2. Clean household drains
3. Made repairs to house
4. Clean Community drains
5. Moved belongings to a safe place

*option not asked in baseline

% most common ways of use, from the Baseline to the Endline

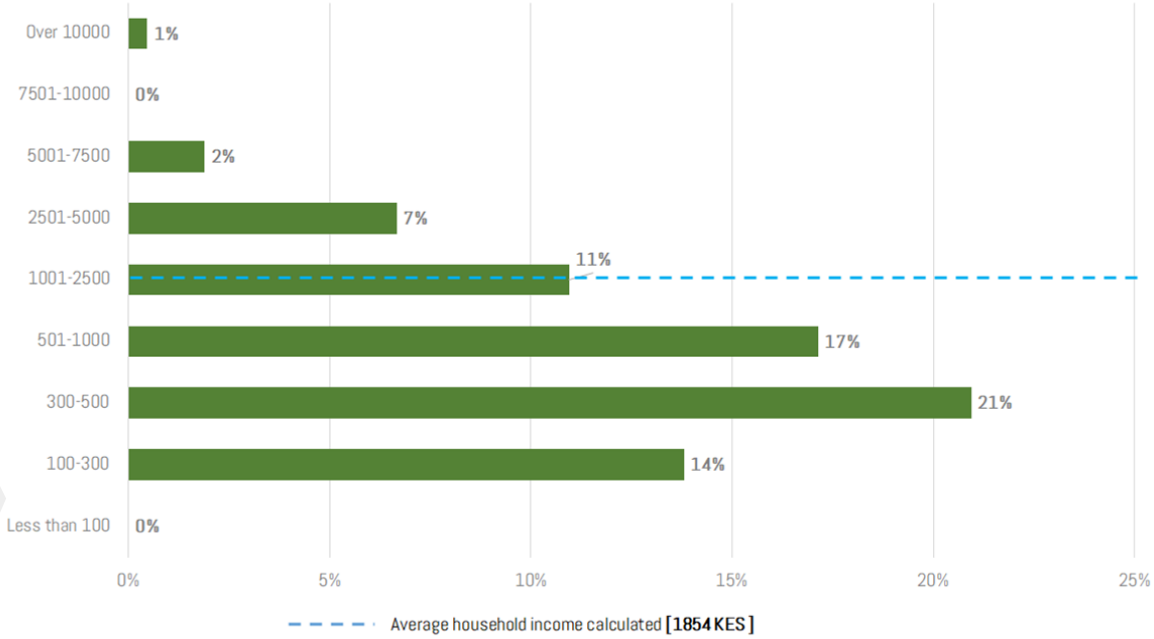


Use:
Avoided Damage & Loss

76% felt the actions they took saved their household income.

76% felt they were able to protect their assets and valuables, most commonly their clothing, radio, TV, bed, food, food and furniture.

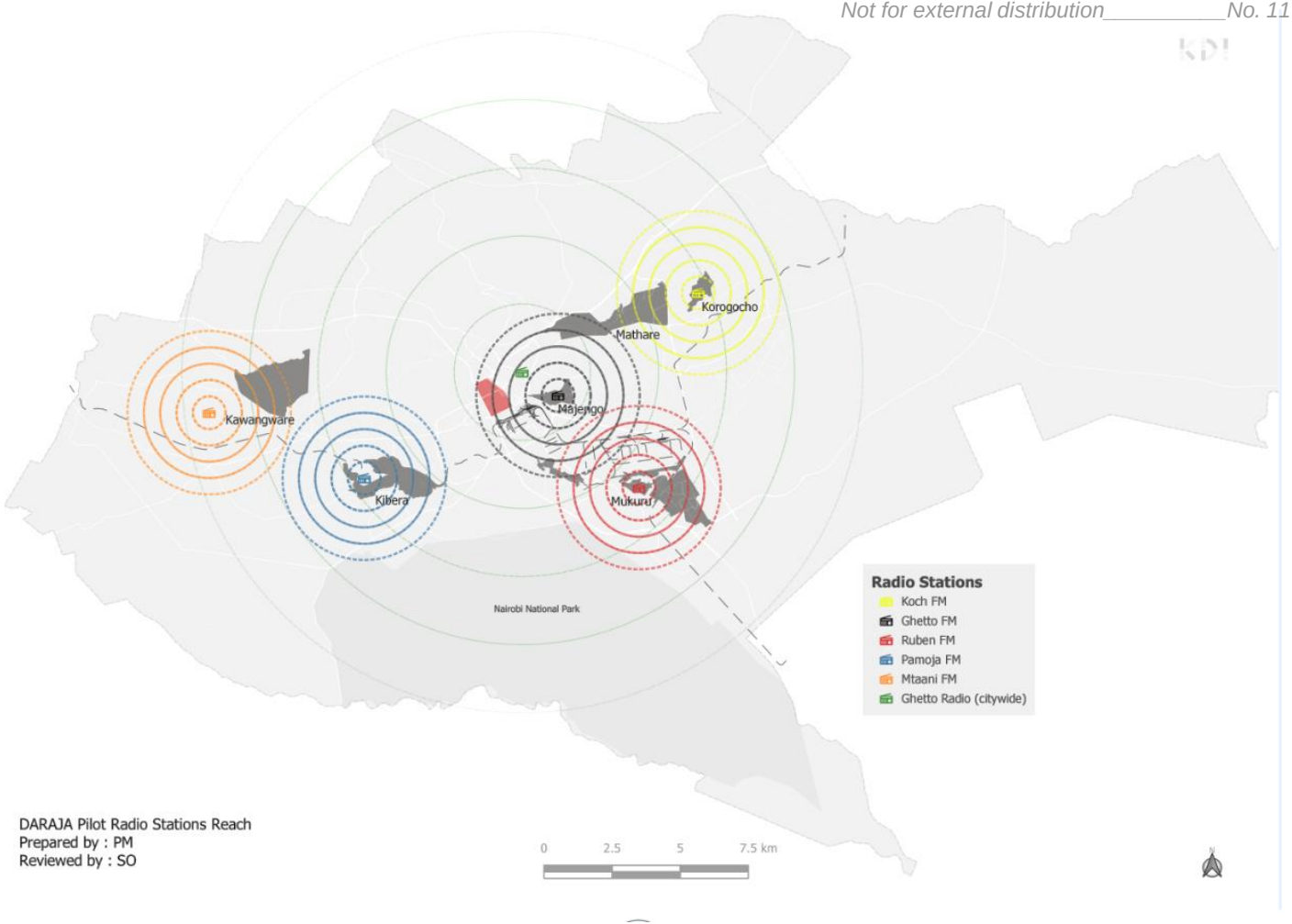
% of approximate saved income per week, by receiving WCI
*Kenyan Shilling **(KES)***



% of respondents who use WCI accessed through Daraja Pilots **[210 respondents]**

Nairobi / HHS Survey Data Results-2020

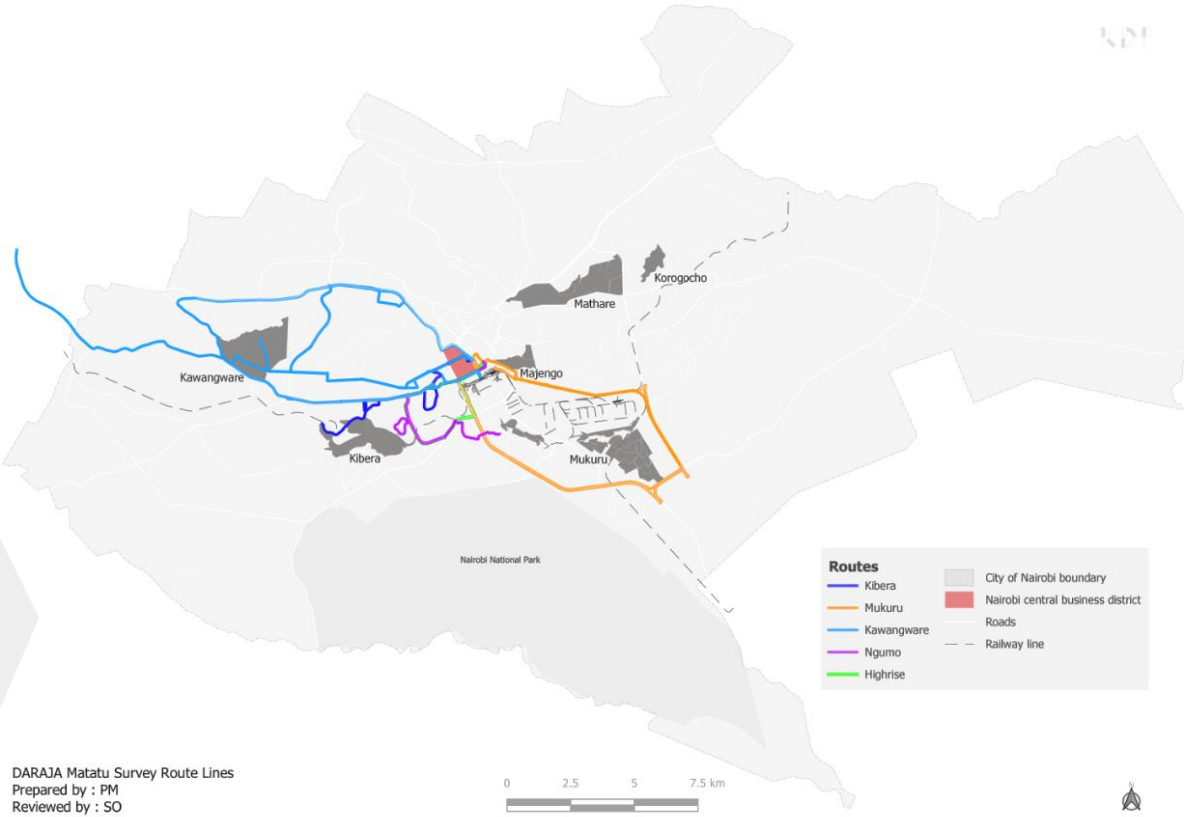
Ghetto Radio	800,000 - 1 million
Pamoja FM	460,000
Ruben FM	300,000
Ghetto FM	200,000
Mtaani FM	300,000
Koch FM	500,000



City-wide Radio pilot: Matatu survey findings

66 Matatu drivers surveyed

On routes:
Kawangware *to CBD*
Mukuru *to CBD*
Kibera
Ngumo
Highrise

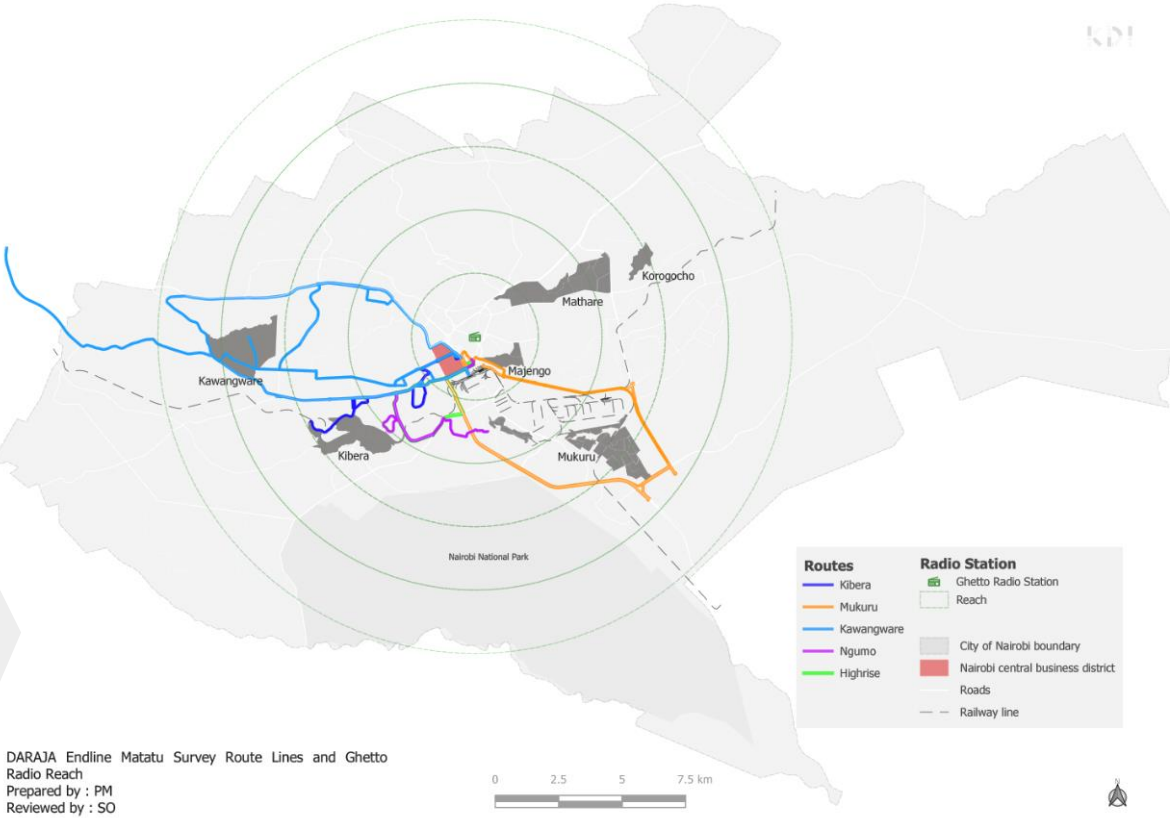


City-wide Radio pilot: Matatu survey findings

65% listen to Ghetto Radio everyday

94% have taken note of the weather forecast on Ghetto Radio

% of total respondents **[66]**



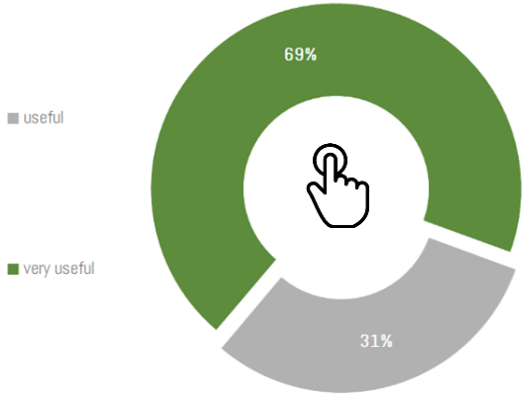
Nairobi / Matatu drivers Survey Data Results-2020

City-wide Radio pilot: Matatu survey findings

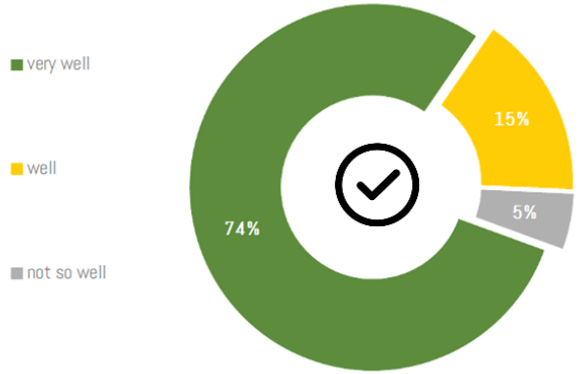
69% find the weather announcement to be very useful. The remaining drivers found it to be useful.

74% understand the weather announcement very well.
An additional 15% understand it well.

% of respondents who find WCI useful



% understanding the message given



% of total respondents **[66]**

Dar Es Salaam

106 HHS respondents

1 settlement

5 Focus Group Discussions

6 Key Informant Interviews

Dar Es Salaam

Pilots:

- Community communications system
- Schools Programme
- Clouds FM radio
- Local municipality partnerships and community training

Key Inputs:

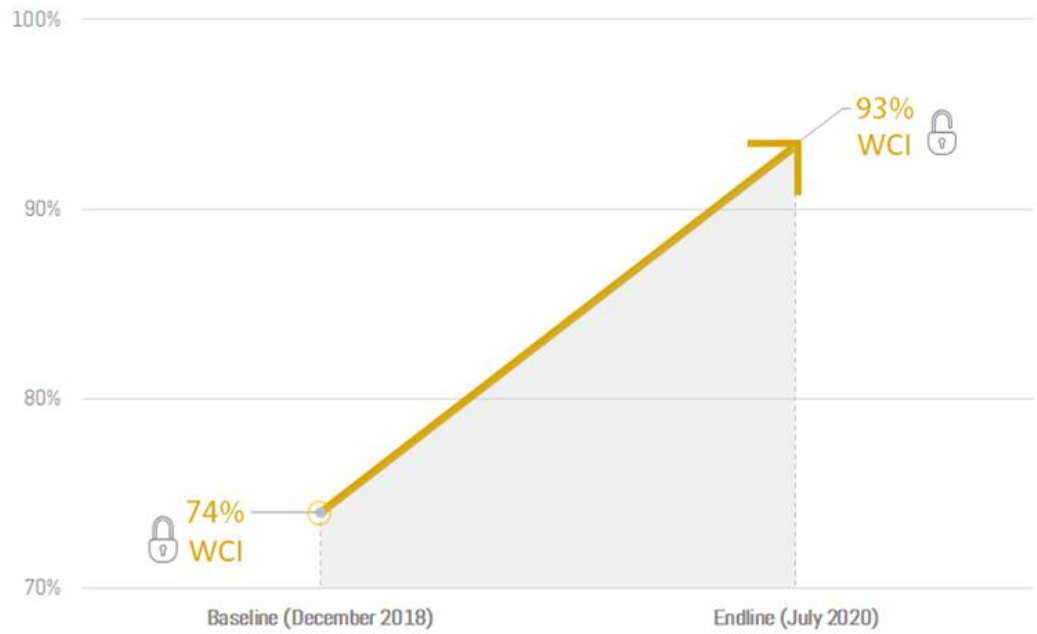
➔ Rolling 5-days forecast
➔ Terminology reference guide
➔ Impact description guide

Access

93% respondents access or receive weather and climate information.

Compared with 74% of respondents in the baseline.

% Access from the baseline to the Endline



% of total respondents **[105]**

Access

79% respondents use the DARAJA pilots with **SMS** being the most popular channel.

SMS

69%

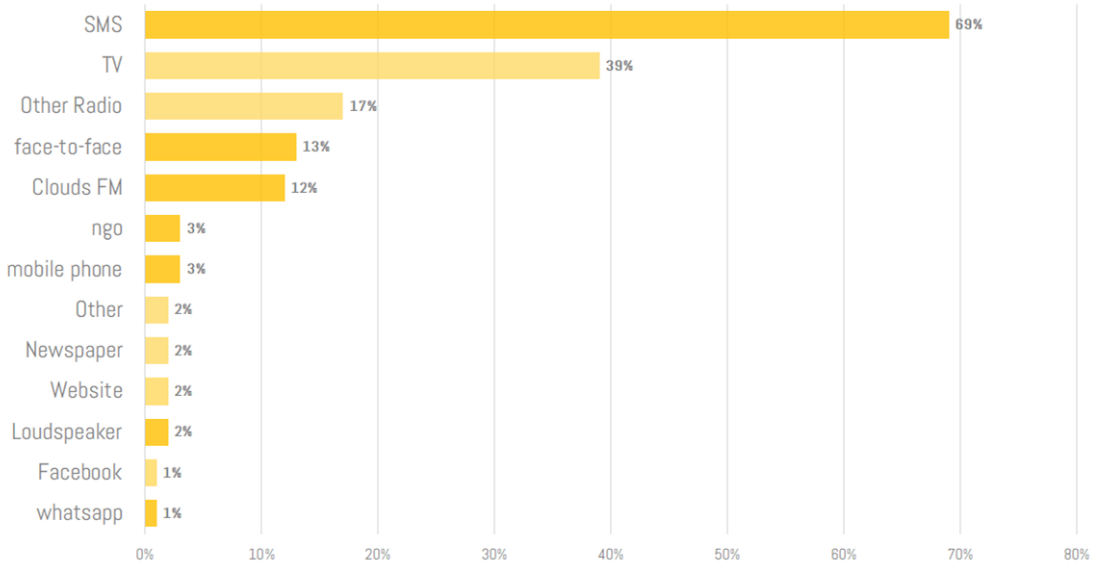
Face to Face

13%

Radio

12%

% of respondents who access WCI by channel



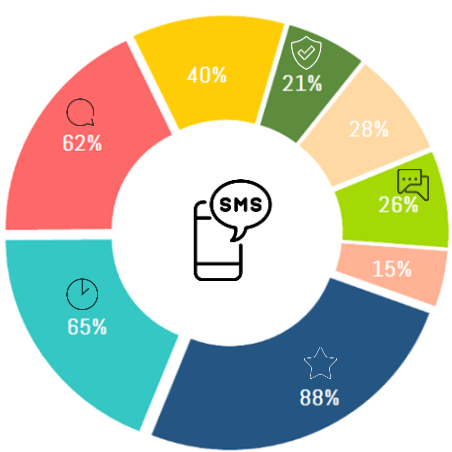
* % of respondents who access WCI **[99 respondents]**

Dar Es Salaam / HHS Survey Data Results-2020

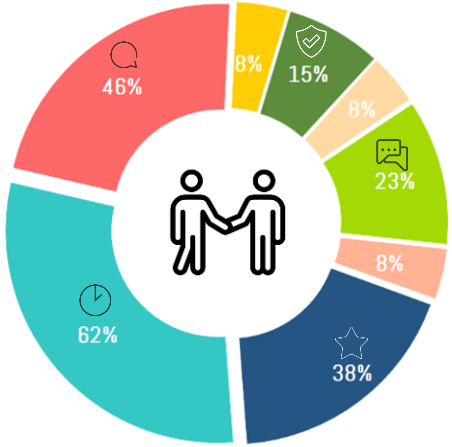
Access: preference

Reason for preferring pilot channels to access WCI

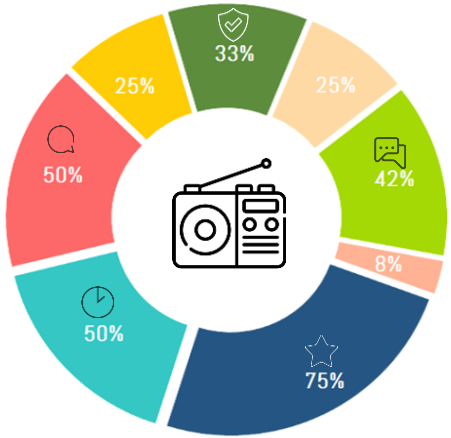
SMS Pilot
69% of respondents



Face to Face
13% of respondents



Clouds Fm Radio
12% of respondents



- The information was easy to understand
- Language used
- I trusted the source
- Advice was provided
- Visuals included
- Timing of the forecast (when I received it)
- The information was accurate
- It was relevant to my needs
- Advice provided relevant to me, Relevant to my area

% of respondents who access WCI **[99 respondents]**

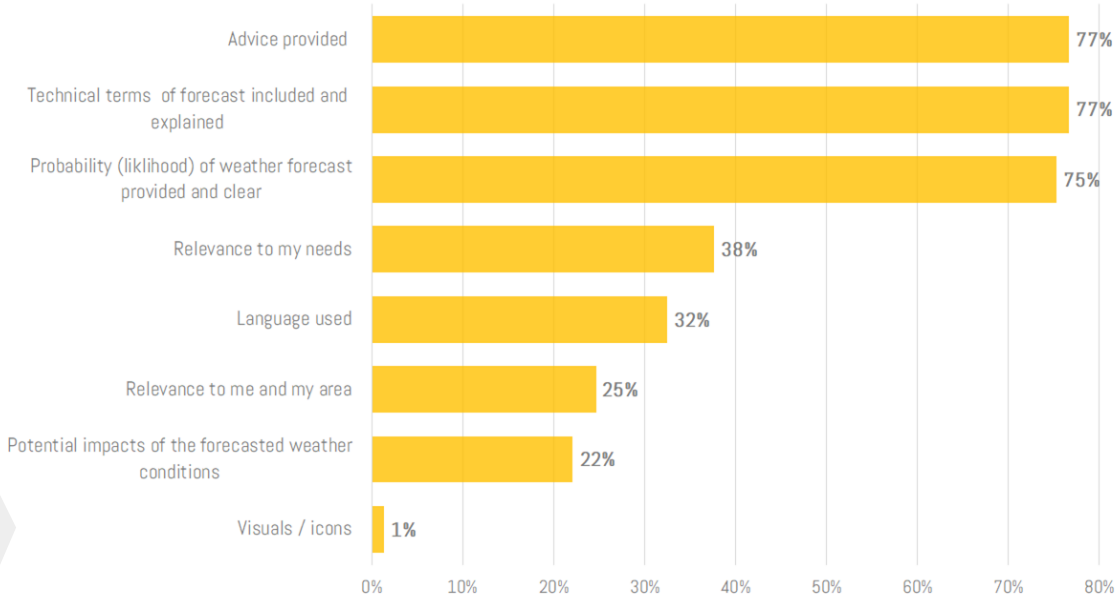
Understanding

Overall, 91% of respondents state they understand the information received through pilot channels very well.

Most popular features that made understanding easier:

1. Advice provided **(80%)**
2. Technical terms of forecast explained **(80%)**
3. Probability of weather forecast provided and clear **(78%)**

% of features which made understanding easier



% of respondents who state they understand the information very well through Daraja pilots **[77 respondents]**

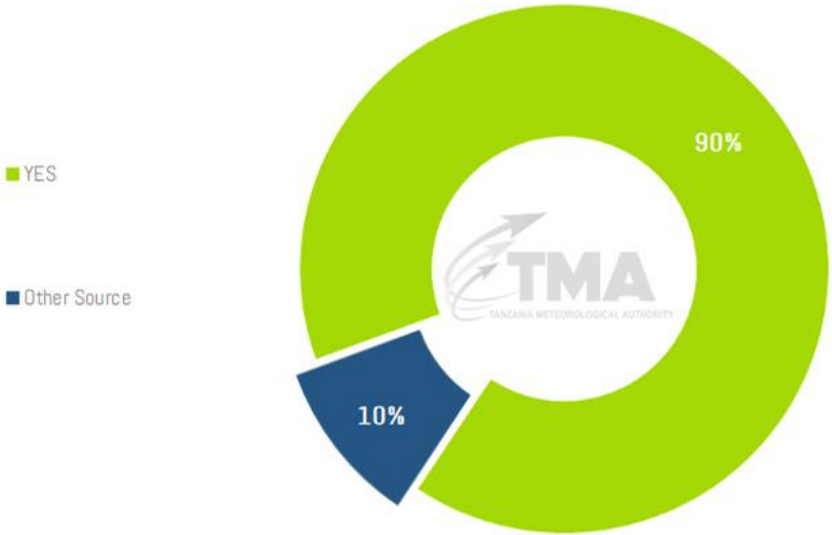
Dar Es Salaam / HHS Survey Data Results-2020

Understanding

90% stated the source of the WCI as TMA.

Compared with 72% of respondents in the baseline who were aware TMA is the mandated WCI provider.

% of respondents who indicate TMA as source of WCI

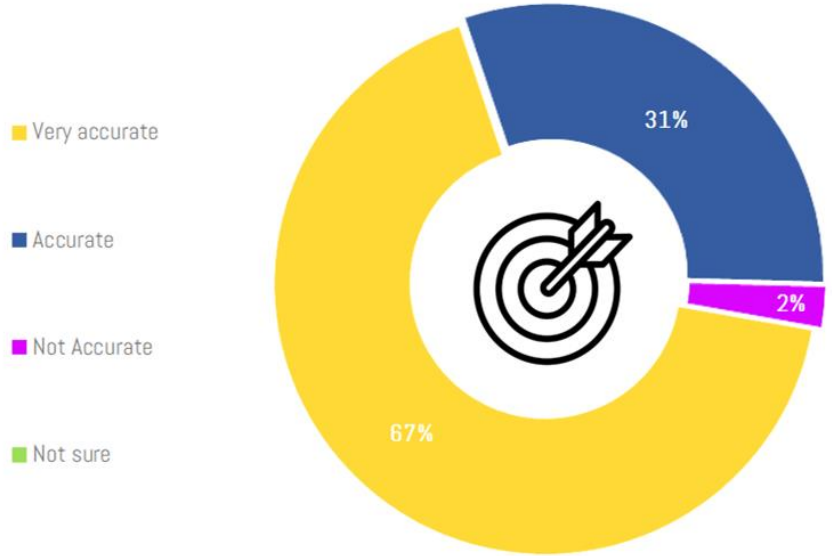


% of respondents who access WCI **[99]**

Accuracy

67% of respondents stated they found the information through the DARAJA services to be very accurate,
and an additional 31% found it to be accurate.

% Accuracy of the WCI received



% of respondents who access WCI through Dararaja Pilots **[85 respondents]**

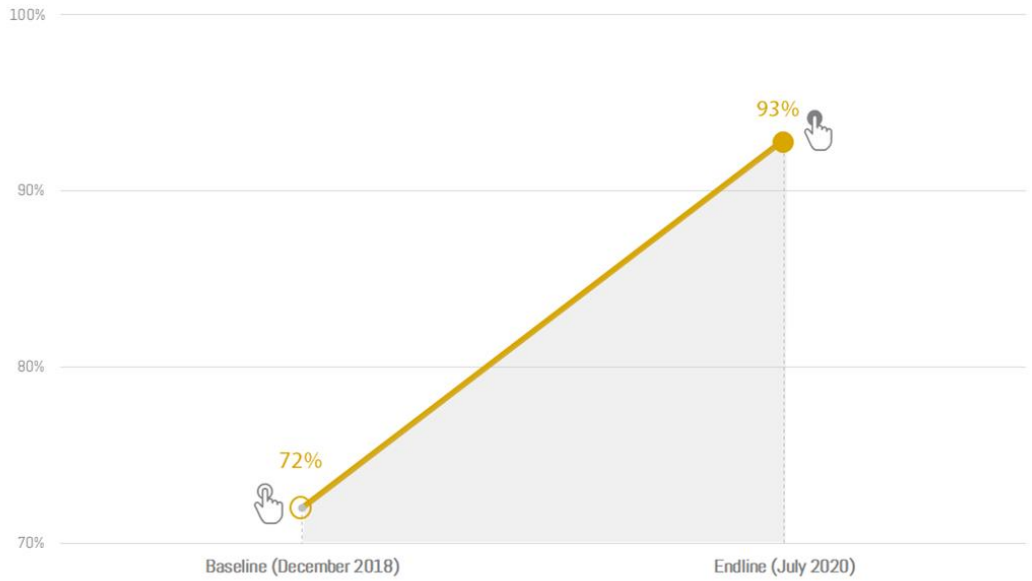
Use

93% use the information through the DARAJA pilot services to take preparatory action.

Compared to 72% of respondents in the baseline.

80% of those share the information at work, with their household, other family and with friends.

% of respondents who use WCI



% of respondents who access WCI through Daraja Pilots **[85 respondents]**

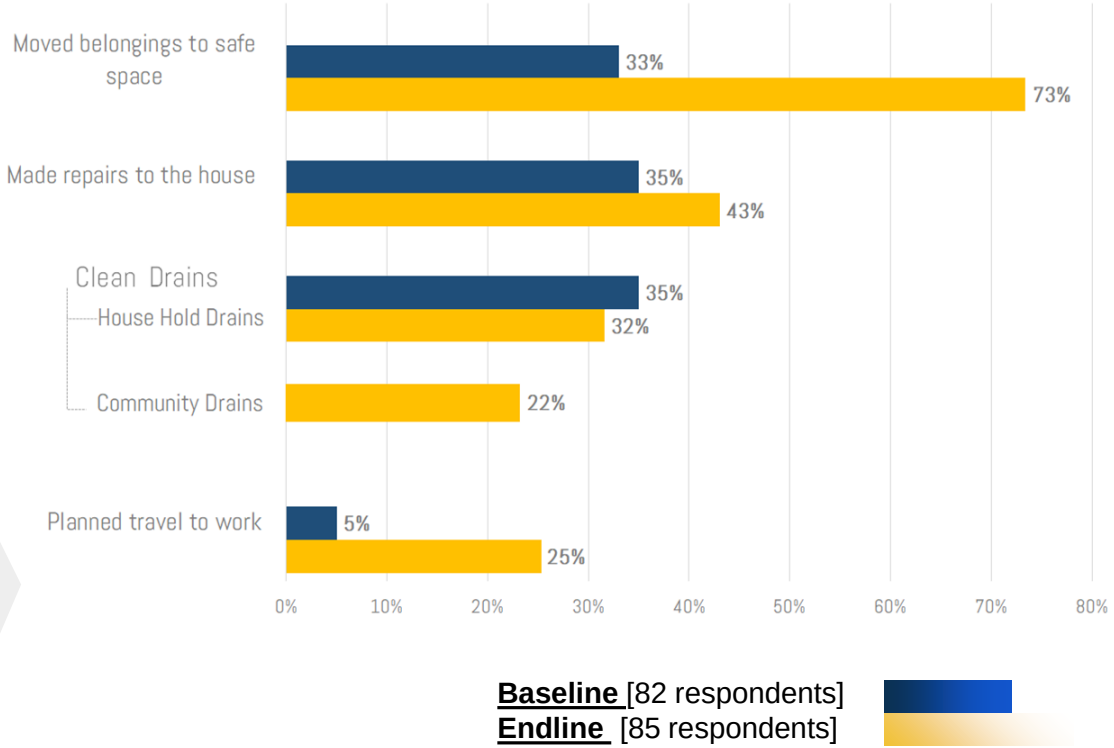
Dar Es Salaam / HHS Survey Data Results-2020

Use:

Common actions taken

1. Moved belongings to safe space.
2. Made repairs to the house.
3. Clean household drains.
4. Planned travel to work.
5. Clean community drains.

% common ways of use, from the Baseline to the Endline



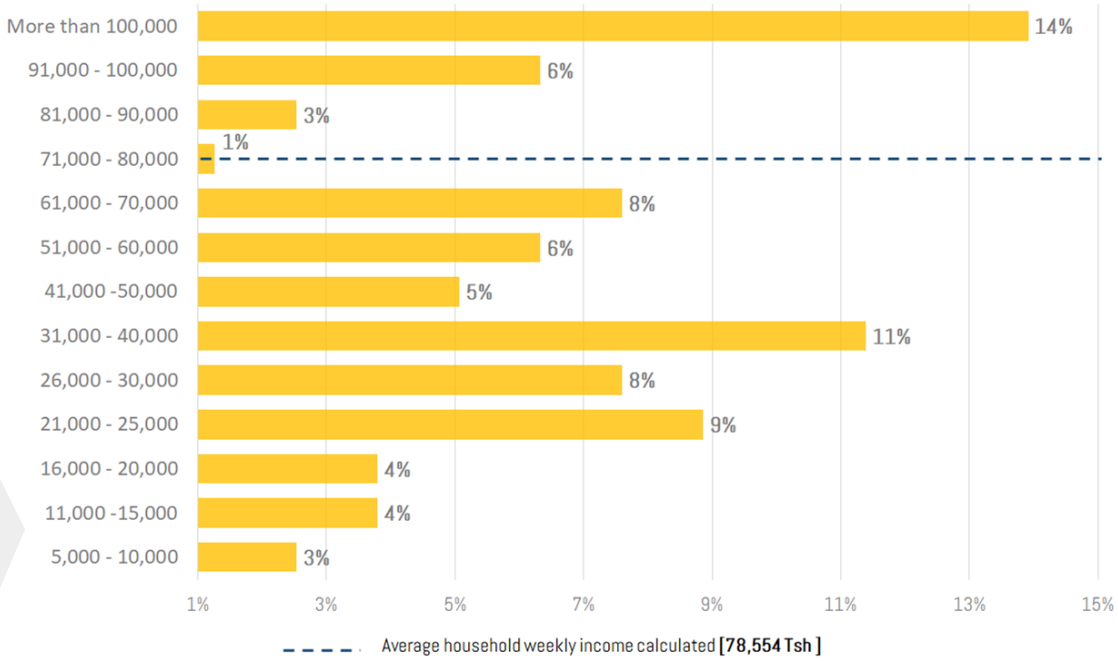
Baseline [82 respondents]
Endline [85 respondents]

Use:
Avoided Damage & Loss

81% felt the actions they took saved their household income.

81% felt they were able to protect their assets and valuables, most commonly their TV, small furniture, food and clothing.

% of approximate saved income per week, by receiving WCI
*Tanzanian Shilling **(Tsh)***



%.of respondents who used WCI through Daraja Pilots **[79 respondents]**

Dar Es Salaam / HHS Survey Data Results-2020

School pilot:

Teachers and **school children** as an intermediary in WCIS.

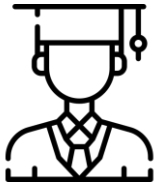
Teachers were trained on WCI and implemented design modules and training classes for the students.

Tools like **notice boards** and **school assemblies** during school hours were used to share information.

Schools Pilot
Total 8 Schools

Teachers trained
Total 19

With 1 Teacher Coordinating Programme



Students trained
Total 240

An additional **13,711** students across the 8 schools have received the information

Student-led awareness campaign

Information was shared within households, and with family and friends

School pilot:

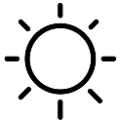
Feedback survey from **153 students** from **5 schools**

KII with teachers

153 students

76% More understanding of WCI

69% Take actions to protect themselves & community

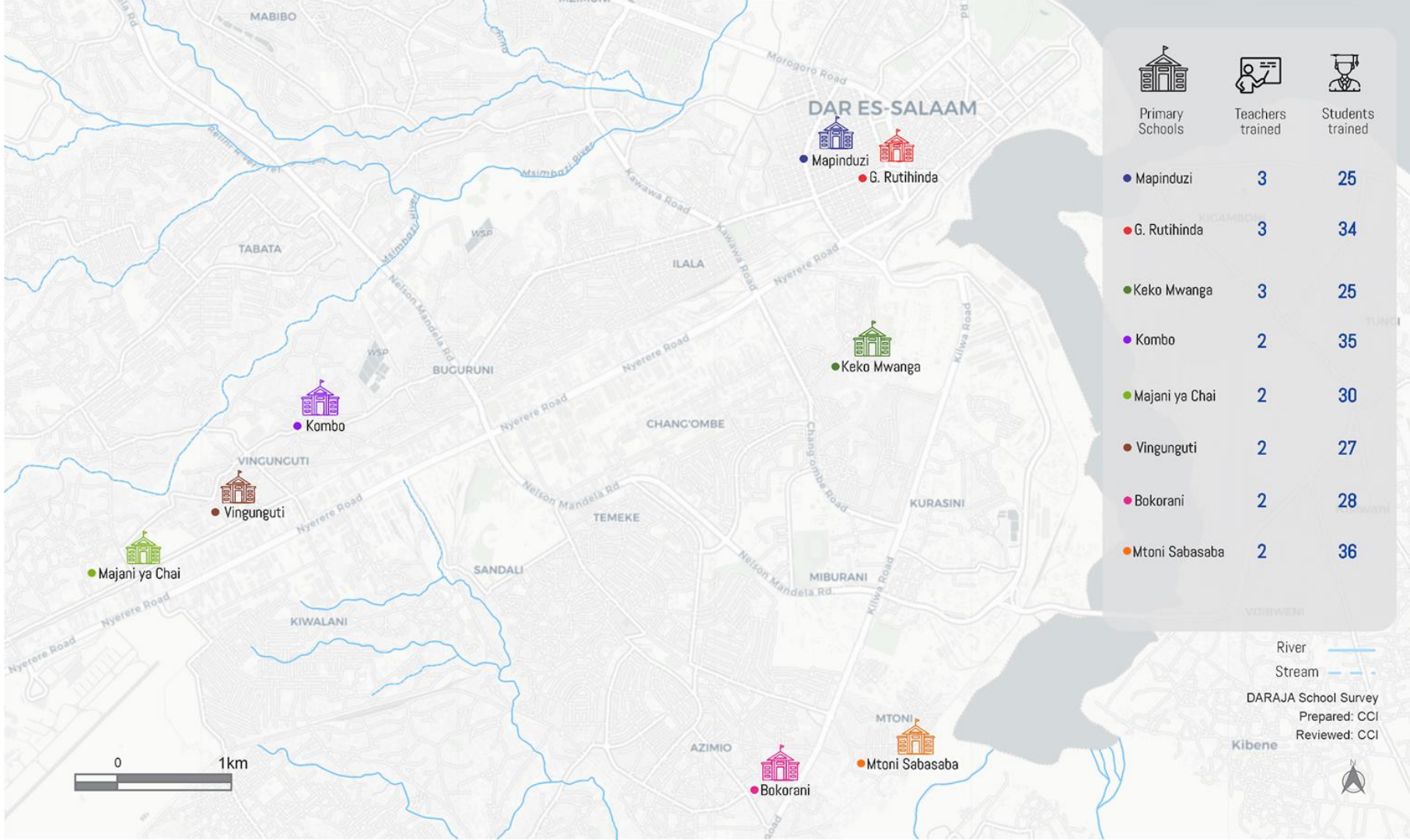


- Drink water
- Sit in shade
- Loose clothing

- Relocate
- Avoid playing in stagnant water
- Protective clothing & umbrella

57% Parents follow up on WCI through children & media

Schools: save budget on healthcare, books & resources, building maintenance



Primary Schools	Teachers trained	Students trained
Mapinduzi	3	25
G. Rutihinda	3	34
Keko Mwanga	3	25
Kombo	2	35
Majani ya Chai	2	30
Vingunguti	2	27
Bokorani	2	28
Mtoni Sabasaba	2	36

Nairobi

Information Ecosystem Maps

ⓘ Aim:

1. **Identify channels** that people use to gain information
2. Establish **multi-way communication** between TMA and users
3. **Diagnose blockages** to the flow of WCI
4. Develop practical measures to **remedy blockages**

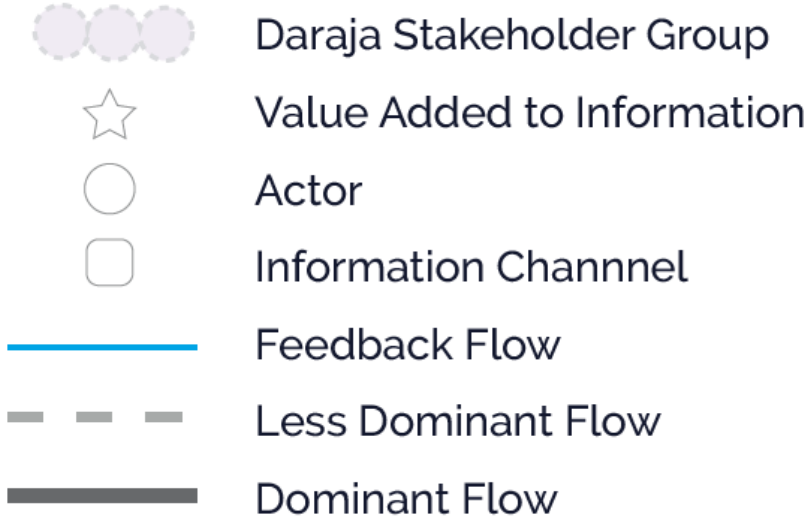
Concept:

Diagrams show:

- Actors
- Channels used
- Frequency and popularity of info flow

Additional for Endline:

- Coordination of actors
- Value added through interpretation and locally relevant advice



Validation:

Please consider the following questions as you review the diagrams:

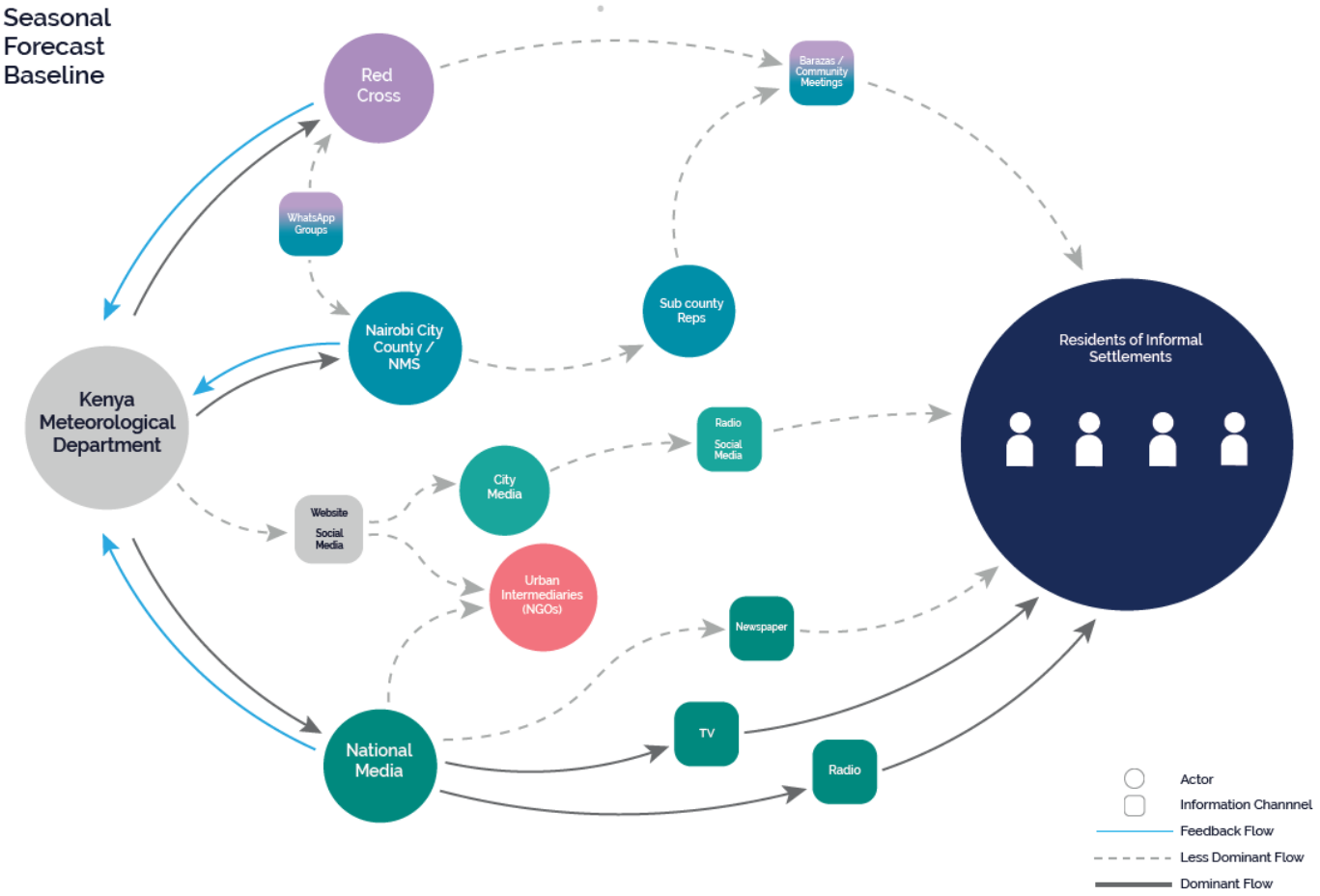
Thinking about the different types of forecast *(seasonal, regular & severe)* information services:

1. Do these diagrams represent the ways you/ your organisation receive or access the forecast information and share it with others?

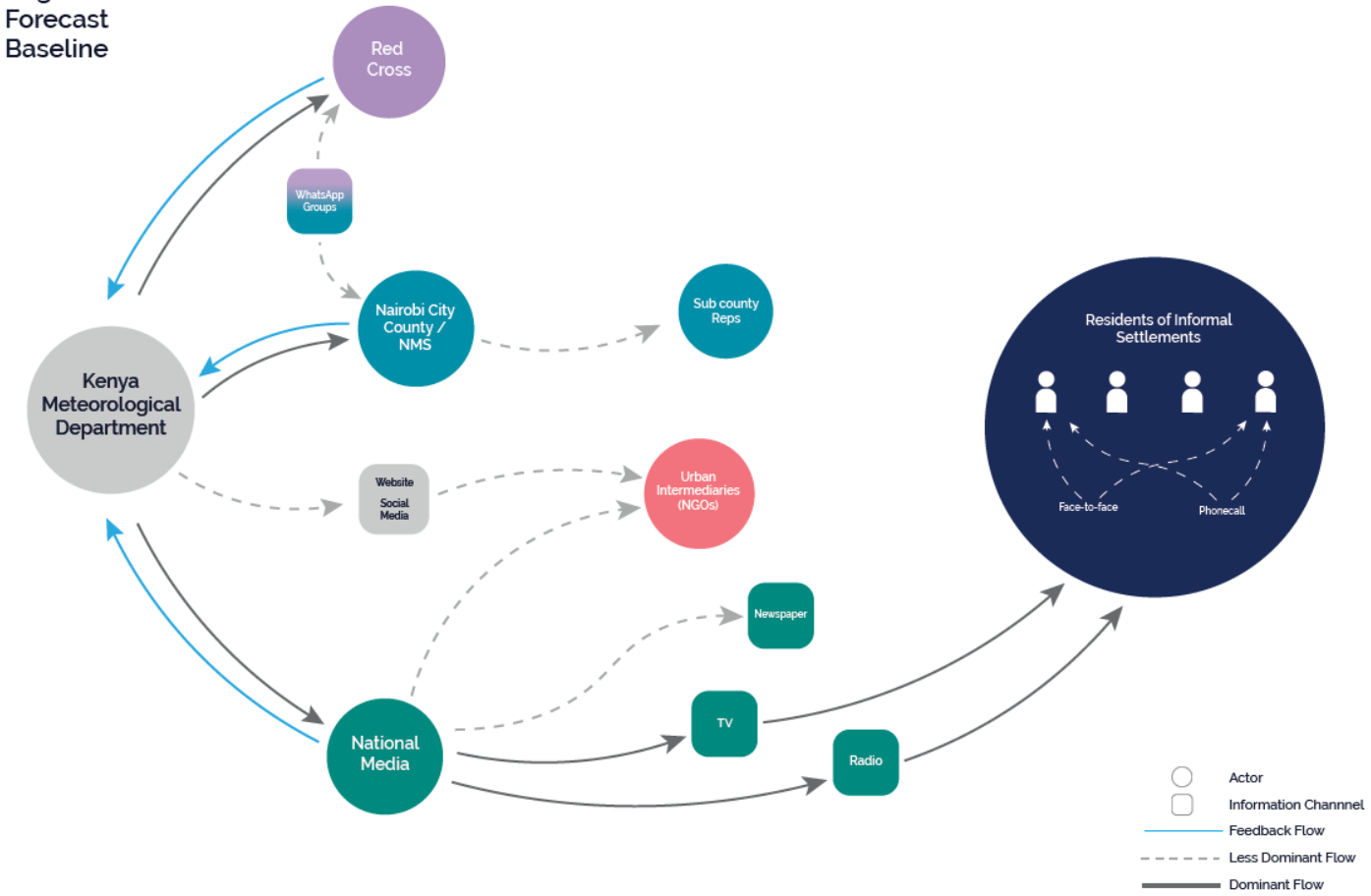
1. Do these diagrams represent the changes to information flows from the DARAJA pilot services?

Baseline:

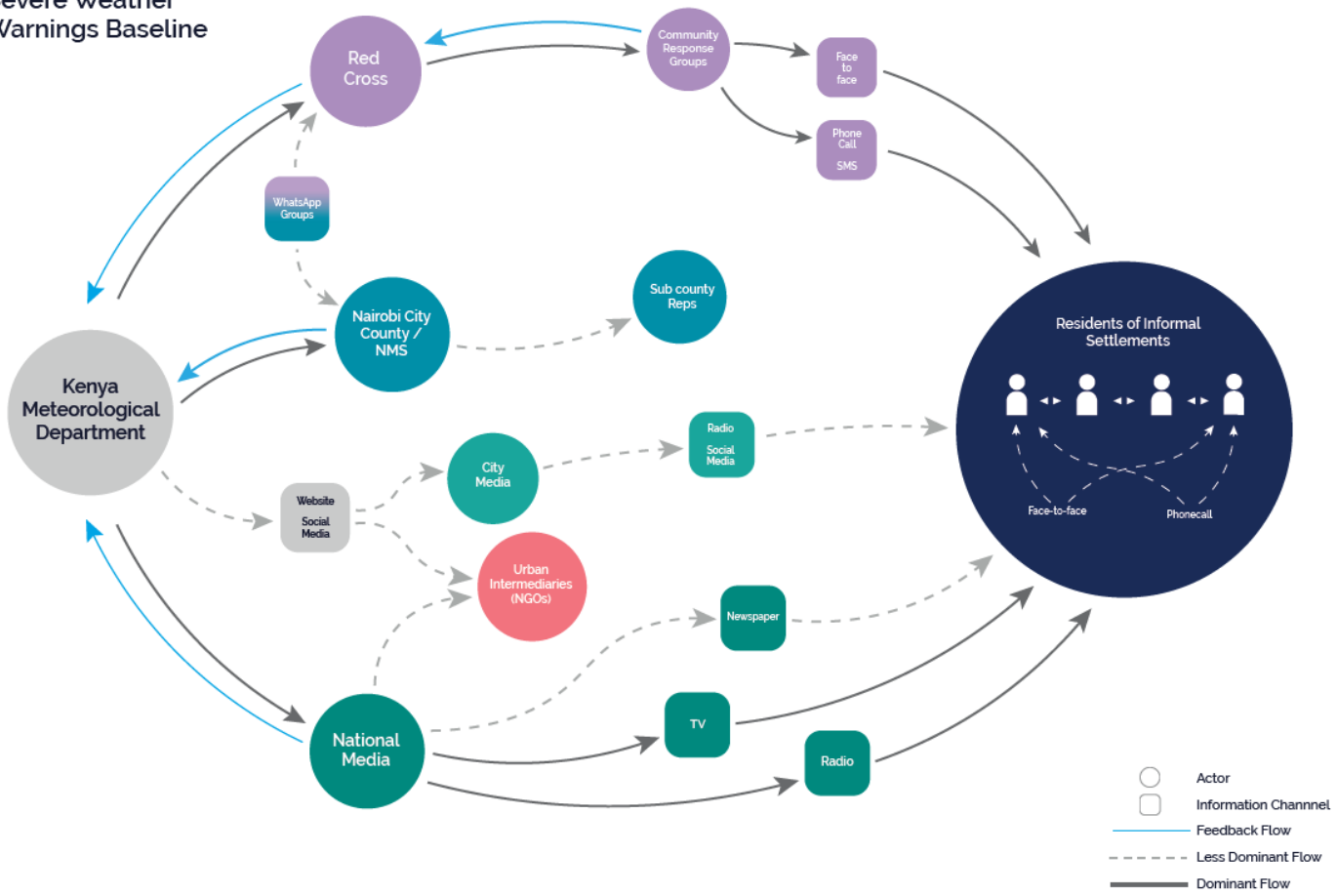
Nairobi: Seasonal Forecast Baseline



Nairobi: Regular Forecast Baseline

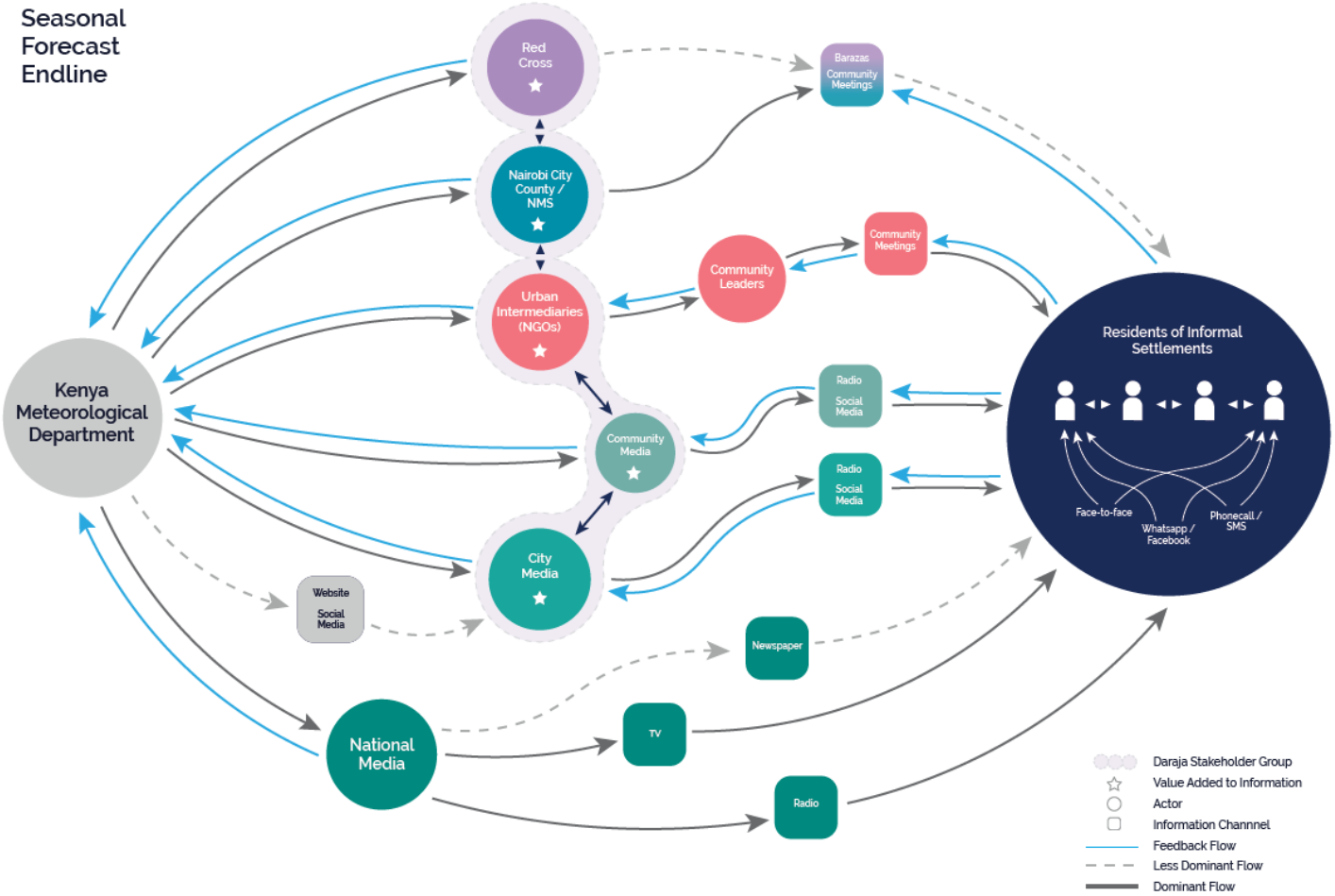


Nairobi: Severe Weather Warnings Baseline



Endline:

Nairobi: Seasonal Forecast Endline



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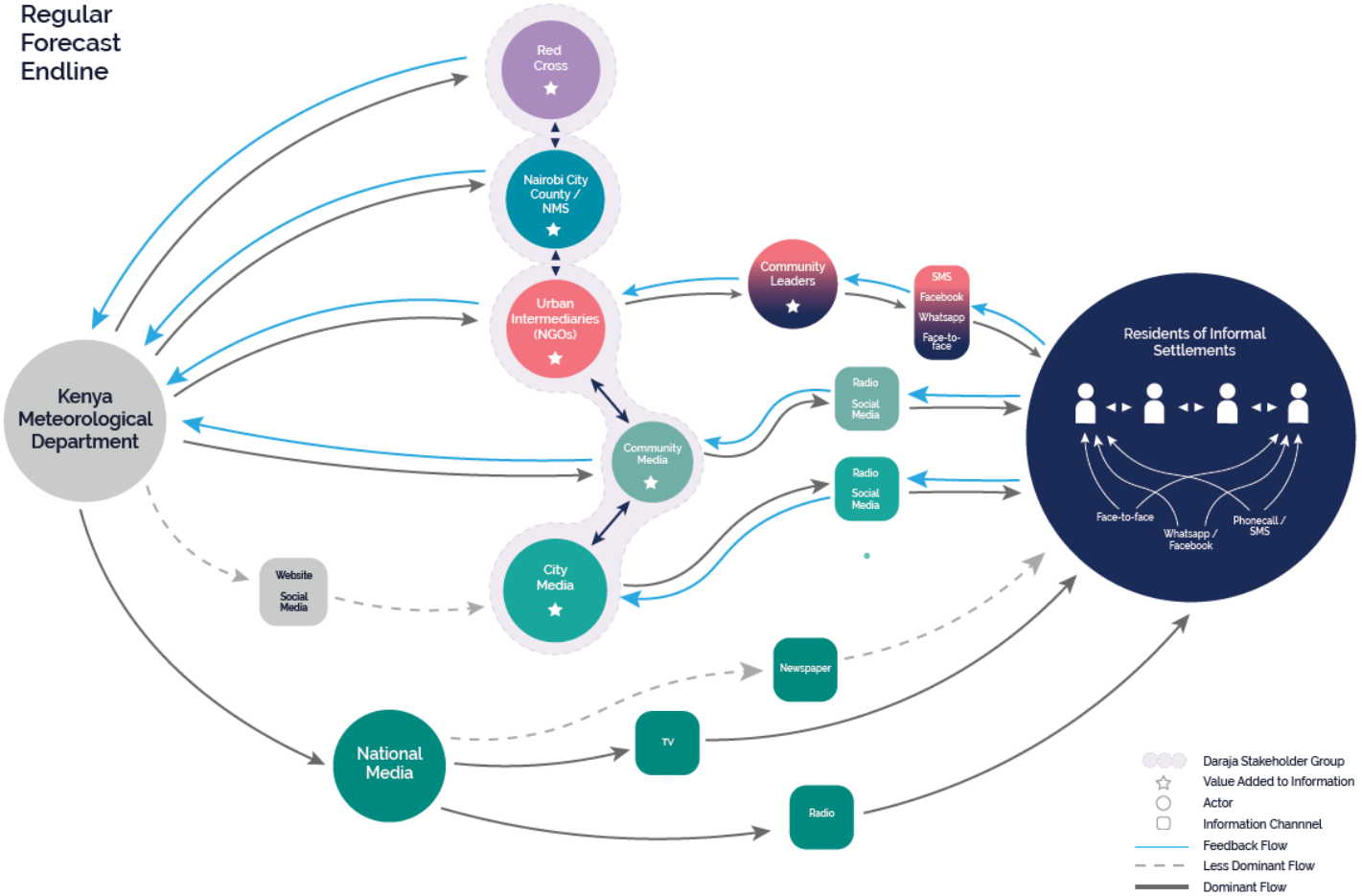
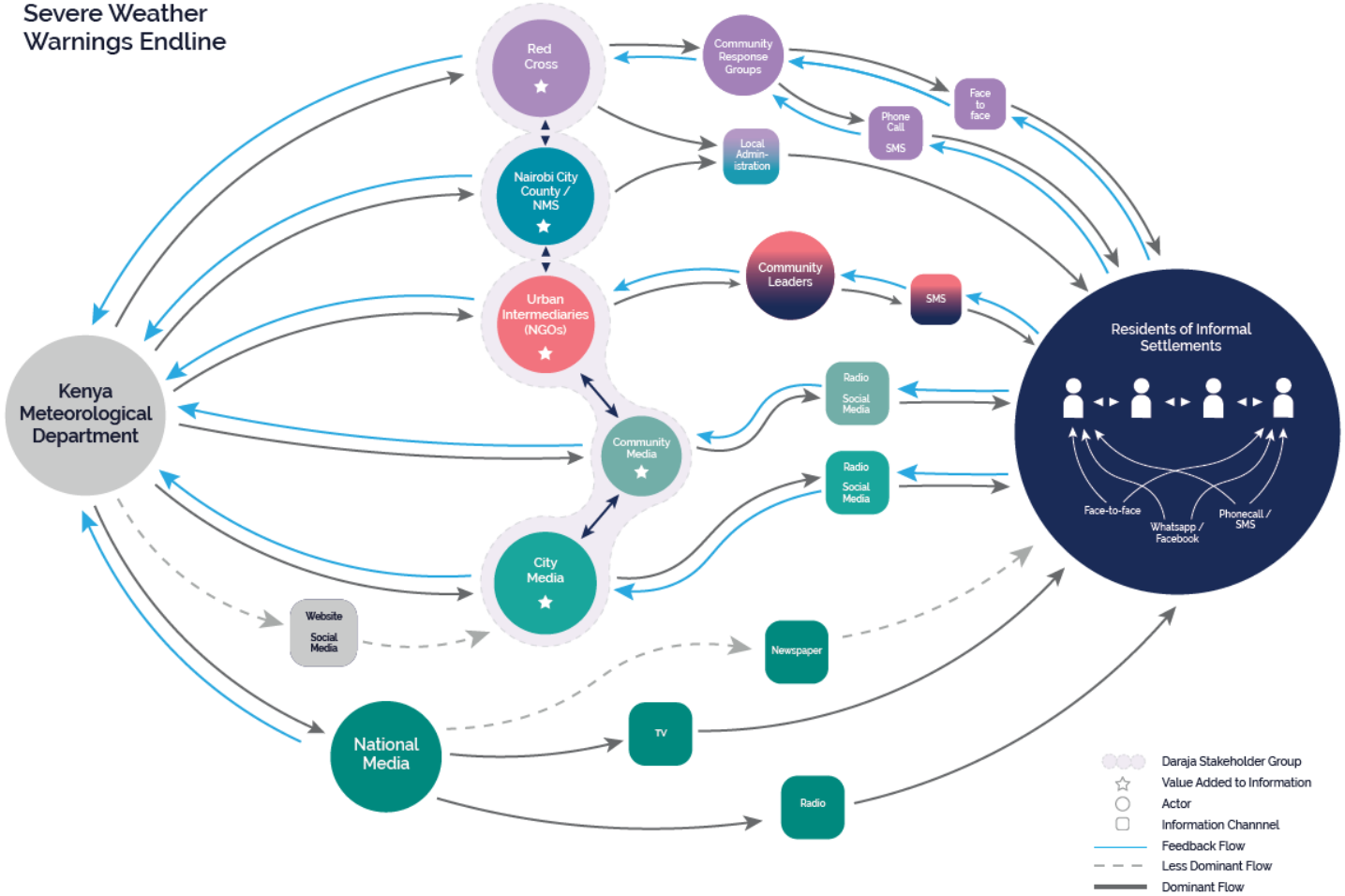


Nairobi: Severe Weather Warnings Endline



Dar Es Salaam

Information Ecosystem Maps

ⓘ Aim:

1. **Identify channels** that people use to gain information
2. Establish **multi-way communication** between TMA and users
3. **Diagnose blockages** to the flow of WCI
4. Develop practical measures to **remedy blockages**

Concept:

Diagrams show:

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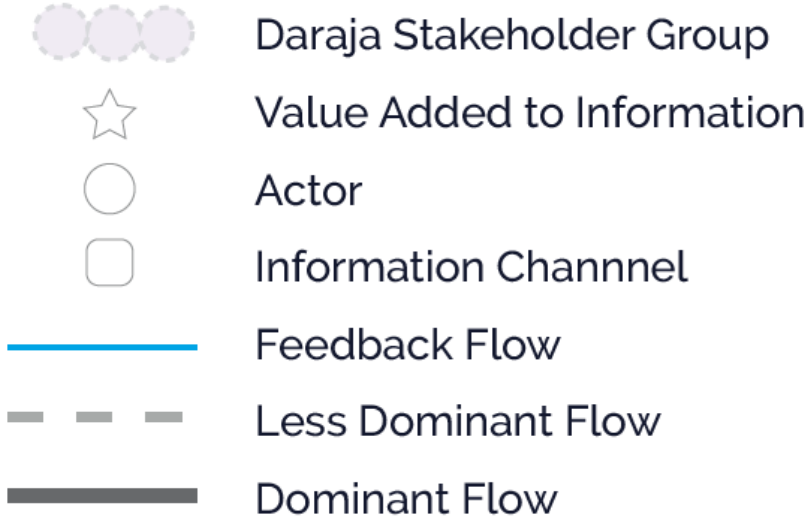
- Channels used
- Frequency and popularity of info flow

Additional for Endline:

- Coordination of actors
- Interpretation and localisation of info flow



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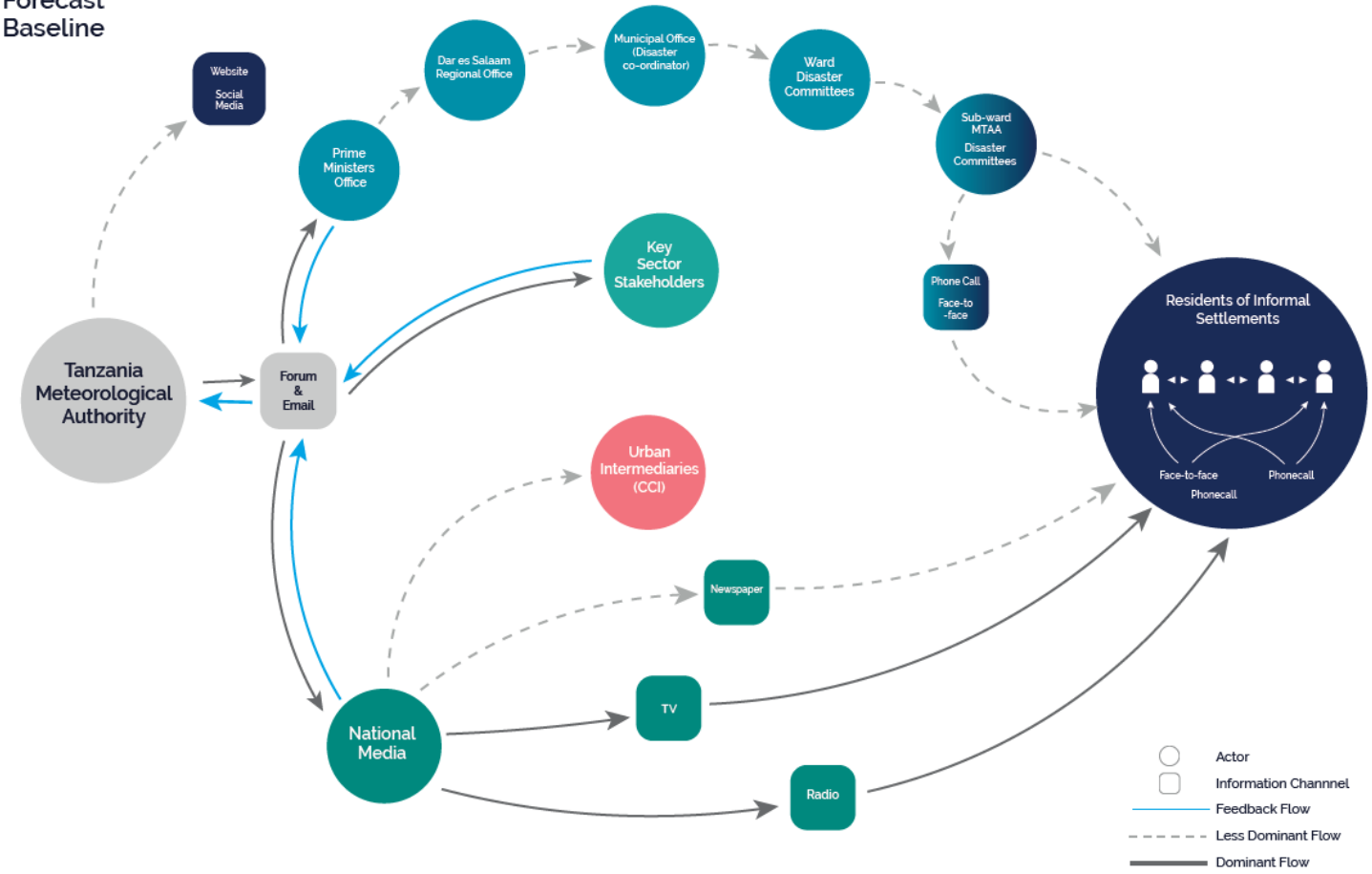
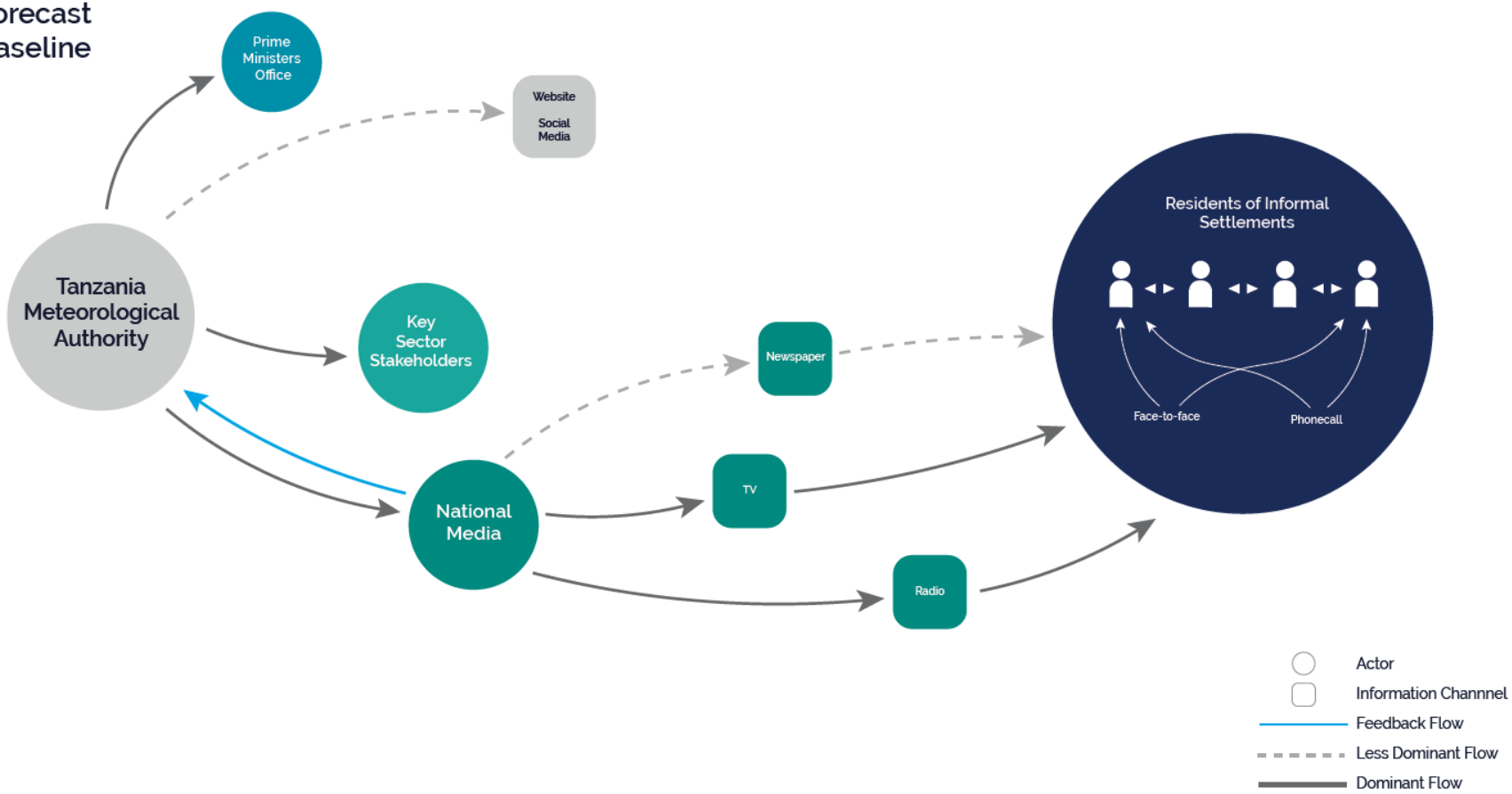
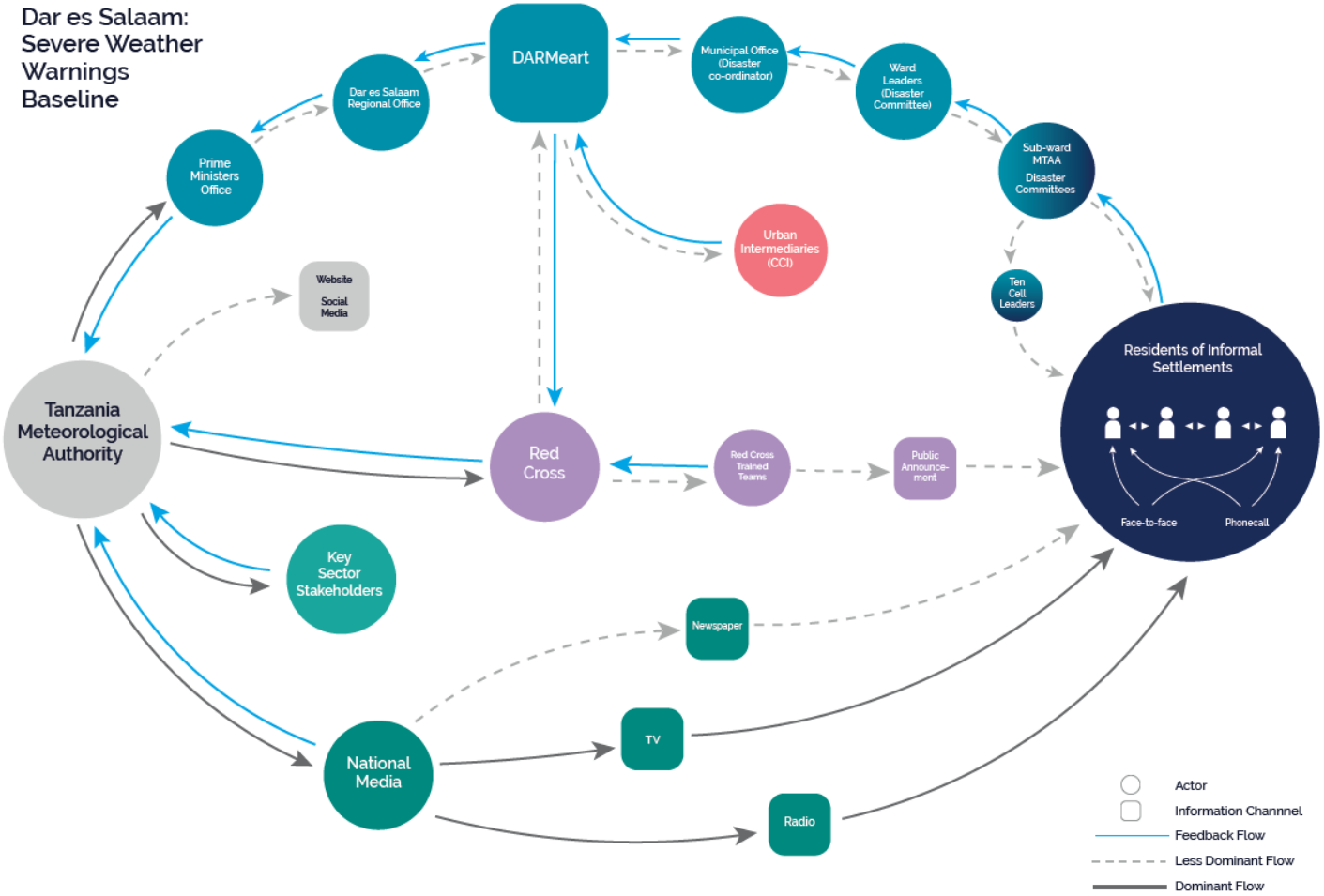
Baseline:

Dar es Salaam: Seasonal Forecast Baseline



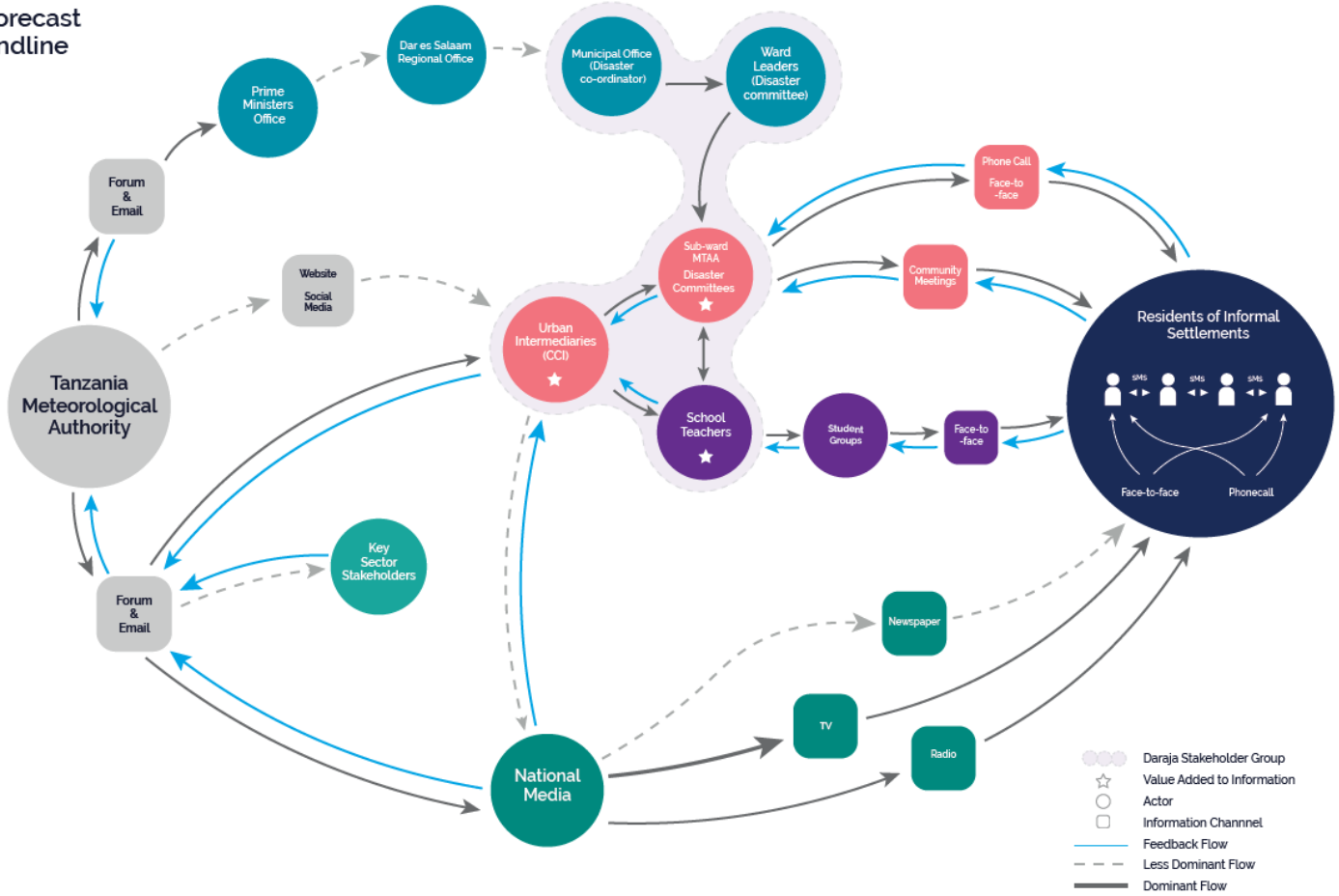
Dar es Salaam: Regular Forecast Baseline



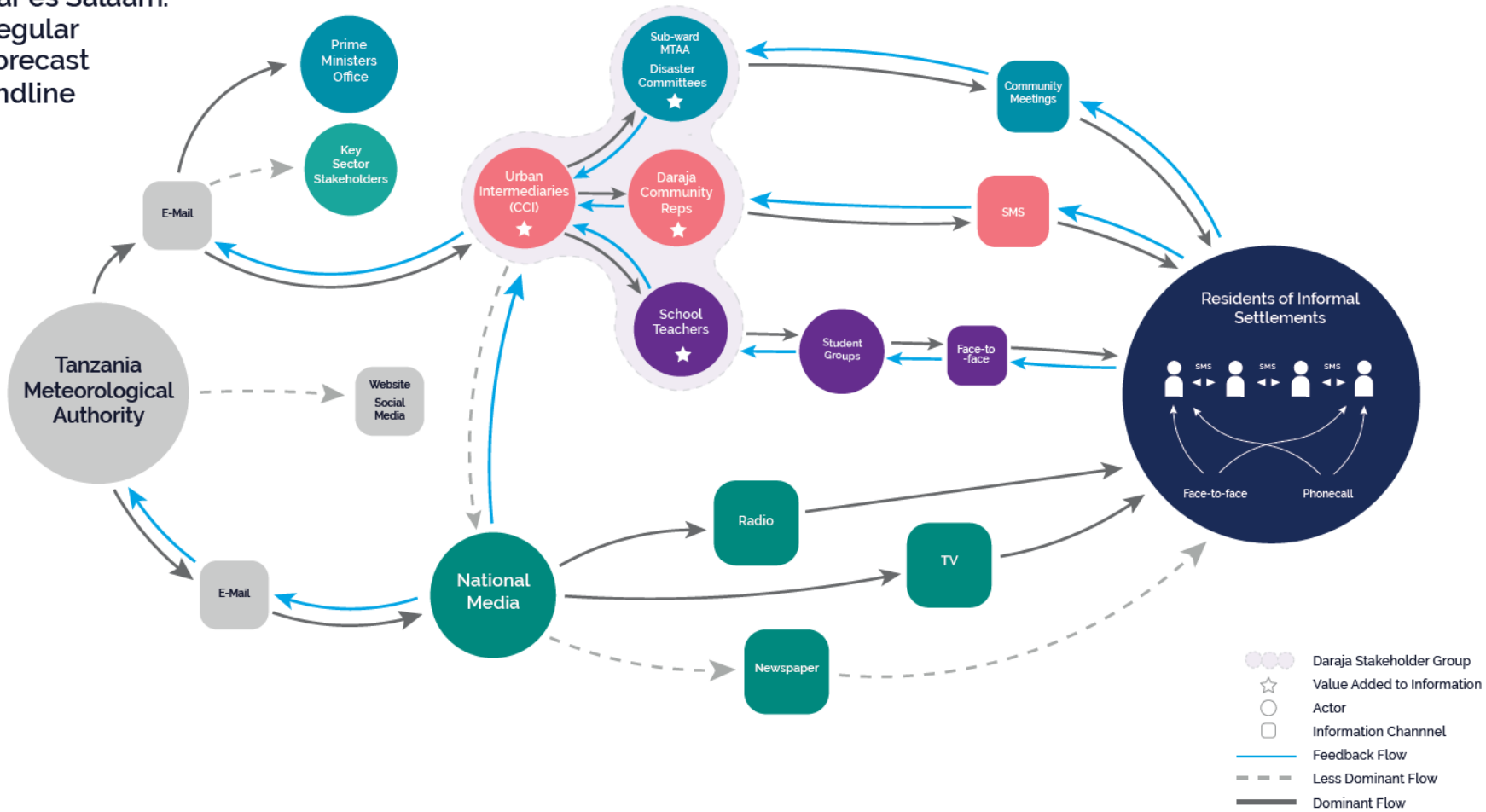

Dar es Salaam: Severe Weather Warnings Baseline
DARMeart
Municipal Office (Disaster co-ordinator)
Ward Leaders (Disaster Committee)
Sub-ward MTAA Disaster Committees
Ten Cell Leaders
Dar es Salaam Regional Office
Prime Ministers Office
Urban Intermediaries (CCI)
Website
Social Media
Tanzania Meteorological Authority
Red Cross
Red Cross Trained Teams
Public Announce-ment
Residents of Informal Settlements
Face-to-face
Phonecall
Key Sector Stakeholders
Newspaper
National Media
TV
Radio
Actor
Information Channnel
Feedback Flow
Less Dominant Flow
Dominant Flow

Endline:

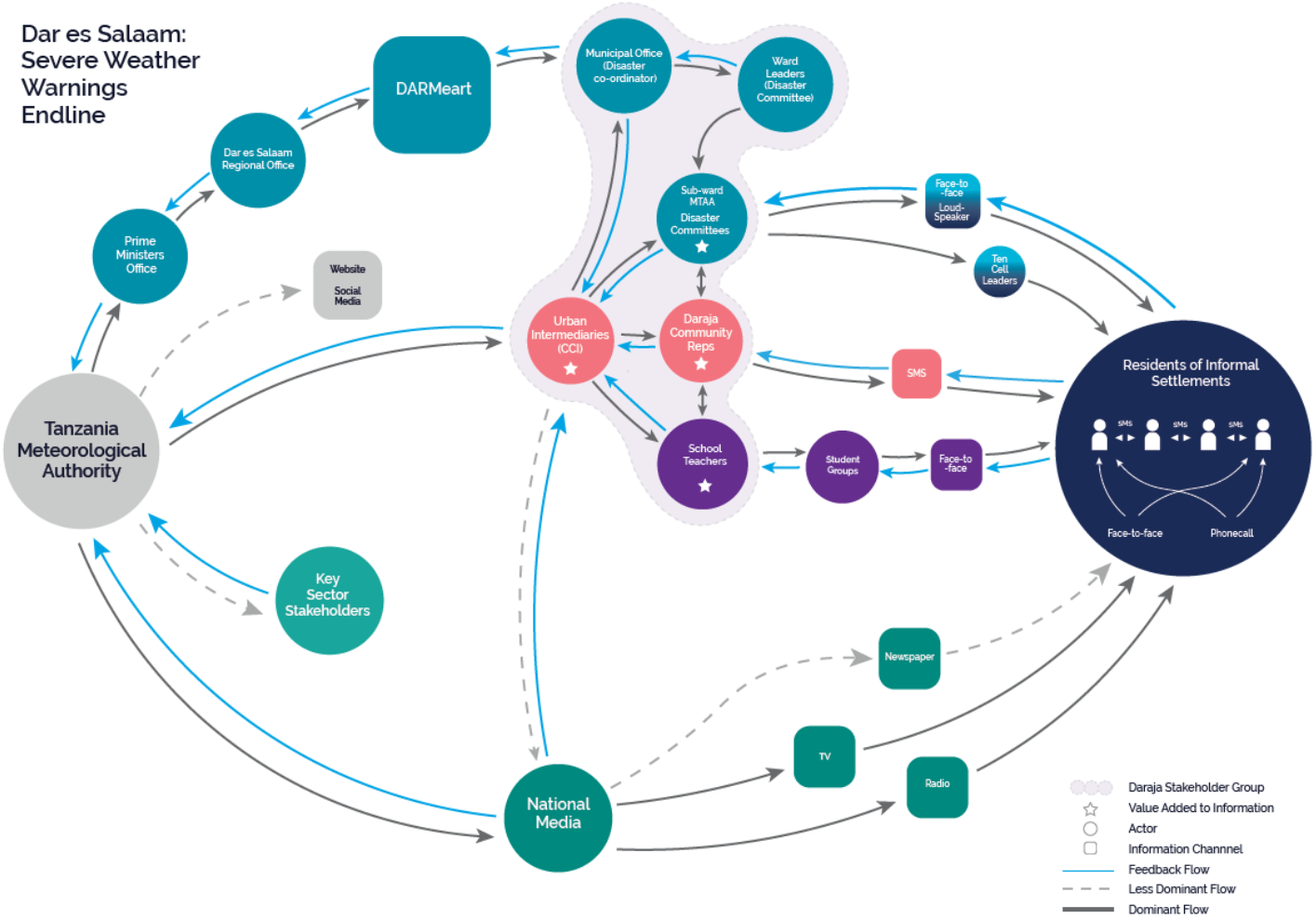
Dar es Salaam: Seasonal Forecast Endline



Dar es Salaam: Regular Forecast Endline



Dar es Salaam: Severe Weather Warnings Endline



DARAJA

Partnership + **Research and Data** + **Co-design**

Partnerships

Kounkuey Design Initiative **(KDI)**, Nairobi

Centre for Community Initiatives **(CCI),** Dar es Salaam

Resurgence Urban Resilience Impact Ltd

- **Build bridges** between weather forecasters and communities in informal settlements
- **Build resilience** of communities toward high impact weather events
- **Build relationships** with the key actors in the system

Research and Data

Research was done through:

- Household Surveys
- Interviews
- Focus Group Discussions
- Information Ecosystem Mapping (IEM)

Informed the **design of the DARAJA pilot services**

Co-design

- Workshops to co-design pilot services
- DARAJA Coordination Group
- Workshops to better understand weather and climate information
- Workshops with TMA and KMD to co-design city forecasts
- Radio training with citywide and community radios

➔ **Weather Mtaani** pilot services in Nairobi

➔ **Mimi Na Hali ya Hewa** pilot services in Dar es Salaam

➔ Reference guide for **forecast terminology**

➔ **Impact description** guide

➔ **Improved** citywide forecasts

➔ **New** citywide forecasts

➔ **Improved reporting and presentation** of WCI by radio stations

Kaa rada na weather
WEATHER
MTAANI