

# GUIDE TO SHOCK MAPS IN KUMU

To demonstrate how to conduct a Rapid System Assessment, we have created an example based on a notional representation of how COVID-19 could impact income generation in Karamoja, a relatively isolated region of Uganda where households are primarily engaged in agriculture and pastoralism.

The Example Shock Assessment Map can be viewed at this address: <https://kumu.io/MSM/example-shock-assessment-map-usaid-uganda-ftf-market-system-monitoring-activity>. You do not need to create an account to view the map. If this is your first time using Kumu, please see the Kumu Guide below for an introduction to the basics.

## UNDERSTANDING A SHOCK MAP

If you are not familiar with our system mapping methodology, we recommend you begin by reviewing the Element Guide below, which explains what the different shapes and colors represent on the map. We have added some new features to specifically represent shocks and their effect on the system, which are described in the table below.

|   |   |
|---|---|
| <p><b>SHOCK</b></p> <p>A shock is represented as a filled-in orange box.</p>        | <p><b>Definition:</b> Shocks are sudden changes to the way in which a system operates. They often occur from outside the system, affect many parts of the system, and evolve over time.</p> <p><b>Example:</b></p> <ul style="list-style-type: none"> <li>• <i>Government imposes movement restrictions</i></li> </ul>  |
| <p><b>SHOCK EFFECT</b></p> <p>A shock effect is represented an orange circle.</p>  | <p><b>Definition:</b> Shocks effects are new elements that have cropped up as a result of the shock.</p> <p><b>Examples:</b></p> <ul style="list-style-type: none"> <li>• <i>Markets are closed</i></li> <li>• <i>CAHWs movement is limited</i></li> <li>• <i>Herd movement is restricted</i></li> </ul>  |
| <p><b>SHOCK CONNECTION</b></p>   | <p><b>Definition:</b> Shocks connection are connections that have been impacted (though not broken) by the shock.</p>   |
| <p><b>IMPACTED CONNECTION</b></p>    | <p><b>Definition:</b> Impacted connections are connections between elements that have been damaged or broken by the shock.</p>  |
| <p><b>STATUS</b></p>   | <p><b>Definition:</b> Element status shows how an existing element has been impacted by a shock. If an element has not been impacted at all, we color it blue. If an element has been impacted to the point of becoming non-functional, we color it red. If it lies between these two extremes, it is colored either orange or yellow. If the status of the element is unknown, it is colored gray.</p> |



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### INTERPRETING A SHOCK MAP

In our example, the shock is “Government imposes movement restrictions,” which is one of the policies implemented by the Government of Uganda to curb the spread of COVID-19. You will find this shock element in Kumu near the upper left-hand corner of the map. We encourage you to zoom in on this section of the map.

One powerful feature of Kumu is the Focus tool, which allows you to focus on a particular element and see how it is connected to the rest of the system. We encourage you to explore this map using the Focus tool:

- Click on the orange shock element, *Government imposes movement restrictions*
- Click on the Focus tool 
- You will then see the elements that are immediately impacted by the shock:
  - Both *Government provides and maintains adequate transportation infrastructure* and *Household engages in feed and fodder production* have yellow statuses as a result of the shock.
  - Three shock effect elements were added to the system to represent new conditions that have arisen as a result of the shock: *Markets are closed*, *CAHWs movement is limited*, and *Herd movement is restricted*. These are represented by orange circles.
- Click on the arrow above the Focus tool. This expands the focus to the next level of connected elements. This view allows you to see how the shock continues to move through the system, and the second- and third-order effects that occur as a result.
  - The new shock effect elements impact the rest of the system through new shock connections, which you can see are colored orange on the map: for example, *Markets are closed* is disabling to *Household has access to buyer or market*, and *CAHWs movement is limited* directly impacts *Household accesses animal health services*. Both of the latter elements (beginning with *Household*) have a red status as a result.
- To clear the focus, click on the Focus tool again 

### LEARN MORE ABOUT SYSTEM MAPPING

Thank you for your interest in system maps! If you have any questions about conducting a Rapid System Assessment or creating your own shock map, please contact us at [uganda.research@mit.edu](mailto:uganda.research@mit.edu).

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### KUMU GUIDE


#### WHAT IS KUMU?

Kumu is an online system mapping tool, available at <https://kumu.io>. It is open-source and free to use, and an excellent platform for creating dynamic, complex system maps that are easy to access and explore. The Market System Monitoring Activity uses this tool for all of our system maps.

#### ACCESSING THE MAP

The Example Shock Assessment Map can be viewed at this address: <https://kumu.io/MSM/example-shock-assessment-map-usaid-uganda-fff-market-system-monitoring-activity>. You do not need to create an account to view the map.



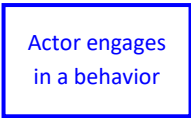
#### NAVIGATING THE MAP

- Move the map around by clicking in the white space and dragging.
- **Zoom** in and out using the **+** and **-** buttons, or with your mouse.
- Kumu has a very powerful **focus**  feature, which allows you to view subsets of the map.
  - You can focus on a particular subsystem, which will display only those elements contained in the subsystem. To do this, click on the label of the subsystem you would like to focus on, then click on the focus button on the right-hand side.
  - You can also focus on a particular element. This highlights all the elements it is connected to. To do this, first click on an element (a red outline will appear around it), and then click on the focus button on the right-hand side.
  - The up and down arrows around the focus button allow you to expand or contract the scope of the focus. Expanding the focus, for example, would include the next layer of elements that are connected to the elements you are currently focusing on.
  - To clear the focus, click on the focus button again.
- You can also **search** for a particular word or element using the search bar at the top left.

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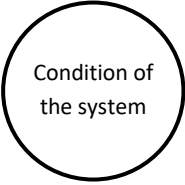




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### ELEMENT GUIDE

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| <p><b>KEY OUTCOME</b></p> <p>A key outcome is represented as a red box.</p>      | <p><b>Definition:</b> A key outcome represents an important or desired outcome for the system. A key outcome could be any one of the basic system elements: behavior, relationship, or condition.</p> <p><b>Examples:</b></p> <ul style="list-style-type: none"> <li>• <i>Farmer is resilient to climate change</i></li> <li>• <i>Higher wholesaler/dealer profitability</i></li> </ul>  |
| <p><b>BEHAVIOR</b></p> <p>A behavior is represented as a blue box.</p>           | <p><b>Definition:</b> A behavior is an action or approach carried out by an individual or entity. The descriptions typically contain an active or passive verb (e.g. "provides", "is aware of", "improves").</p> <p><b>Examples:</b></p> <ul style="list-style-type: none"> <li>• <i>Wholesaler/dealer stocks quality agricultural inputs</i></li> <li>• <i>Farmer purchases and uses quality agricultural inputs</i></li> </ul> |



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| <p><b>CONDITION</b></p> <p>A condition is represented as a black circle.</p>                    | <p><b>Definition:</b> Conditions are attributes of the market that enable a behavior, relationship, or other condition. They are aspects of the system that cannot clearly be defined as a behavior or relationship. An important kind of condition is an incentive that motivates an actor to adopt a behavior or form a relationship.</p> <p><b>Examples:</b></p> <ul style="list-style-type: none"> <li>• <i>Higher demand for quality inputs</i></li> <li>• <i>Public awareness of counterfeit inputs</i></li> </ul>   |
| <p><b>HOUSEHOLD MINDSET</b></p> <p>A household mindset is represented as an orange circle.</p>  | <p><b>Definition:</b> An opinion or perception held by the household which influences their behavior. The household mindset enables the household to engage in a particular behavior, indicating that the household sees the value in taking a particular action.</p> <p><b>Examples:</b></p> <ul style="list-style-type: none"> <li>• <i>Household has positive perception of savings groups</i></li> <li>• <i>Household understands importance of accessing trained health personnel</i></li> </ul>  |
| <p><b>RELATIONSHIP</b></p> <p>A relationship is represented as a purple circle.</p>           | <p><b>Definition:</b> Relationships between actors are mapped where the quality of interaction between actors is important to enable behaviors or conditions. For instance, good relationships can lead to benefits such as repeated business transactions or increased information sharing.</p> <p><b>Examples:</b></p> <ul style="list-style-type: none"> <li>• <i>Relationship between a dealer and a farmer (enables repeat transactions)</i></li> <li>• <i>Relationship between farmers and collectors (strengthens farmer access to market information)</i></li> </ul> |
| <p><b>GOVERNMENT BEHAVIOR</b></p> <p>A government behavior is represented as a teal box.</p>  | <p><b>Definition:</b> A behavior or activity carried out by the government. In this map, the actions taken by the government are spread throughout the system, showing how these behaviors enable other elements.</p> <p><b>Examples:</b></p> <ul style="list-style-type: none"> <li>• <i>Government provides and maintains adequate transportation infrastructure</i></li> <li>• <i>Government enforces bylaws for conservation</i></li> <li>• <i>Local officials support livestock extension service provision</i></li> </ul>  |
| <p><b>INTERVENTION</b></p> <p>An intervention is represented as a green box.</p>              | <p><b>Definition:</b> An intervention is a project or initiative being implemented by the development community that aims to influence the system.</p> <p><b>Examples:</b></p> <ul style="list-style-type: none"> <li>• <i>Organization X builds relationships between traders and exporters</i></li> <li>• <i>Organization Y provides financial literacy training to dealers</i></li> </ul>   |

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|   |   |
|---|---|
| <p>CONNECTION</p>  | <p><b>Definition:</b> An arrow connecting one item to another indicates that the former enables the latter. The arrows do not necessarily represent causation – an arrow merely means that an element facilitates another element or makes it more likely to exist.</p>   |
| <p>STATUS</p>      | <p><b>Definition:</b> Element status shows how an existing element has been impacted by a shock. If an element has not been impacted at all, we color it green. If an element has been impacted to the point of becoming non-functional, we color it red. If it lies between these two extremes, it is colored yellow. If the status of the element is unknown, it is colored gray.</p> |

#### LEARN MORE

Please contact the MSM team with any questions at [uganda.research@mit.edu](mailto:uganda.research@mit.edu).

The Kumu team also has extensive documentation at <https://docs.kumu.io/>.