

# Value-Focused Thinking for Measuring Success in Complex Operations

## A Model for Evaluating Mercy Corps' 'Local Empowerment for Peace Project' in Kenya

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### Abstract

*Investment of time or resources in a project or program can only be justified in terms of expected outcomes or outputs. Measurement of outcomes or outputs, however, presents a challenge in complex operations that often yield qualitative return on investment. Value-focused thinking, a decision modeling approach developed by R.L. Keeney, provides an effective tool for measuring outcomes. A decision-maker using the value-focused approach identifies his objectives and evaluates the possible consequences of his actions in terms of his values or principles rather than some pre-existing set of alternatives. This article documents and analyzes the use of value-focused thinking by utilizing GeNIe software package, which has been designed for decision-theoretic modeling, on a Mercy Corps project for addressing post-electoral violence in Kenya. The article seeks to illustrate the benefits of being value-focused for decision-making in complex environments, and shows how the approach helps in generating objectives; linking objectives within the broader project framework; choosing alternatives; and illuminating what and how much one can achieve from a certain course of action.*

### 1.0 Introduction

Determining success in complex operations, whether it is peacekeeping, counterinsurgency, humanitarian assistance, disaster relief, or any range of third party intervention can be an immensely difficult undertaking. Value-focused thinking provides a theoretical and procedural framework for improved decision-making in complex environments. The approach, promoted by R.L. Keeney (1992), advocates the use of value judgments to arrive at and implement decisions across a multitude of potential sectors and situations. Its main contribution lies in providing a substitute to the relatively simple and commonly used method of alternative-focused thinking that depends on identifying choices that are readily available and choosing the best of them. Value-focused thinking, on the other hand, starts by identifying the best choice, even if it is not readily available to us, and working to make it a reality.<sup>1</sup>

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The authors for this study worked in direct collaboration with Mercy Corps to retroactively evaluate a conflict resolution/prevention project in Kenya: the *Local Empowerment for Peace Project*, or LEAP. The project aimed to prevent the recurrence of violence witnessed in the disputed presidential election of 2007 through developing sustainable conflict mitigation mechanisms. Our role within the context of LEAP was to create a value-focused model, or means-ends objective network (MEON), for depicting probabilistic outcomes of the Mercy Corps' project. The model we built would provide the organization with a framework in which the project could be statistically evaluated. Presumably, this model would also help Mercy Corps to identify areas in which the organization could be more effective.

Our technical tool for building the model was Graphical Network Interface (GeNIe) software package, which is used for creating decision-theoretic models. Insertion of quantitative data in the form of probabilities and utilities is an essential part of modeling through GeNIe. However, the bulk of our model-building process was qualitative in nature and consisted of content analysis of project documents; and elicitation of values from the client (i.e., what was of particular importance to project staff) in accordance with the principles of value-focused thinking by establishing a hierarchy of project objectives. As we identified a number of areas within the project where objectives and activities/tasks were apparently incorrectly prioritized, significant time was dedicated to discussing our findings and recommendations with the Mercy Corps' staff and establishing mutually agreed upon alterations to the model.

Seeking to provide Mercy Corps with valuable feedback on their programs has been an important aspect of our work. However, our broader objective is to illustrate the value of decision modeling for complex social interactions in a multi-stakeholder decision-making environment. The modeling technique used, therefore, has applications that go beyond LEAP and can be used in other complex operations.

## **2.0 Mercy Corps' Rift Valley LEAP Project**

Mercy Corps has implemented numerous conflict resolution and prevention programs in some of the most volatile conflict regions of the world, including the West Bank, Iraq, Kosovo, Nepal, Liberia and Kenya. Beginning in 2008, the *Yes Youth Can!* project and LEAP were initiated in Kenya in response to the violence of the 2007 election, particularly in the Rift Valley region of the

country. Collaboration between the authors and Mercy Corps project staff, however, focused entirely upon LEAP.

## **2.1 Background to LEAP**

While frequently touted as one of Sub-Saharan Africa's most vibrant multiparty democracies, Kenya continues to struggle with problems of corruption, deep political divisions along ethnic lines, and elite manipulation of the electorate through parochial patron-client networks. The disputed presidential election in 2007 saw the incumbent Mwai Kibaki declared the winner against main opposition candidate Raila Odinga despite widespread accusations of irregularities, fraud and intimidation. The resulting backlash ended in over 1,500 deaths and the displacement of 660,000 Kenyans.<sup>2</sup> While a power-sharing government was formed in the wake of this unrest, the underlying issues of unemployment (especially among youth), competition for resources, and political manipulation of grievances persist throughout Kenyan society. It was widely acknowledged that without interventions by a range of international and domestic actors, the equally contentious 2013 presidential election would result in more widespread violence.

Although isolated clashes were reported, the March 4, 2013 presidential election in Kenya was largely peaceful, in stark contrast to the massive violence following the 2007 election. With intense international attention and increased mobilization of Kenyan civil-society organizations, both candidates repeatedly vowed to discourage and denounce violence. As a result of the election, Uhuru Kenyatta was declared the victor by a 50.1% to 43.3% margin over Raila Odinga.<sup>3</sup> Once again, Odinga complained of widespread fraud and irregularities, but all parties brought their claims before the Kenyan Supreme Court. Kenyatta, who had been indicted for crimes against humanity by the International Criminal Court following the 2007 election, was officially declared the winner by the Court. Despite the ruling in favor of Kenyatta, Odinga has respected the Court's decision. While many international and domestic factors contributed to a much more peaceful election process in 2013, Mercy Corps' conflict mitigation efforts in the tense Rift Valley region have been held up as a model to be replicated in the future.<sup>4</sup>

## 2.2 Overview of LEAP

LEAP was funded by the United States Agency for International Development (USAID). Donor literature identifies the project as a \$1.7 million peace-building and reconstruction program that aims to ‘strengthen the capacity of local actors and institutions...to develop and advance sustainable peace, reconciliation and norms of nonviolence based on justice, accountability and equality.’<sup>5</sup>

Mercy Corps has been working in the Rift Valley since 2008 on behalf of USAID in an effort to strengthen local peace networks.<sup>6</sup> USAID’s priorities also define the strategic goal that Mercy Corps expects to reach through LEAP. The organization identifies this goal as: ‘to strengthen the ability of local actors to address root causes of post-election violence and to promote peace and reconciliation at the community level.’<sup>7</sup> As the model building process advanced, details of which will be described in the next two sections, Mercy Corps’ personnel referred to their strategic objective as *sustainable peace*.

LEAP has targeted the strategic objective of *sustainable peace* through several diverse but inter-linked activities. These include: empowerment of youth in community development and decision-making; fostering community dialogue; strengthening the ability of local and district structures to address causes of violence, for example, through special District Peace Committees (DPCs); resolving disputes – particularly disputes over land ownership – that cause tension among ethnic groups; and educating the politicians on democracy to curb exploitation of ethnic tensions for political benefits.

The strategic objective, and the multiple sub-objectives and activities supporting it, are described in the following sections. The model building process is also explained in detail to show the step-by-step process of decision modeling in complex social environments. Also described is how, when a model is at the appropriate stage, one can apply metrics and measurements to the chain of activities, means-ends objectives, fundamental objectives, and finally the strategic goal. The broad purpose of the next sections is to show that, while most of the data inserted into a value-focused model is derived from value judgments, there are useful insights to be drawn from both the model building process and the interpretation of data when factored into the value-based model.

### **3.0 Value-focused thinking, GeNIe, and LEAP**

#### **3.1 Value-focused thinking**

As discussed previously, in his book *Value-focused Thinking: A Path to Creative Decisionmaking*, Ralph L. Keeney promotes the idea of using values to improve decision-making. Keeney believes that instead of choosing from a variety of readily-available decision alternatives, one should focus on ‘articulating and understanding our values and using these values to select meaningful decisions to ponder, to create better alternatives than those already identified, and to evaluate more carefully the desirability of alternatives.’<sup>8</sup> Once the values have been articulated, it is easy to specify what one hopes to achieve from a decision context or program, which then helps in identifying objectives. Values, in the context of LEAP, were Mercy Corps’ perspectives on ethics, attitudes toward risk, priorities, and guidelines for action. These values were gleaned by a review of documents that Mercy Corps provided, along with source elicitation.

The advantages of focusing on values, according to Keeney, include: uncovering hidden objectives or ones that are not readily apparent; guiding information/data collection that is in line with the values; improving communication, since discussions on values can be more participatory than, for example, professional discussions; facilitating involvement in multiple-stakeholder decisions; and interconnecting decisions so that all alternatives align with the same set of ultimate objectives.<sup>9</sup> Besides, the value-focused approach emphasizes creativity, which can help in generating new and better alternatives. It also helps in identification of potential decision opportunities by appraising how well we are performing in terms of our values, and in guiding strategic thinking.<sup>10</sup>

Another benefit of the value-focused approach, that merits a separate mention, is that it allows for quantification of value judgments through what Keeney calls a ‘value model.’ A value model shows both qualitative and quantitative relationships, as will be illustrated below through the use of GeNIe. Discussion with the client is an important part of building such models as the values must be quantified according to the client’s perception. The first step in the building of the model is identification of objectives. Once objectives have been identified, one can define attributes to measure the achievement of objectives.<sup>11</sup> The models then allow sensitivity analyses to evaluate the relative importance of various alternatives for the ultimate objectives, and choose the alternatives with the highest yield.

Many of the above advantages were directly witnessed during the course of model-building for LEAP and subsequent analyses. Mercy Corps, after reviewing finalized versions of the model, also remarked upon the several benefits of using value-focused thinking and utilizing a value model to quantitatively depict their program objectives.

### **3.2 Building models in GeNIe**

The benefits of utilizing value-focused thinking are readily apparent when objectives are entered into software that can interpret complex relationships and denote influences among objectives in a visually-appealing and comprehensible structure. GeNIe allows users to build decision-theoretic models in an intuitive manner by using a graphical click-and-drop interface. The software is the graphical interface for a Bayesian inference engine built by the Decision Systems Laboratory, which, the Website claims, has been tested in the field since 1998.<sup>12</sup> Bayesian networks, as described by Eugene Charniak, are models where the complexity of circumstances precludes complete understanding of the situation, so entities must be described in a probabilistic manner.<sup>13</sup> Notably, Bayesian networks allows for the ‘calculation of conditional probabilities of the nodes in the network given that the values of some of the nodes have been observed.’<sup>14</sup>

The LEAP model built for Mercy Corps is described in detail below, however, introducing it briefly at this point, some values were inserted into decision nodes as they directly corresponded to observable metrics, whereas other values were placed into the structure in a subjective manner by developing a probability table for swing weights. This was necessitated as metrics were not readily identifiable in either Mercy Corps’ literature, or through elicitation of subject matter experts.

## **4.0 The model building process for LEAP**

### **4.1 Building the affinity list**

The first part of designing the model was building an affinity list. More than five different project papers were utilized in order to extract objectives, goals, and actions that Mercy Corps intended to achieve through its program in Kenya. Key terms were also identified through using *Wordle*,<sup>15</sup> a simple program for content analysis available on the internet (example in figure 4.1).



Differentiating between the various kinds of objectives is important for building an objectives' hierarchy in GeNIe. The strategic objective comes first in the hierarchy and is decomposable into fundamental objectives. An important property of fundamental objectives is that these should be mutually exclusive and, in Keeney's words: 'collectively should provide an exhaustive characterization of the higher-level objective,<sup>17</sup> or the strategic objective. Second, the means lead to either one, or many, or all of the fundamental objectives. Elaborating on the link between means and fundamentals, Keeney observes that, 'Repeatedly tracing end objectives for specific means objectives should lead to at least one fundamental objective in a given decision situation.'<sup>18</sup> Ultimately, a fundamental objective should answer the question *Why is it important?* in terms of *It is important*; whereas a means objective should answer the same question in terms of the ends that will result from the objective.<sup>19</sup>

As GeNIe is designed for intuitive thinking, the actual building of a network of objectives is relatively straight-forward. Figure 4.2 provides an insight into the model construction process (not to be confused with the complete models that are presented in Appendices A & B). Figure 4.3 shows the strategic and fundamental objectives embedded in the model. The strategic objective, *sustainable peace*, is identified in green and is a hexagon in shape. Four fundamental objectives surround the strategic objective and are also identifiable as green hexagons. These are:

1. address root causes of post-electoral violence;
2. build sustainable conflict mitigation mechanisms;
3. emergency response; and
4. reconciliation lessons and recommendations (documentation for future projects)

Arrows, graphical depictions of influence, point from the fundamental objectives to the strategic objective, demonstrating that achieving the fundamental objectives will directly improve the chances of achieving the strategic objective. As the model shows, the fundamental objectives are mutually exclusive and collectively exhaustive. In contrast, the means objectives can be highly interdependent and can be added upon or deleted. In the model, means objectives, such as *early warning* and *district peace committees*, are light blue circles. Tasks are identified as light pink circles and are actions undertaken by Mercy Corps in order to achieve a certain objective. For example, the activity *targeted economic development* contributes to the achievement of the means objective *reduce youth dependence on political violence*. Finally, metrics are identifiable as yellow circles and are often directly observable, such as *number of people killed*.



Figure 4.2: Under-construction model

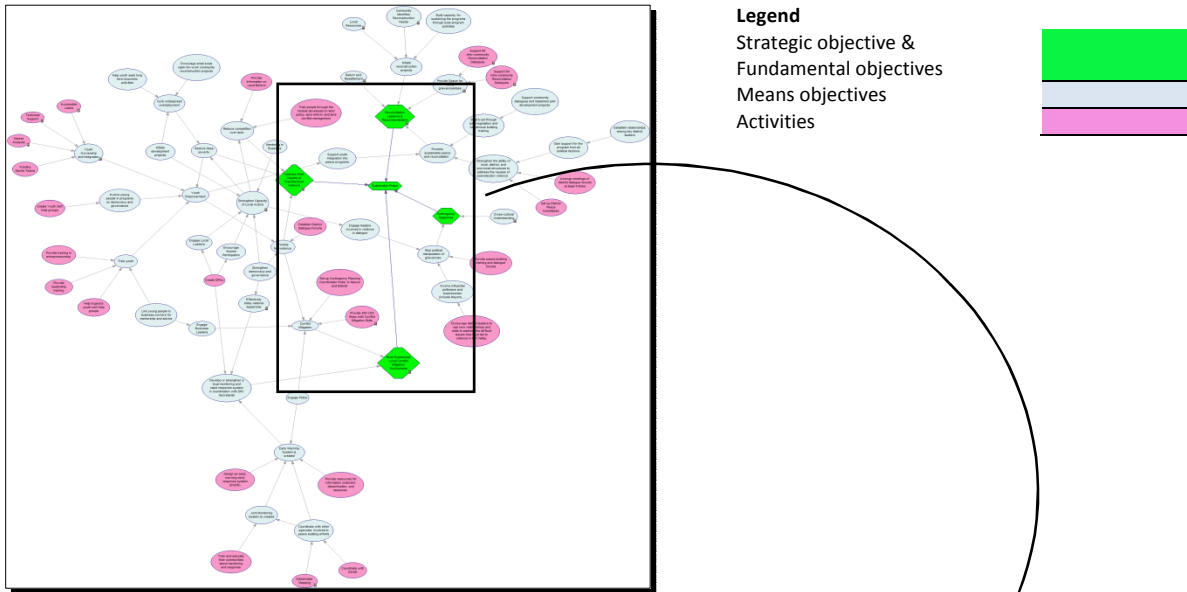
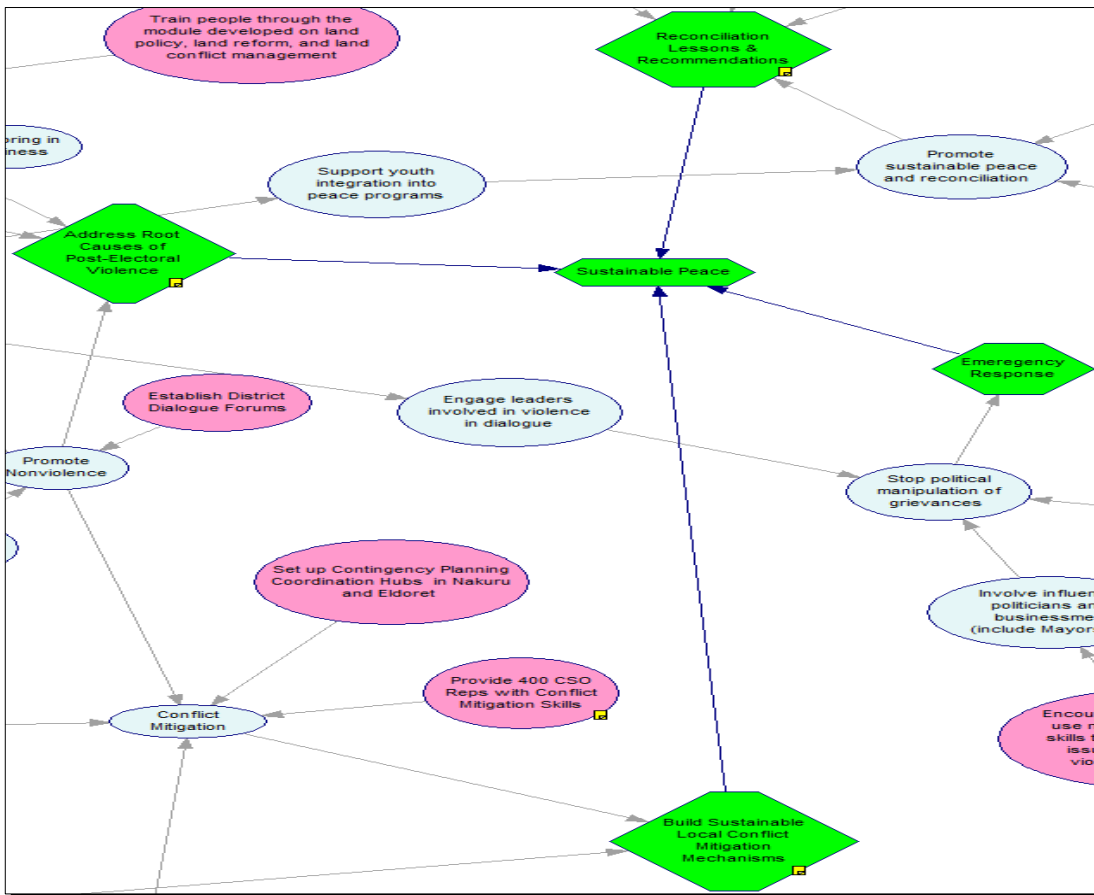


Figure 4.3: Strategic and fundamental objectives



Initially, all the three authors worked on the model building process independently to generate as many ideas as possible. This resulted in three different large structures as we analyzed the documents separately and came to somewhat varying conclusions. A brain-storming session was then held and the three models were brought together. After discussing what should be included or omitted, the first comprehensive model was divided into three separate sections: Preparation and Prevention, Reconciliation and Reconstruction, and Early Warning. This large and unwieldy model was then refined in consultation with Mercy Corps and several nodes were either consolidated or deleted. For example, two nodes *reduce deep poverty* and *cross-cultural understanding* were deemed too vague and were removed. Finally, metrics were added on to the model. The consolidated model was much smaller and comprehensible for the clients unfamiliar with the model technicalities (see Appendix A and Appendix B for the final model).

### 4.3 Structure for quantitative evaluation of LEAP: probabilities and utilities

The next step in GeNIe was to build the quantitative structure of the model. This was done, first, through placing probabilistic values on the means given the *state* of their respective parent nodes. The second step involved measuring the utility of the fundamentals. This was followed by calculating the utility of the strategic objective. Finally metrics were also quantified.

#### 4.3.1 Measuring the means-ends objectives

As mentioned earlier, assigning probabilities involves value judgments rather than some concrete criteria. Table 4.1 provides an example of assigning probabilistic weights to the means objective *land reform issues* given the state of the parent node, in this case, the means objective *reduce political party opportunism* (see Appendix A). Hence, the node land reform issues can be interpreted in terms of the state of its parent node, political opportunism, such that, for instance, the probability of *satisfactorily addressing* land reform issues is 80% if there is *no opportunism*, 20% if there is *some opportunism*, and only 5% if there is *widespread opportunism*.

**Table 4.1: Probability of satisfactorily addressing land reform issues given the state of the parent node**

Land reform issues	Reduce political party opportunism		
	No opportunism	Some opportunism	Widespread opportunism
Satisfactorily addressed	0.8	0.2	0.05
Partially addressed	0.15	0.7	0.15
Unaddressed	0.05	0.1	0.8

Where a certain node had more than one parent, the states of all these parents had to be collectively analyzed for their effects on that node. One such example is provided in table 4.2 which shows the probability of a means objective with three states: *high*, *medium*, and *low*, given the *high*, *medium*, and *low* states of two parents.

**Table 4.2: Probability of means (3 states, high H, medium M, low L) given two parents with states H, M, L**

	Probability of a means objective given the state of the parent objective								
P1	H	H	H	M	M	M	L	L	L
P2	H	M	L	H	M	L	H	M	L
Means - H	0.9	0.3	0.2	0.7	0.15	0.1	0.5	0.1	0.02
Means - M	0.08	0.5	0.5	0.2	0.7	0.5	0.3	0.4	0.08
Means - L	0.02	0.2	0.3	0.1	0.15	0.4	0.2	0.5	0.9

#### 4.3.2 Utility of the fundamental objectives

Table 4.3 illustrates calculation of the utility of a fundamental objective, *addressing root-causes of post-election violence* with two parents. Once again, assigning utilities was a matter of value judgments. For example, the table shows the maximum utility of 1 if there is no political opportunism and the youth are not vulnerable to exploitation by the political parties, whereas the utility is 0 when both opportunism and vulnerability are high.

**Table 4.3: Utility of fundamental objective *address root causes* given the state of the two parent means**

Political opportunism	No opportunism			Some Opportunism			Widespread opportunism		
	None	Moderate	High	None	Moderate	High	None	Moderate	High
Youth vulnerability									
utility	1	0.7	0.5	0.7	0.5	0.3	0.5	0.2	0

#### 4.3.3 Utility of the strategic objective

The utility of the strategic objective was worked out in two steps. First, each fundamental objective was evaluated on a probability matrix, shown in table 4.4. The matrix had two criteria for appraising the objective: importance and variability. Table 4.5 shows the weights assigned to the fundamental objectives within the model and their relative weights to each other (see last two columns).

**Table 4.4: Importance and variability matrix for fundamental objectives**

		Importance		
		H	M	L
Variability	H	100	75	30
	M	80	60	10
	L	70	30	1

**Table 4.5: Probability and relative weights of fundamental objectives**

Fundamental objectives	Importance	Variability	Probability	Relative weight
F1: Root-causes of post-electoral violence	H	M	80	0.258
F2: Sustainable conflict mitigation mechanisms	H	M	80	0.258
F3: Emergency response	M	H	75	0.242
F4: Reconciliation lessons	M	H	75	0.242

In the second step, the expected utility of the strategic objective was worked out as the sum of utilities of the fundamental objectives through the following formula:

Sum of expected utilities  $0.258 * F1 + 0.258 * F2 + 0.242 * F3 + 0.242 * F4$  OR  $\sum$  of  
 $0.258 * F1$  (root causes of post-electoral violence)  
 $0.258 * F2$  (sustainable conflict mitigation mechanisms)  
 $0.242 * F3$  (emergency response)  
 $0.242 * F4$  (reconciliation lessons)

#### 4.3.4 Building metrics

Finally, metrics were built in the same way as means objectives. Some were picked from Mercy Corps’ project documents; the remaining were designed by the authors. When the model is used by Mercy Corps for future projects, the given metrics can be amended or new metrics can be added. Table 4.6 provides an example of a metric, *number of land disputes resolved by courts*, for measuring progress on the objective *land reform issues addressed by the government*.

**Table 4.6: Metric for addressing land reform issues**

Metric: Number of land disputes resolved by courts	Means-ends objective: Land reform issues		
	Satisfactorily addressed	Partially addressed	Unaddressed
70% or more	0.8	0.2	0.05
30% to 70%	0.15	0.7	0.15
Less than 30%	0.05	0.1	0.8

## 5.0 Model analysis

Once the model had been built, sensitivity analyses were carried out to study the impact of different values of means objectives and activities on achieving the main target of LEAP: the strategic objective, *sustainable peace*. Appendix C provides the base values for the nodes; Appendix D shows the effect of swing weights of means-ends objectives, activities and metrics on the utilities of the strategic and fundamental objectives. The swing values for the analysis are either the *low* or *high* values for the means objectives, activities or metrics.

Even in the best-managed soft projects, the probability of obtaining a utility of 1 on the strategic objective is very low. Hence, for the current project, a 0.6 or above cut-off value was considered as satisfactory in terms of the achievement of *sustainable peace*. The tables in the analyses, below, have been derived from Appendix D and show some of the important means objectives or activities in the model, which when *high*, are associated with the 0.6 or above value for the strategic objective. Column three of the tables show the fundamental objectives linked to these means and activities. The last column shows the activities linked to the means objectives.

It was observed that the model was roughly built around two means objectives: *political party opportunism* and *DPC's capability* (figures 5.1 and 5.2). Some major findings from the analyses have therefore been split accordingly and are reported in the following sub-sections.

### 5.1 Impact of reducing political party opportunism (Analysis –I)

*Reducing political party opportunism* emerged as an important means objective within the model (table 5.1 and figure 5.1). Some important features of the network around *political party opportunism* have been highlighted in red in figure 5.1 and are discussed hereunder:

#### 5.1.1 Main features of the network

- 1- The highest strategic objective value 0.65 is linked to *reducing political party opportunism*. Political opportunism is also linked to all the four fundamental objectives.
- 2- Besides *reducing political party opportunism*, the other three nodes that are central to the network are: a) *youth dependence on violence*; b) *land reforms*; and c) *violent event*.
- 3- There are three activities in the network: a) *education on democracy*; b) *targeted economic development of youth*; and c) *PR campaign to facilitate notification*.



### 5.1.2 Implications for project managers

Several interesting findings emerged out of the model analyses. First, it had been presumed during the process of building the model that District Peace Committees (DPCs) would emerge as an important component of the project. However, it was discovered that all the four fundamental objectives could be achieved simply by emphasizing one objective, *reducing political party opportunism*, and the means and activities built around it. Further discussions with Mercy Corps and perusal of the project documents revealed that, by design, the DPCs were indeed envisioned to play a peripheral rather than a central role in the project. Nevertheless, the possibility of linking the node *DPC's capability* to the node *investigation* needs to be studied for analyzing its impact on the utility of the strategic objective.

Some additional questions that could possibly be considered for further study by Mercy Corps are listed below and reveal the potential of the model for clarifying project objectives.

- 1- Considering the centrality of *political opportunism* and *youth dependence on violence* to the achievement of fundamental objectives, should these means-ends objectives be prioritized over other objectives?
- 2- The fundamental objective *emergency response* is affected by two means objectives: *police activities* and *humanitarian response*. However, a higher level of *humanitarian response* is likely to have a greater impact on *emergency response* than a higher level of *police activities*. Why?
- 3- Out of the three activities within the network highlighted in figure 5.1, *educate on democracy* is the most important since a high achievement on *education on democracy* leads to a utility of 0.635 on the strategic objective as compared to *targeted economic development* which has an impact of 0.56 and *PR campaign*, 0.54. Should *education on democracy* receive priority over other activities?
- 4- The activity *educate on democracy* links to two means objectives: *reducing political party opportunism* and *police activities*, and then, through these means objectives to two fundamental objectives, *address root causes of post electoral violence* and *emergency response*. Since addressing root causes of post election violence carries more weight on the utility of the strategic objective, should the activity *educate on democracy* prioritize the objective *political party opportunism* over *police activities*?
- 5- The activity *educate on democracy* is crucial to *reducing political party opportunism* and the activity *targeted economic development* is important if *youth dependence on violence*

is to be reduced. But the question is, can Mercy Corps deliver on these two important activities? Political culture is largely shaped by domestic factors; to what extent can Mercy Corps change it? Likewise, economic development also appears to be a domestic policy issue which could be difficult to manipulate by an external actor like Mercy Corps.

## 5.2 Impact of District Peace Committees' capability (Analysis –II)

Building the capability of District Peace Committees emerged as another important objective. Table 5.2 and figure 5.2 show the important activities and means objectives connected to *DPC's capability*. A brief discussion of this part of the model is provided below.

### 5.2.1 Main features of the network

- 1- A *high* value of *DPC's capability* leads to the strategic objective value of 0.65.
- 2- *DPC's capability* is linked to only two fundamental objectives: *emergency response* and *building sustainable peace mechanisms* (compare with *reducing political party opportunism*).
- 3- The network highlighted below is not connected to the network in Analysis-I except through the node *investigation*. Through *investigation*, the two networks then affect the fundamental objective *reconciliation lessons and recommendations*.
- 4- There are three activities in the network: a) *hotlines or SMS*; b) *creating database of past events*; and c) *identify community leaders*.

### 5.2.2 Implications for project managers

- 1- The activity *identify community leaders* feeds into two means objectives. First, it links to *conflict resolution training* and then goes through *DPC's capability* to impact two fundamental objectives, *emergency response* and *building sustainable peace mechanisms*. Second, it goes through *creating district dialogue* and ultimately leads to the fundamental objective, *reconciliation lessons and recommendations*. Of these two means objectives, the first, *conflict resolution training* appears to be more important since it has a greater effect on the strategic objective (see above table, strategic objective value of 0.65) as compared to *creating district dialogue* (strategic objective value of 0.58). Should Mercy Corps prioritize *conflict resolution training* over *creating district dialogue*?





working on *early warning* can frequently interact with the team working on *notifications*. This could ensure more cohesion among the disparate activities in the two parts of the network.

- 3- Activities *hotlines or SMS* and *creating database of past events* appear less important as compared to the activity *identify community leaders* (see Appendix D; the latter has an impact of above 0.6 on the strategic objective whereas the former’s impact on the strategic objective is less than 0.6). Should Mercy Corps prioritize the latter activity then?

### 5.3 Metrics

Although Mercy Corps was not consulted in designing the metrics, a table of possible important metrics is being presented below for academic purposes. The table shows the metrics in direct relation to the activities or the objectives that they measure. The last column of the table shows the effect of a high achievement on the metrics on the utility of the target strategic objective, *sustainable peace*. The table shows that high performance on three metrics could have a significant impact on the strategic objective. These are: *percentage of people provided shelter*, *percentage of people provided medical assistance*; and *percentage of people rehabilitated*. All these three metrics highlight the importance of effective post-election response to violence, for example, through the means objectives *police activities* and *humanitarian response*.

**Table 5.3: Important metrics**

Seq.	Metric	Relation to	Target
1.	Number of police patrols	Means: police activity	0.60
2.	Percentage of affected people provided shelter	-do-	0.63
3.	No. of people reached through USG reconciliation projects	Activity: educate on democracy	0.60
4.	Percent Increase in women leaders in DPCs	Means: DPC's capability	0.62
5.	USG funded peace building activities	Activity: educate on democracy	0.60
6.	No. of people reached through quick-impact reconciliation projects	-do-	0.60
7.	Stories of non-violence highlighted through media or talking circles	-do-	0.60
8.	Percentage of affected people provided medical assistance	Means: humanitarian response	0.63
9.	Percentage of affected people rehabilitated	-do-	0.63
10	No. of violent events	Means: violent events	0.60
11	No. of people rendered homeless	-do-	0.60
12	No. of people killed	-do-	0.60

## 6.0 Concluding remarks

Evaluation of qualitative outcomes through quantitative means will always remain problematic. The present article has demonstrated how value-focused thinking and GeNIe can be used for measurement of complex operations. It can be argued that this technique is also far from perfect as it relies on value judgments for assigning weights to project objectives and activities. The counter-argument is that even a rough quantification of project outcomes at various stages of the project can help tremendously in the decision-making process. For example, in the LEAP model above, some activities emerged as more important as compared to others. Hence, these activities could be prioritized and/or allocated more resources than the activities that have a relatively weaker impact on the strategic objective. Likewise, if progress on certain activities is not yielding a corresponding benefit on the strategic objective, the model allows the managers to review their priorities and divert resources into other areas.

An important contribution of using GeNIe for value-focused thinking lies in providing the project managers with a mental model of complex operations in which multiple and disparate project objectives and activities are connected in a visual network of relationships. The model for LEAP, for instance, illuminated the link between political party opportunism and youth violence. The events of the 2013 Kenyan election have provided a validation of this visual link since Mercy Corps has attributed a reduction in incidents of violence in the latest election to the fact that a large majority of Kenyan youth refused to be exploited by the political parties.

The present model was constructed when the LEAP project was nearing its completion stage. But if constructed at the project planning stage, such models can help design projects. They can serve as templates to build different project objectives; link the objectives; clarify project scope; connect activities to the means objectives; allocate resources to activities in order of their importance; and design appropriate metrics. They can also guide with such details as coordination mechanisms within projects. In the LEAP model, for example, the strong visual and quantitative link between politics, youth and violence indicates the need for a higher level of coordination among people working on reducing political party opportunism and those working on reducing youth dependence on violence.

However, despite all the merits of the modeling process described above, value-focused thinking can neither claim to capture all the freak variables that frustrate project managers in the field nor guarantee the achievement of strategic objectives. The worth of value-focused thinking

should perhaps not even be judged on the basis of such short-comings – even with the best of efforts the GeNIe models, for example, will only remain intelligent guesses – but on the immense clarity the approach brings to the thought process for management of complex operations. This, in turn, could increase the probability that, using Keeney’s words, you will be brought ‘much closer to getting all of what you want.’<sup>20</sup>

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## Notes

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<sup>1</sup> Keeney 1992, 4-6.

<sup>2</sup> Mercy Corps 2011, 1.

<sup>3</sup> Economist Intelligence Unit (EIU) 2013, 3.

<sup>4</sup> U.S. State Department 2013, par. 6.

<sup>5</sup> United States Agency for International Development (USAID) 2013, 1.

<sup>6</sup> U.S. State Department 2013, par. 2.

<sup>7</sup> Mercy Corps 2008, 1. (Proprietary information)

<sup>8</sup> Keeney 1992, 4.

<sup>9</sup> Ibid., 23-26.

<sup>10</sup> Ibid., 26-28.

<sup>11</sup> Ibid., 130 -131.

<sup>12</sup> GeNIe 2013, par.1.

<sup>13</sup> Charnaik 1991, 51.

<sup>14</sup> Ibid., 52.

<sup>15</sup> Wordle 2013. Available: <http://www.wordle.net/>

<sup>16</sup> Keeney 1992, 33.

<sup>17</sup> Ibid., 78.

<sup>18</sup> Ibid., 66.

<sup>19</sup> Ibid., 78.

<sup>20</sup> Ibid, 4.

Figure: Model in GeNIe displaying the network of relationships among strategic, fundamental and means objectives, and metrics (icon display)

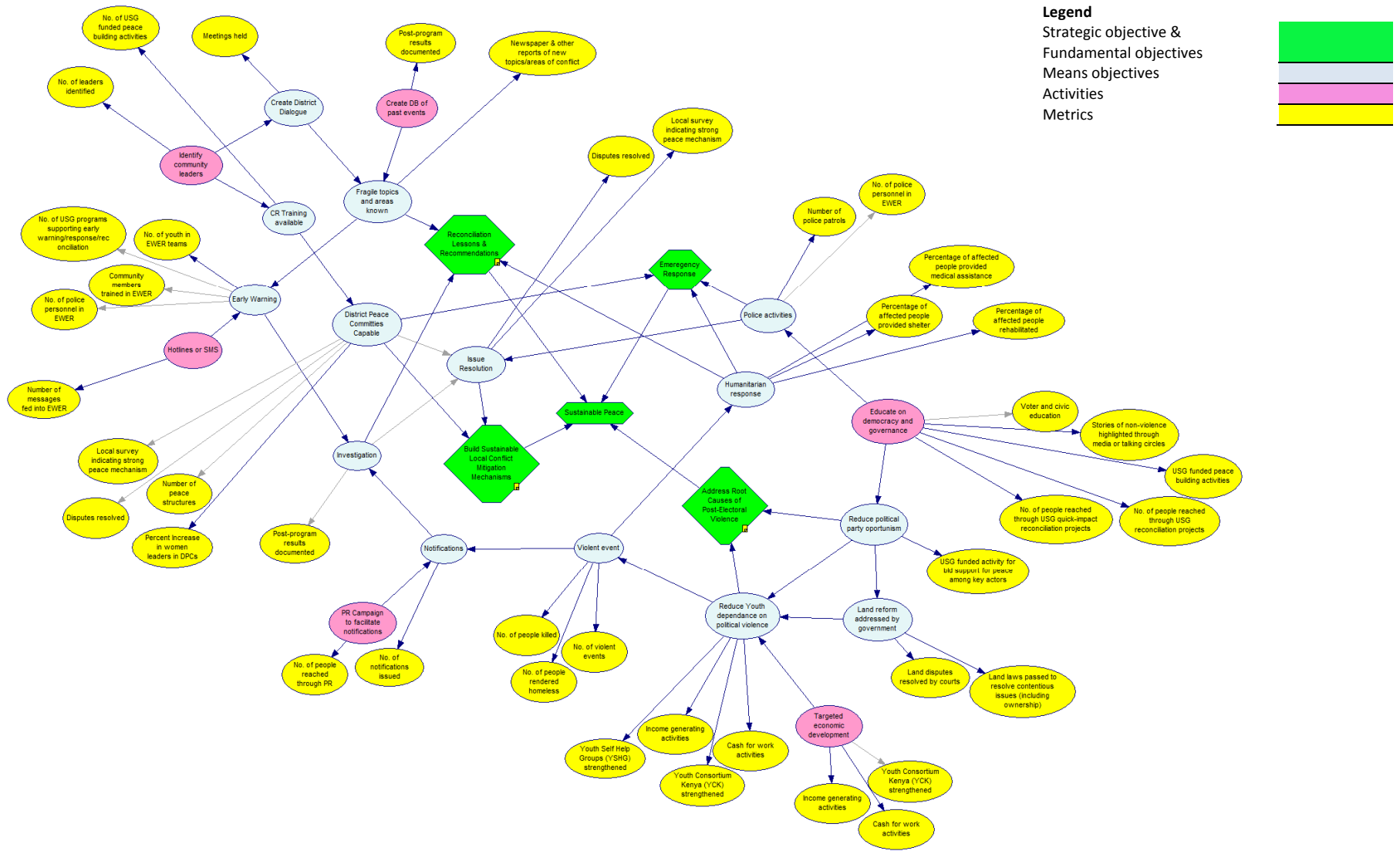




Table: Base values for nodes

Seq.	Node ID	Node Name	Node Type	State	State Value
1	A1_2_1	Targeted economic development	Action	Sustainable	0.5
2	A1_2_1	Targeted economic development	Action	Unsustainable	0.375
3	A1_2_1	Targeted economic development	Action	Misdirected	0.125
4	A1_1_1	Educate on democracy and governance	Action	High Participation	0.333
5	A1_1_1	Educate on democracy and governance	Action	Some Participation	0.444
6	A1_1_1	Educate on democracy and governance	Action	Low Participation	0.222
7	M1_1	Reduce political party opportunism	Means	No Opportunism	0.367
8	M1_1	Reduce political party opportunism	Means	Some Opportunism	0.394
9	M1_1	Reduce political party opportunism	Means	Widespread Opportunism	0.239
10	M1_2_1	Land reform addressed by government	Means	Satisfactorily Addressed	0.384
11	M1_2_1	Land reform addressed by government	Means	Partially Addressed	0.367
12	M1_2_1	Land reform addressed by government	Means	Unaddressed	0.249
13	M1_2	Reduce Youth dependence on political violence	Means	Independent	0.643
14	M1_2	Reduce Youth dependence on political violence	Means	Moderately Dependent	0.255
15	M1_2	Reduce Youth dependence on political violence	Means	Highly Dependent	0.103
16	A2_1_1_1_1	Identify community leaders	Action	Fully Identified	0.333
17	A2_1_1_1_1	Identify community leaders	Action	Partially Identified	0.533
18	A2_1_1_1_1	Identify community leaders	Action	Not Identified	0.133
19	M2_1_1_1	CR Training available	Means	Widespread	0.38
20	M2_1_1_1	CR Training available	Means	Some	0.443
21	M2_1_1_1	CR Training available	Means	None	0.177
22	M2_1_1	District Peace Committees Capable	Means	High Capability	0.402
23	M2_1_1	District Peace Committees Capable	Means	Moderate Capability	0.394
24	M2_1_1	District Peace Committees Capable	Means	Low Capability	0.205
25	M3_1	Police activities	Means	Responsive Policing	0.289
26	M3_1	Police activities	Means	Adequate Policing	0.25
27	M3_1	Police activities	Means	Inadequate Policing	0.244
28	M3_1	Police activities	Means	No Policing	0.217
29	M3_2_1	Violent event	Means	No Violence	0.48



30	M3_2_1	Violent event	Means	Little Violence	0.209
31	M3_2_1	Violent event	Means	Moderate Violence	0.182
32	M3_2_1	Violent event	Means	High Violence	0.129
33	M3_2	Humanitarian response	Means	Response	0.534
34	M3_2	Humanitarian response	Means	Some Response	0.209
35	M3_2	Humanitarian response	Means	No Response	0.257
36	A4_2_2_1	PR Campaign to facilitate notifications	Action	Many Reached	0.462
37	A4_2_2_1	PR Campaign to facilitate notifications	Action	Some Reached	0.385
38	A4_2_2_1	PR Campaign to facilitate notifications	Action	Few Reached	0.154
39	M4_2_2	Notifications	Means	Notification	0.591
40	M4_2_2	Notifications	Means	No Notification	0.409
41	A4_2_1_1	Hotlines or SMS	Action	Functional	0.8
42	A4_2_1_1	Hotlines or SMS	Action	Not Functional	0.2
43	M4_1_1	Create District Dialogue	Means	DD Operational	0.38
44	M4_1_1	Create District Dialogue	Means	DD Created	0.443
45	M4_1_1	Create District Dialogue	Means	DD Not Created	0.177
46	A4_1_1	Create DB of past events	Action	Exhaustive DB	0.308
47	A4_1_1	Create DB of past events	Action	Partial DB	0.462
48	A4_1_1	Create DB of past events	Action	Empty DB	0.154
49	A4_1_1	Create DB of past events	Action	No DB	0.077
50	M4_1	Fragile topics and areas known	Means	Full Understanding	0.58
51	M4_1	Fragile topics and areas known	Means	Weak Understanding	0.246
52	M4_1	Fragile topics and areas known	Means	No Understanding	0.175
53	M4_2_1	Early Warning	Means	Advanced	0.547
54	M4_2_1	Early Warning	Means	Timely	0.225
55	M4_2_1	Early Warning	Means	Late	0.228
56	M4_2	Investigation	Means	Full	0.443
57	M4_2	Investigation	Means	Partial	0.238
58	M4_2	Investigation	Means	None	0.319
59	M2_1	Issue Resolution	Means	Resolved	0.423
60	M2_1	Issue Resolution	Means	Partial Resolution	0.423
61	M2_1	Issue Resolution	Means	Unresolved	0.154
62	F2	Build Sustainable Local Conflict Mitigation Mechanisms	Fundamental	Value	0.598

63	F4	Reconciliation Lessons & Recommendations	Fundamental	Value	0.455
64	F1	Address Root Causes of Post-Electoral Violence	Fundamental	Value	0.654
65	F3	Emergency Response	Fundamental	Value	0.471
66	S	Sustainable Peace	Fundamental	Value	0.547
67	X3_1_1	Number of police patrols	Metric	Persistent Presence	0.388
68	X3_1_1	Number of police patrols	Metric	Around Sometime	0.288
69	X3_1_1	Number of police patrols	Metric	Not Often	0.324
70	X3_2_2	Percentage of affected people provided shelter	Metric	Ninety To Hundred	0.482
71	X3_2_2	Percentage of affected people provided shelter	Metric	Sixty To Ninety	0.265
72	X3_2_2	Percentage of affected people provided shelter	Metric	Below Sixty	0.253
73	X2_1_1_1	Number of peace structures	Metric	Thirteen Or Fourteen	0.8
74	X2_1_1_1	Number of peace structures	Metric	Eight To Twelve	0.15
75	X2_1_1_1	Number of peace structures	Metric	Less Than Eight	0.05
76	X1_2_4	Cash for work activities	Metric	Thirty To Forty	0.57
77	X1_2_4	Cash for work activities	Metric	Twenty To Thirty	0.29
78	X1_2_4	Cash for work activities	Metric	Less Than Thirty	0.14
79	X4_2_1_1	No. of youth in EWER teams	Metric	Three Eighty To Four Twenty	0.494
80	X4_2_1_1	No. of youth in EWER teams	Metric	Two Hundred To Three Eighty	0.274
81	X4_2_1_1	No. of youth in EWER teams	Metric	Less Than Two Hundred	0.232
82	X1_1_5	No. of people reached through USG reconciliation projects	Metric	Five To Six Thousand	0.367
83	X1_1_5	No. of people reached through USG reconciliation projects	Metric	Three To Five Thousand	0.394
84	X1_1_5	No. of people reached through USG reconciliation projects	Metric	Less Than Three Thousand	0.239
85	X2_1_1_2	Percent Increase in women leaders in DPCs	Metric	Fifteen To Twenty Percent	0.41
86	X2_1_1_2	Percent Increase in women leaders in DPCs	Metric	Ten To Fifteen Percent	0.367
87	X2_1_1_2	Percent Increase in women leaders in DPCs	Metric	Less Than Ten Percent	0.223
88	X1_1_2	Voter and civic education	Metric	Thirteen To Fifteen Thousand	0.8
89	X1_1_2	Voter and civic education	Metric	Eight To Thirteen Thousand	0.15
90	X1_1_2	Voter and civic education	Metric	Less Than Eight Thousand	0.05
91	X1_1_4	USG funded peace building activities	Metric	Ninety To Hundred Activities	0.367
92	X1_1_4	USG funded peace building activities	Metric	Sixty To Ninety Activities	0.394
93	X1_1_4	USG funded peace building activities	Metric	Less Than Sixty Activities	0.239
94	X4_2_1_3	Community members trained in EWER	Metric	Four To Five Hundred	0.8
95	X4_2_1_3	Community members trained in EWER	Metric	Two To Four Hundred	0.15

96	X4_2_1_3	Community members trained in EWER	Metric	Less Than Two Hundred	0.05
97	X1_1_1	USG funded activity for building support for peace among key actors	Metric	Twelve To Fourteen Activities	0.578
98	X1_1_1	USG funded activity for building support for peace among key actors	Metric	Eight To Twelve Activities	0.422
99	X1_1_6	No. of people reached through USG quick-impact reconciliation projects	Metric	Five To Six Thousand	0.367
100	X1_1_6	No. of people reached through USG quick-impact reconciliation projects	Metric	Three To Five Thousand	0.394
101	X1_1_6	No. of people reached through USG quick-impact reconciliation projects	Metric	Less Than Three Thousand	0.239
102	X1_1_3	Stories of non-violence highlighted through media or talking circles	Metric	Fifteen To Twenty	0.367
103	X1_1_3	Stories of non-violence highlighted through media or talking circles	Metric	Ten To Fifteen	0.394
104	X1_1_3	Stories of non-violence highlighted through media or talking circles	Metric	Less Than Ten	0.239
105	X4_1_1_1	Meetings held	Metric	Very Frequently	0.402
106	X4_1_1_1	Meetings held	Metric	Frequently	0.394
107	X4_1_1_1	Meetings held	Metric	Infrequently	0.205
108	X4_2_2_2	No. of people reached through PR	Metric	High Number Of People	0.454
109	X4_2_2_2	No. of people reached through PR	Metric	Medium Number	0.362
110	X4_2_2_2	No. of people reached through PR	Metric	Low Number	0.185
111	X4_2_1_5	Number of messages fed into EWER	Metric	High	0.65
112	X4_2_1_5	Number of messages fed into EWER	Metric	Medium	0.15
113	X4_2_1_5	Number of messages fed into EWER	Metric	Few	0.2
114	X1_2_1_1	Land disputes resolved by courts	Metric	Seventy Percent Or More	0.393
115	X1_2_1_1	Land disputes resolved by courts	Metric	Thirty To Seventy Percent	0.352
116	X1_2_1_1	Land disputes resolved by courts	Metric	Less Than Thirty Percent	0.255
117	X1_2_1_2	Land laws passed to resolve contentious issues including ownership	Metric	Yes	0.577
118	X1_2_1_2	Land laws passed to resolve contentious issues including ownership	Metric	No	0.423
119	X1_2_1	Youth Self Help Groups (YSHG) strengthened	Metric	YSHG Very Strong	0.57
120	X1_2_1	Youth Self Help Groups (YSHG) strengthened	Metric	YSHG Mildly Strong	0.29
121	X1_2_1	Youth Self Help Groups (YSHG) strengthened	Metric	YSHG Weak	0.14
122	X4_2_1	Post-program results documented	Metric	Detailed Documentation	0.8
123	X4_2_1	Post-program results documented	Metric	Partial Documentation	0.15
124	X4_2_1	Post-program results documented	Metric	Little Documentation	0.05
125	X4_2_1_4	No. of police personnel in EWER	Metric	Hundred To One Twenty	0.8
126	X4_2_1_4	No. of police personnel in EWER	Metric	Sixty To Hundred	0.15
127	X4_2_1_4	No. of police personnel in EWER	Metric	Less Than Sixty	0.05
128	X4_2_1_2	No. of USG programs supporting early warning/response/reconciliation	Metric	Fifty To Sixty	0.8

129	X4_2_1_2	No. of USG programs supporting early warning/response/reconciliation	Metric	Thirty To Fifty	0.15
130	X4_2_1_2	No. of USG programs supporting early warning/response/reconciliation	Metric	Less Than Thirty	0.05
131	X4_2_2_1	No. of notifications issued	Metric	Ninety To Hundred Percent	0.493
132	X4_2_2_1	No. of notifications issued	Metric	Sixty To Ninety Percent	0.15
133	X4_2_2_1	No. of notifications issued	Metric	Less Than Sixty Percent	0.357
134	X3_2_1	Percentage of affected people provided medical assistance	Metric	Ninety To Hundred	0.482
135	X3_2_1	Percentage of affected people provided medical assistance	Metric	Sixty To Hundred	0.265
136	X3_2_1	Percentage of affected people provided medical assistance	Metric	Below Sixty	0.253
137	X2_1_1	Disputes resolved	Metric	Thirty-five To Forty Disputes	0.431
138	X2_1_1	Disputes resolved	Metric	Twenty-five To Thirty-four Disputes	0.383
139	X2_1_1	Disputes resolved	Metric	Less Than Twenty-five Disputes	0.186
140	X2_1_2	Local survey indicating strong peace mechanism	Metric	Twenty To Twenty-five Percent	0.431
141	X2_1_2	Local survey indicating strong peace mechanism	Metric	Fifteen To Nineteen Percent	0.383
142	X2_1_2	Local survey indicating strong peace mechanism	Metric	Less Than Fifteen Percent	0.186
143	X4_1_1	Newspaper and other reports of new topics-areas of conflict	Metric	New Subjects Or Areas Of Conflict Not Observed	0.522
144	X4_1_1	Newspaper and other reports of new topics-areas of conflict	Metric	Few New Subjects Or Areas Of Conflict Observed	0.285
145	X4_1_1	Newspaper and other reports of new topics-areas of conflict	Metric	Several New Subjects Or Areas Of Conflict Observed	0.193
146	X2_1_1_1_1	No. of USG funded peace building activities	Metric	Ninety To Hundred Activities	0.402
147	X2_1_1_1_1	No. of USG funded peace building activities	Metric	Sixty To Ninety Activities	0.394
148	X2_1_1_1_1	No. of USG funded peace building activities	Metric	Less Than Sixty Activities	0.205
149	X2_1_1_1_2	No. of leaders identified	Metric	Almost All	0.38
150	X2_1_1_1_2	No. of leaders identified	Metric	Several	0.443
151	X2_1_1_1_2	No. of leaders identified	Metric	Few	0.177
152	X3_3_3	Percentage of affected people rehabilitated	Metric	Ninety To Hundred	0.482
153	X3_3_3	Percentage of affected people rehabilitated	Metric	Sixty To Hundred	0.265
154	X3_3_3	Percentage of affected people rehabilitated	Metric	Below Sixty	0.253
155	X3_2_1_3	No. of violent events	Metric	Low	0.534
156	X3_2_1_3	No. of violent events	Metric	Medium	0.209
157	X3_2_1_3	No. of violent events	Metric	High	0.257
158	X3_2_1_2	No. of people rendered homeless	Metric	Low	0.534
159	X3_2_1_2	No. of people rendered homeless	Metric	Medium	0.209
160	X3_2_1_2	No. of people rendered homeless	Metric	High	0.257
161	X3_2_1_1	No. of people killed	Metric	Low	0.534

162	X3_2_1_1	No. of people killed	Metric	Medium	0.209
163	X3_2_1_1	No. of people killed	Metric	High	0.257
164	X1_2_2	Income generating activities	Metric	Thirty To Forty	0.57
165	X1_2_2	Income generating activities	Metric	Twenty To Thirty	0.29
166	X1_2_2	Income generating activities	Metric	Less Than Thirty	0.14
167	X1_2_3	Youth Consortium Kenya (YCK) strengthened	Metric	Very Strong	0.57
168	X1_2_3	Youth Consortium Kenya (YCK) strengthened	Metric	Mildly Strong	0.29
169	X1_2_3	Youth Consortium Kenya (YCK) strengthened	Metric	Weak	0.14

**Table: High and low swing weights for means objectives, activities, or metrics and corresponding values for strategic and fundamental objectives**

S: Strategic objective (sustainable peace)  
 F1: Fundamental objective -1 (address root-causes of post-electoral violence)  
 F2: Fundamental objective -2 (build sustainable conflict resolution mechanisms)  
 F3: Fundamental objective -3 (emergency response)  
 F4: Fundamental objective -4 (reconciliation lessons and recommendations)

**Legend**  
 Strategic objective value 0.6 or above & corresponding difference  
 Fundamental objective difference between high and low values 0.35 or above



Seq.	State	Means Objective, Activity, or Metric Node	Type	Target					Difference				
				S	F1	F2	F3	F4	S	F1	F2	F3	F4
1	High	Targeted economic development	Action	0.57	0.70	0.60	0.48	0.49	0.09	0.18	0.00	0.03	0.14
1	Low	Targeted economic development	Action	0.48	0.52	0.60	0.45	0.35					
2	High	Educate on democracy and governance	Action	0.64	0.85	0.63	0.56	0.49	0.19	0.43	0.08	0.16	0.06
2	Low	Educate on democracy and governance	Action	0.45	0.41	0.56	0.40	0.42					
3	High	Reduce political party opportunism	Means	0.65	0.93	0.62	0.53	0.50	0.21	0.58	0.05	0.12	0.08
3	Low	Reduce political party opportunism	Means	0.44	0.35	0.57	0.41	0.42					
4	High	Land reform addressed by government	Means	0.62	0.85	0.61	0.51	0.49	0.16	0.42	0.04	0.09	0.07
4	Low	Land reform addressed by government	Means	0.46	0.43	0.58	0.43	0.42					
5	High	Reduce Youth dependence on political violence	Means	0.61	0.80	0.60	0.50	0.55	0.29	0.64	0.01	0.12	0.38
5	Low	Reduce Youth dependence on political violence	Means	0.32	0.16	0.59	0.38	0.16					
6	High	Identify community leaders	Action	0.60	0.65	0.69	0.57	0.48	0.18	0.00	0.28	0.34	0.08
6	Low	Identify community leaders	Action	0.43	0.65	0.41	0.23	0.40					
7	High	CR Training available	Means	0.62	0.65	0.73	0.62	0.47	0.22	0.00	0.38	0.46	0.05
7	Low	CR Training available	Means	0.40	0.65	0.36	0.16	0.42					
8	High	District Peace Committees Capable	Means	0.65	0.65	0.80	0.68	0.47	0.28	0.00	0.50	0.61	0.03
8	Low	District Peace Committees Capable	Means	0.37	0.65	0.30	0.07	0.43					
9	High	Police activities	Means	0.64	0.80	0.65	0.61	0.48	0.17	0.31	0.11	0.23	0.04
9	Low	Police activities	Means	0.46	0.49	0.54	0.38	0.43					
10	High	Violent event	Means	0.64	0.77	0.60	0.52	0.64	0.28	0.39	0.01	0.16	0.56
10	Low	Violent event	Means	0.36	0.38	0.59	0.36	0.08					
11	High	Humanitarian response	Means	0.65	0.73	0.60	0.55	0.74	0.28	0.21	0.00	0.21	0.74
11	Low	Humanitarian response	Means	0.37	0.52	0.60	0.34	0.00					
12	High	PR Campaign to facilitate notifications	Action	0.55	0.65	0.60	0.47	0.46	0.00	0.00	0.00	0.00	0.01

12	Low	PR Campaign to facilitate notifications	Action	0.55	0.65	0.60	0.47	0.45					
13	High	Notifications	Means	0.58	0.69	0.60	0.49	0.53	0.08	0.08	0.00	0.04	0.18
13	Low	Notifications	Means	0.50	0.61	0.60	0.45	0.35					
14	High	Hotlines or SMS	Action	0.55	0.65	0.60	0.47	0.46	0.00	0.00	0.00	0.00	0.01
14	Low	Hotlines or SMS	Action	0.55	0.65	0.60	0.47	0.45					
15	High	Create District Dialogue	Means	0.59	0.65	0.66	0.54	0.49	0.12	0.00	0.17	0.20	0.11
15	Low	Create District Dialogue	Means	0.47	0.65	0.49	0.33	0.38					
16	High	Create DB of past events	Action	0.56	0.65	0.60	0.47	0.49	0.02	0.00	0.00	0.00	0.10
16	Low	Create DB of past events	Action	0.53	0.65	0.60	0.47	0.39					
17	High	Fragile topics and areas known	Means	0.58	0.65	0.61	0.49	0.57	0.09	0.00	0.05	0.06	0.27
17	Low	Fragile topics and areas known	Means	0.49	0.65	0.56	0.43	0.30					
18	High	Early Warning	Means	0.56	0.65	0.60	0.48	0.49	0.03	0.00	0.01	0.01	0.09
18	Low	Early Warning	Means	0.53	0.65	0.59	0.47	0.40					
19	High	Investigation	Means	0.58	0.68	0.60	0.48	0.54	0.06	0.05	0.00	0.03	0.19
19	Low	Investigation	Means	0.51	0.63	0.60	0.46	0.36					
20	High	Issue Resolution	Means	0.60	0.67	0.78	0.49	0.46	0.17	0.11	0.46	0.10	0.02
20	Low	Issue Resolution	Means	0.43	0.56	0.32	0.39	0.44					
26	High	Number of police patrols	Metric	0.60	0.75	0.63	0.55	0.47	0.11	0.19	0.08	0.15	0.03
26	Low	Number of police patrols	Metric	0.49	0.55	0.56	0.40	0.44					
27	High	Percentage of affected people provided shelter	Metric	0.63	0.71	0.60	0.53	0.68	0.22	0.16	0.00	0.16	0.58
27	Low	Percentage of affected people provided shelter	Metric	0.41	0.55	0.60	0.37	0.10					
28	High	Number of peace structures	Metric	0.55	0.65	0.60	0.47	0.46	0.00	0.00	0.00	0.00	0.00
28	Low	Number of peace structures	Metric	0.55	0.65	0.60	0.47	0.46					
29	High	Cash for work activities	Metric	0.60	0.76	0.60	0.49	0.52	0.18	0.40	0.01	0.08	0.24
29	Low	Cash for work activities	Metric	0.42	0.37	0.59	0.42	0.28					
30	High	No. of youth in EWER teams	Metric	0.56	0.65	0.60	0.47	0.48	0.02	0.00	0.01	0.01	0.07
30	Low	No. of youth in EWER teams	Metric	0.54	0.65	0.60	0.47	0.42					
31	High	No. of people reached through USG reconciliation projects	Metric	0.60	0.78	0.62	0.53	0.47	0.13	0.30	0.05	0.11	0.04
31	Low	No. of people reached through USG reconciliation projects	Metric	0.48	0.48	0.57	0.42	0.43					
32	High	Percent Increase in women leaders in DPCs	Metric	0.62	0.65	0.74	0.62	0.46	0.20	0.00	0.35	0.43	0.02
32	Low	Percent Increase in women leaders in DPCs	Metric	0.42	0.65	0.39	0.20	0.44					
33	High	Voter and civic education	Metric	0.55	0.65	0.60	0.47	0.46	0.00	0.00	0.00	0.00	0.00
33	Low	Voter and civic education	Metric	0.55	0.65	0.60	0.47	0.46					

34	High	USG funded peace building activities	Metric	0.60	0.78	0.62	0.53	0.47	0.13	0.30	0.05	0.11	0.04
34	Low	USG funded peace building activities	Metric	0.48	0.48	0.57	0.42	0.43					
35	High	Community members trained in EWER	Metric	0.55	0.65	0.60	0.47	0.46	0.00	0.00	0.00	0.00	0.00
35	Low	Community members trained in EWER	Metric	0.55	0.65	0.60	0.47	0.46					
36	High	USG funded activity for building support for peace among key actors	Metric	0.58	0.74	0.61	0.49	0.47	0.07	0.20	0.02	0.04	0.03
36	Low	USG funded activity for building support for peace among key actors	Metric	0.51	0.54	0.59	0.45	0.44					
37	High	No. of people reached through USG quick-impact reconciliation projects	Metric	0.60	0.78	0.62	0.53	0.47	0.13	0.30	0.05	0.11	0.04
37	Low	No. of people reached through USG quick-impact reconciliation projects	Metric	0.48	0.48	0.57	0.42	0.43					
38	High	Stories of non-violence highlighted through media or talking circles	Metric	0.60	0.78	0.62	0.53	0.47	0.13	0.30	0.05	0.11	0.04
38	Low	Stories of non-violence highlighted through media or talking circles	Metric	0.48	0.48	0.57	0.42	0.43					
39	High	Meetings held	Metric	0.57	0.65	0.64	0.52	0.48	0.08	0.00	0.11	0.14	0.07
39	Low	Meetings held	Metric	0.50	0.65	0.53	0.38	0.41					
40	High	No. of people reached through PR	Metric	0.55	0.65	0.60	0.47	0.46	0.00	0.00	0.00	0.00	0.00
40	Low	No. of people reached through PR	Metric	0.55	0.65	0.60	0.47	0.45					
41	High	Number of messages fed into EWER	Metric	0.55	0.65	0.60	0.47	0.46	0.00	0.00	0.00	0.00	0.01
41	Low	Number of messages fed into EWER	Metric	0.55	0.65	0.60	0.47	0.45					
42	High	Land disputes resolved by courts	Metric	0.60	0.79	0.61	0.50	0.48	0.11	0.31	0.03	0.06	0.05
42	Low	Land disputes resolved by courts	Metric	0.49	0.48	0.58	0.44	0.43					
43	High	Land laws passed to resolve contentious issues including ownership	Metric	0.57	0.72	0.60	0.48	0.47	0.06	0.15	0.01	0.03	0.02
43	Low	Land laws passed to resolve contentious issues including ownership	Metric	0.51	0.56	0.59	0.45	0.44					
44	High	Youth Self Help Groups (YSHG) strengthened	Metric	0.60	0.76	0.60	0.49	0.52	0.18	0.40	0.01	0.08	0.24
44	Low	Youth Self Help Groups (YSHG) strengthened	Metric	0.42	0.37	0.59	0.42	0.28					
45	High	Post-program results documented	Metric	0.55	0.65	0.60	0.47	0.46	0.00	0.00	0.00	0.00	0.00
45	Low	Post-program results documented	Metric	0.55	0.65	0.60	0.47	0.46					
46	High	No. of police personnel in EWER	Metric	0.55	0.65	0.60	0.47	0.46	0.00	0.00	0.00	0.00	0.00
46	Low	No. of police personnel in EWER	Metric	0.55	0.65	0.60	0.47	0.46					
47	High	No. of USG programs supporting early warning/response/reconciliation	Metric	0.55	0.65	0.60	0.47	0.46	0.00	0.00	0.00	0.00	0.00
47	Low	No. of USG programs supporting early warning/response/reconciliation	Metric	0.55	0.65	0.60	0.47	0.46					
48	High	No. of notifications issued	Metric	0.58	0.68	0.60	0.49	0.52	0.07	0.07	0.00	0.04	0.16
48	Low	No. of notifications issued	Metric	0.51	0.61	0.60	0.45	0.36					
49	High	Percentage of affected people provided medical assistance	Metric	0.63	0.71	0.60	0.53	0.68	0.22	0.16	0.00	0.16	0.58
49	Low	Percentage of affected people provided medical assistance	Metric	0.41	0.55	0.60	0.37	0.10					
50	High	Disputes resolved	Metric	0.59	0.67	0.72	0.48	0.46	0.11	0.07	0.30	0.06	0.01



50	Low	Disputes resolved	Metric	0.47	0.60	0.42	0.42	0.45					
51	High	Local survey indicating strong peace mechanism	Metric	0.59	0.67	0.72	0.48	0.46	0.11	0.07	0.30	0.06	0.01
51	Low	Local survey indicating strong peace mechanism	Metric	0.47	0.60	0.42	0.42	0.45					
52	High	Newspaper and other reports of new topics-areas of conflict	Metric	0.57	0.65	0.61	0.49	0.54	0.07	0.00	0.04	0.05	0.20
52	Low	Newspaper and other reports of new topics-areas of conflict	Metric	0.51	0.65	0.57	0.44	0.34					
53	High	No. of USG funded peace building activities	Metric	0.60	0.65	0.69	0.57	0.47	0.15	0.00	0.25	0.30	0.03
53	Low	No. of USG funded peace building activities	Metric	0.45	0.65	0.44	0.27	0.43					
54	High	No. of leaders identified	Metric	0.58	0.65	0.66	0.54	0.47	0.10	0.00	0.17	0.20	0.05
54	Low	No. of leaders identified	Metric	0.48	0.65	0.49	0.33	0.42					
55	High	Percentage of affected people rehabilitated	Metric	0.63	0.71	0.60	0.53	0.68	0.22	0.16	0.00	0.16	0.58
55	Low	Percentage of affected people rehabilitated	Metric	0.41	0.55	0.60	0.37	0.10					
56	High	No. of violent events	Metric	0.61	0.73	0.60	0.51	0.59	0.18	0.21	0.00	0.11	0.39
56	Low	No. of violent events	Metric	0.43	0.52	0.60	0.40	0.20					
57	High	No. of people rendered homeless	Metric	0.61	0.73	0.60	0.51	0.59	0.18	0.21	0.00	0.11	0.39
57	Low	No. of people rendered homeless	Metric	0.43	0.52	0.60	0.40	0.20					
58	High	No. of people killed	Metric	0.61	0.73	0.60	0.51	0.59	0.18	0.21	0.00	0.11	0.39
58	Low	No. of people killed	Metric	0.43	0.52	0.60	0.40	0.20					
59	High	Income generating activities	Metric	0.60	0.76	0.60	0.49	0.52	0.18	0.40	0.01	0.08	0.24
59	Low	Income generating activities	Metric	0.42	0.37	0.59	0.42	0.28					
60	High	Youth Consortium Kenya (YCK) strengthened	Metric	0.60	0.76	0.60	0.49	0.52	0.18	0.40	0.01	0.08	0.24
60	Low	Youth Consortium Kenya (YCK) strengthened	Metric	0.42	0.37	0.59	0.42	0.28					