Forecast based action in Kitui, Kenya: a case study
This report was co-developed by Kenya Red Cross (KRCS) and British Red Cross (BRC). KRCS were represented by Halima Saado and Januarius Obongita with support from Eva Wanjiku. BRC were represented by Sarah Barr and Caroline Zastiral. All representatives wrote sections of this case study, which was collated and edited by Sarah Barr. Elijah Muli, Safia Verjee and Belinda Korir helped make the study possible and provided a wealth of information during the research. Thanks also to Augustine Kisui for enabling the field research and to Matthias Muliro and the volunteers for their critical support with facilitating, documenting and translating the focus groups. Finally, Karen Peachey suggested this case study and brought the research team together.

The cover photograph was taken in Katutu, Kitui on December 2nd 2015 by John Bundi, KRCS Multimedia Assistant. The photograph is of Dorothy Musyoka Kota, who participated in this intervention and provided her consent for this image to be taken.
<table>
<thead>
<tr>
<th>ACRONYMS</th>
<th>DESCRIPTION</th>
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<tbody>
<tr>
<td>ASI</td>
<td>Agricultural Stress Index</td>
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<tr>
<td>BRC</td>
<td>British Red Cross</td>
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<tr>
<td>DFID</td>
<td>Department for International Development</td>
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<td>DM</td>
<td>Disaster Management</td>
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<td>DRM</td>
<td>Disaster Risk Management</td>
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<td>EOC</td>
<td>Emergency Operations Centre</td>
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<td>FbF</td>
<td>Forecast Based Financing</td>
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<td>FGD</td>
<td>Focus Group Discussion</td>
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<td>IPC</td>
<td>Integrated Food Security Phase Classification</td>
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<td>KES</td>
<td>Kenyan Shillings</td>
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<td>KII</td>
<td>Key Informant Interviews</td>
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<td>KMED</td>
<td>Kenya Meteorological Department</td>
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<td>KRCS</td>
<td>Kenya Red Cross Society</td>
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<td>LTA</td>
<td>Long Term Average</td>
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<tr>
<td>MAM</td>
<td>March April May</td>
</tr>
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<td>MoA</td>
<td>Ministry of Agriculture</td>
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<td>NDMA</td>
<td>National Drought Management Authority</td>
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<td>OND</td>
<td>October November December</td>
</tr>
<tr>
<td>SACCO</td>
<td>Savings and Credit Cooperative Organization</td>
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<tr>
<td>SOP</td>
<td>Standard Operating Procedure</td>
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1. INTRODUCTION

In 2015, models by metrological agencies globally, including the Kenya Metrological Department (KMED), predicted a 90% probability of El Niño conditions during the "short rains" of the October, November, December (OND) season. The forecasts predicted above average rainfall in parts of Kenya and an approximate 80% chance of the El Niño conditions lasting into early 2016. The impacts were expected to vary geographically, with some areas experiencing seasonal flooding and others experiencing just good rainfall for agricultural production.

Based on these predictions, the Kenya Red Cross Society (KRCS) implemented an El Niño preparedness and response project that included flood preparedness in 16 at risk counties. Another component was a forecast-based intervention in Kitui County, which aimed to harness the potentially positive impacts of the enhanced El Niño rains in communities who frequently experience drought and food insecurity. The rationale was that a potentially bumper harvest could help address food insecurity and enable families to cope better with the risk of a drought in the following season which, even in a normal season, would be dry and might be worsened by a La Niña effect. The main element of the intervention was the distribution of high quality hybrid maize seeds to 21,035 households in Mwingi Central, Mwingi West and Kitui West sub-counties in October 2015. Households were also provided with training in post-harvest management and marketing, to ensure that the harvest was stored properly for future consumption or trade.

Post-harvest meetings with farmers conducted by the Ministry of Agriculture (MoA) and KRCS in April and May 2016 indicated that farmers had gained a better than normal harvest due to the enhanced rains during the OND season. Building on this dialogue, this review gathered farmer and stakeholder feedback on what worked and what did not work well, aiming to draw out lessons and recommendations to inform future work in forecast based programming in Kenya and beyond. The study also captured KRCS decision-making and management processes, with a view to identifying areas for improvement. This report was partly driven by the KRCS Disaster Management (DM) Strengthening Initiative, where one objective is to increase sharing and learning from KRCS preparedness and response operations. The review was jointly researched by KRCS and British Red Cross (BRC) in May-June 2016.

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1 El Niño and La Niña are terms which describe the biggest fluctuation in the Earth's climate system. The fluctuation sees changes in the sea-surface temperature of the tropical Pacific Ocean which occur on average every three to seven years and can have consequences across the globe. El Niño refers to warmer-than-average periods in the equatorial Pacific, and the opposite is the cooler than normal La Niña events. While every El Niño is different, it can cause extensive problems and disruption when some areas get too much or too little rainfall, often in a reversal of their usual weather pattern.
2. **FORECAST BASED ACTION**

2.1. **Concept and Definitions**

As an action motivated by a forecast, the Kitui intervention was unusual in its rationale and approach. In the field of disaster risk management, it is not easily defined as it combines a number of different concepts. The Red Cross/ Red Crescent Movement works across the Disaster Risk Management (DRM) cycle, from preparedness to response to reducing disaster risks and building back better. The relatively new terminology of forecast based action or forecast based financing (FbF) tries to bridge a gap in the humanitarian system, by combining some of these concepts, to enable preparedness actions to be more targeted and commence earlier. By using the science of weather and climate to anticipate climate events, it seeks to mobilise resources before a forecast or an event to mitigate risks, enhance preparedness and response, and so make disaster risk management more effective and timely.²

The principals behind forecast-based financing are straightforward. When a forecast³ exceeds an agreed-upon threshold of probability for a specific hazard, funding for a specific action is released. For example, procuring water purification tablets and hygiene kits in advance of a rainy season and dispensing them to a community three days ahead of a predicted flood. Standard Operating Procedures (SOPs) and allocation of resources are agreed in advance and are activated when the pre-specified risk level or trigger is reached. This preset system allows decision makers to weigh the risk and cost of occasionally acting in vain, against consistently failing to take early action.⁴ It also means that the decision making process is not pressurised by the short amount of time between a climate forecast and the requirement to take action based on it.

The KRCS intervention in Kitui county is best described as forecast-based action, as the decision for the intervention responded to a forecast but the SOPs for a more conventional FbF intervention were not in place. The intervention took place in the context of broader conversations about whether to introduce an FbF mechanism. The aim was also different to most current FbF initiatives. Most forecast based financing seeks to mitigate the negative impact of an unusual climate event, while the Kitui intervention aimed to take advantage of a potentially positive impact. As such, it could be seen as livelihoods enhancement intervention rather than a disaster management action, as it aimed to increase the food security among a population vulnerable due to climate variability and poverty. The

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² Red Cross Climate Centre: 'Forecast-based Financing’ of preparedness: developing an operational protocol
³ In meteorology terms a forecast refers to a future climate condition that can be good or bad, whereas a warning refers to a potentially dangerous future condition. Forecasts can be issues up to months (typically seasons) in advance and are based on probabilities, while warnings are usually shorter term (e.g. hours, days or maximum a week) and are issued with much higher certainty.
⁴ Coughlan de Perez, et al 2015
intervention is also closely related to climate change adaptation approaches, but being a single season intervention it did not seek to long-term adaptation of livelihood practices and thus could be described as a short-term adjustment to climate variability.\(^5\)

2.2. Aim of the Kitui intervention

The overall aims of the Kitui seed intervention were:

- To take advantage of the forecasted enhanced rains in Lower Eastern region, by distributing a hybrid maize seed variety to farmers in Kitui County, which was expected to have a high yield in the expected conditions. By enabling subsistence farmers to reap a bumper harvest, KRCS hoped to enable them to cope better with a possible lean season in 2016 in case the 2015/16 El Niño was followed by a La Niña in 2016.

This intervention was one component of KRCS’s wider El Niño Preparedness programme, which included pre-positioning of response supplies and training response teams at County level.

2.3. Overview of the intervention

- Seed quantity and variety: 42 Tonnes of DH04 hybrid maize seeds
- Target: 2 kg pack of seeds each for 20,100 farmer households in 3 sub-counties of Kitui County
- Activities: consultation and planning, procurement & delivery of seeds, targeting, seed distribution, participant farmer mapping, post-harvest management training, post-harvest feedback session, case study review
- Budget: 11.5m Kenyan Shilling (KES) (£85,885) of which KES 7m was the cost of the seeds (3.5m from BRC and 3.5m from KRCS Disaster fund)

\(^5\) Climate variability looks at deviations of mean climate statistics that occur within smaller timeframes, such as a month, a season or a year, and climate change considers changes that occur over a longer period of time, typically over decades or longer. El Niño phenomena is a climate variability
3. RESEARCH QUESTIONS AND METHODOLOGY

3.1 Research questions

The review assessed two aspects of the intervention – the impact and the process. It sought to establish:

1. How KRCS managed this intervention (lessons learnt on what went well and what needed improvement) and how it could be replicated (process, conditions, etc.)? What was the overall learning for KRCS with regards to the relief to resilience agenda?

2. To what extent did the intervention make use of the El Niño enhanced rains to enable farmers to cope with food insecurity and potential drought (La Niña related) in 2016? Specifically, did it achieve:
   i. Increased harvest yields for the farmers through the provision of seeds most suitable for the predicted climate conditions?
   ii. Improved post-harvest management (drying and storage) to prevent Aflatoxin?
   iii. Improved marketing skills for the farmers, to support them raise more money from their harvests?
   iv. Improved capacity of the communities to cope with climate variability?

3.2 Methodology

The case study included a desk review, semi-structured key informant interviews and focus group discussions. This enabled the collection of both quantitative and qualitative data.

Desk review: This included a review of relevant published and grey literature on forecast based programming, internal KRCS documents, external El Niño forecasts and preparedness plans. The desk review also drew on a mapping exercise carried out by KRCS in November 2015, which covered 68% of the farmers who received seeds.

Key Informant Interviews: The key informants were selected using a purposive sampling approach, based on their knowledge and involvement in El Niño preparedness and intervention activities. Fifteen key informants were interviewed representing KRCS Headquarters and Kitui County staff, key stakeholders such as the National Drought Management Authority (NDMA), Ministry of Agriculture (MoA) and the local Government Administration.

Focus Group Discussions (FGDs): Nine FGDs were conducted; two with KRCS volunteers, five with people from households who had received seeds and two with groups who did not receive seeds. Open ended questionnaires were used during the FGDs. A purposive sampling approach was taken, where the respondents were either farmers who
had received seeds, or were from comparable communities in the case of the control groups. They represented the different target locations (at least one ward per sub-county) or were from neighboring wards. Between 10 and 20 respondents participated in each FGD. The two to three hour discussions were facilitated by an experienced moderator who regulated group dynamics, reducing bias due to dominance of specific individuals. Local volunteers supported translation and discussion in local dialects where needed.

A total of 153 people took part in the farmers’ FGDs and 11 took part in the volunteer FGDs. As deemed culturally appropriate for the area, the FGDs were conducted with male and female participants together, 55.6% female and 44.4% male.

Preliminary findings from the review were presented to key stakeholders from the Kitui County Government and KRCS Kitui Board and, in a separate meeting, to KRCS staff and Red Cross Movement partners in Nairobi. Initial feedback and suggestions have been incorporated into this report.

3.3 Methodological Limitations

The findings of this case study should be viewed in light of a number of challenges that were encountered.

Coverage and representativeness

The findings from the FGDs are indicative and should not be extrapolated to represent the situation for all who were reached by the programme. The research team considered conducting a household survey for a representative sample, but decided that the resources required to generate statistically significant data were not proportionate to scale of the intervention or the study objectives.

The FGDs were arranged in a pragmatic manner which enabled the study to proceed in a timely fashion; participants were mobilised by the local chief and volunteers, rather than randomly selected. All gave their informed consent to participate.

Quantifying the yield

The research team gathered data on average yields but this was not precise. As such, the study cannot conclusively demonstrate that the farmers who received the seeds experienced a more productive harvest than the control groups. Some specific difficulties encountered were:

- Some farmers had mixed the seeds they received with other seeds they had and when assessing yield and counted their entire harvest
- Some farmers counted how many rows of maize they harvested, but not how many bags of maize they were able to fill, which is the conventional way of quantifying the yield in the area
- Some had not planted the whole 2kg of seeds for a variety of reasons, for example, some shared their seeds, others did not have enough land
**Baseline data**

A key purpose of the November farmer mapping exercise was to provide a baseline against which the harvest gathered after the intervention was to be assessed. To do this, the survey asked how much farmers had harvested in the ‘previous harvest’ with a view to comparing this to the quantity of maize yielded after the intervention. However, due to the timing of the survey, the ‘previous harvest’ would have been after the March-April-May (MAM) rains rather than the OND and so is not comparable.

**FGD process**

KRCS normal practice is to have FGDs with only 8-10 participants. However, here 15-20 participants were invited in order to somewhat compensate for not carrying out a survey. Moderating group dynamics was more challenging with these larger groups, despite having experienced KRCS moderators. Further, the research team had planned to gather responses during the FGDs through smaller sub groups using beans and flip-chart but due to time and logistical constraints this was not always accomplished.

A further concern is possible bias due to the conflicting expectations of different FGD participants and the political dynamics with each group. The research team felt in some instances a likelihood of participants framing their answers in order to maximize potential future benefits from KRCS, rather than accurately describing their harvest. In other instances, there was a sense that certain group members had suggested to others to respond in a particular way, regardless of their own experiences. Here facilitators took care to question participants individually on key questions to try to reduce bias, but the research team cannot eliminate the impact of any suggestion or coercion which could have taken place outside of the discussions.
4. **KRCS PLANNING, MANAGEMENT, IMPLEMENTATION**

4.1. **Detailed timeline**

<table>
<thead>
<tr>
<th>Month</th>
<th>El Niño related activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>May – July 2015</td>
<td>Monitoring of international and national El Niño alerts evolving over time</td>
</tr>
<tr>
<td>April – Oct</td>
<td>KRCS Multi-hazard Contingency planning process</td>
</tr>
<tr>
<td>August</td>
<td>Kenya Meteorological Department official El Niño Forecast issued</td>
</tr>
<tr>
<td>Mid Sept</td>
<td>Kitui Met Dept Forecast downscaled to ward level. Seasonal advisories issued on 17th Sept</td>
</tr>
<tr>
<td>Late Sept</td>
<td>KRCS Contingency plan finalized including El Niño scenarios and Kitui seed distribution</td>
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<tr>
<td>Late Sept</td>
<td>Kenya Government El Niño Response Plan published</td>
</tr>
<tr>
<td>Beginning of Oct</td>
<td>KRCS El Niño Preparedness plan presented to partners for resource mobilization. DFID email to approve support of plan on 9th Oct.</td>
</tr>
<tr>
<td>Early Oct</td>
<td>Kitui County El Niño Preparedness meetings. Emergency Operations Centre hosted by KRCS Kitui branch</td>
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<tr>
<td>Mid October</td>
<td>Consultations and planning on seed support intervention in Nairobi and Kitui</td>
</tr>
<tr>
<td>20-24 Oct</td>
<td>Beneficiary targeting and seed distribution in 3 sub-counties (6 wards)</td>
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<tr>
<td>1st week Nov</td>
<td>Planting of the hybrid maize seeds</td>
</tr>
<tr>
<td>5th Nov</td>
<td>Onset of the rains (predicted onset was 2-3rd week of Oct)</td>
</tr>
<tr>
<td>Nov-January 2016</td>
<td>Post distribution mapping of beneficiaries and follow up visits</td>
</tr>
<tr>
<td>Feb-March</td>
<td>Post-harvest management training and demonstrations facilitated by KRCS and the MoA</td>
</tr>
<tr>
<td>March</td>
<td>Farmers harvesting and drying crops</td>
</tr>
<tr>
<td>April-May</td>
<td>Harvest yield feedback sessions by MoA and KRCS</td>
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<tr>
<td>June</td>
<td>Case study review</td>
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</table>
4.2. Pre-distribution

The above table shows the impressive speed at which KRCS interpreted the climate forecast, used it for decision making and then took action. The evolving El Niño situation was monitored from the first forecasts during May 2015 through to when the climate forecast was down-scaled to ward level in mid-September, at which time precise information about likely conditions in Kitui became available. During key informant interviews, people reported this as the trigger for decision-making. The Kitui decision-making took place in the context of a broader organisational contingency planning process. 2015 was the first year KRCS had engaged in multi-hazard contingency planning process at the National level and one of the key focus areas was country-wide El Niño preparedness. The fact that the contingency planning process became the key platform for thinking about El Niño preparedness demonstrates its utility for timely analysis, decision making and planning.

By the end of September, resources had been mobilised through a combination of drawing on internal funds and external support. The seeds were then distributed between October 20 - 24th; the entire process of procurement and delivery, beneficiary targeting/selection and engagement of relevant stakeholders was undertaken in little over three weeks. This is a significant achievement. However, there were some shortcomings that might have been avoided had there been more time for planning.

4.3. How were the farmers preparing for El Niño?

Before the distribution, FGD participants in both control and participant groups reported being aware of the El Niño forecast, most having received this information via the radio and in one instance in a village baraza (which is a local, open community meeting often used to transmit information). FGD participants expressed mixed feelings about the forecast and how to prepare for the rain. Some expressed doubts about the predictions, citing the fact that the El Niño was first forecast to happen in 2014 but eventually came to fruition in 2015. This gap in understanding about forecasts and how to interpret probabilities inevitably has an impact on how climate information is used and understood by farmers.

Alongside doubts that the rain would materialise, the forecast also caused significant worry across both control and participant farmer groups. One concern was that the rains would be destructive and have negative effects such as soil erosion, destruction of houses, crops and roads or that it would be followed by a disease outbreak. Farmers also worried about aflatoxin following a good harvest or that a long drought would follow the rains. Overall, most FGD participants reported preparing their land as normal; three FGDs reported expecting a bumper harvest. Some farmers did use other hybrid seeds such as Duma 43 or planted other crops such as yams, which would do well with more rain. Some farmers reported that they took additional preparatory measures: in Kabati, some used tractors to prepare their land, in Kabati, Migwani and Matinyani (control group) participants dug trenches to capture rain water.
4.4. Learning points

➢ There will always be a short time lapse between localised climate forecasts and the need for action, more thought is needed as to how to manage this going forward.

➢ The short time between a detailed climate forecasts and a climate event means that success relies on swift decision-making and action. The fact that KRCS were able to do this built on enablers including:

   o Having staff tasked with monitoring climate and other emergency related data, who provided timely and comprehensive forecast information from a variety of sources, throughout the period between the initial country-wide El Niño forecast and the localised forecast in September

   o The contingency planning process, which considered potential positive and negative effects of the El Niño phenomena

   o KRCS has a long-term livelihoods programme in Kitui, meaning that human resources and logistics were already in place to quickly deliver the intervention even though it was not in the exact same area as the existing programme. The intervention may not have been possible if this was not the case

   o KRCS was able to quickly access additional funding, which demonstrates the value of flexibility on behalf of some of KRCS’s funding partners

   o In addition to these practical processes, KRCS staff reported a broad organisational shift towards improving preparedness and towards moving beyond organisational preparedness to starting to work with communities on disaster preparedness.

➢ KRCS accessed funds quickly in this instance, but this level of flexibility should not be relied on. Future interventions of this type would be more efficient if a fund were agreed in advance, with clear criteria for use. This would be coherent with KRCS’s broader focus on disaster preparedness and enable more time in the window between receiving a climate forecast and the climate event for effective community targeting and selection. Taking this forward will require the understanding and buy-in of staff, the development of clear objectives, a tailored and robust approach to monitoring plus the commitment of partners.

➢ The rationale for the intervention was well understood by key staff in Nairobi but was not shared in written form with external stakeholders or branch staff. All stakeholders were aware that KRCS aimed to enable farmers to take advantage of the rains and contribute to food security. It was clear through interviews with external stakeholders, such as the Meteorological Department and Agricultural Officers, that the rationale of using the intervention as a mechanism to prepare farmers for a potential drought was not well understood. Equally, the farmers involved were not aware that a purpose of the intervention was partly to prepare for a potential La Niña, nor that
the seeds were to be used in enhanced rain only. They were, however, aware that the seeds were not to be replanted, as hybrid seeds do not provide a yield if grain from one season is stored and used as seed for the next. It was unclear whether the distinction between this forecast-based intervention and previous seed distributions by other organisations was understood by the farmers. Had these key points been more clearly documented and clearly articulated, they could have been explained to the farmers during distribution and so better contributed to their knowledge about using climate forecasts.

➢ The farmers do not trust climate forecasts and anticipate negative outcomes from unusual weather events. Their approaches to preparation were the same as usual and there was some confusion around the connection between the choice of DH04 and the expected enhanced rains. More work is required to support farmers trust and understanding of climate data, and how to take action based on it.

4.5. Seed selection

For this intervention, a hybrid variety of maize, ‘DH04’ was selected and procured from the Kenya Seed Company. Green grams and beans were considered, however here a high yielding seed available in large quantities was required. Maize was also a more economical choice, enabling KRCS to reach more farmers; the DH04 seeds were also available in 2kg packages which were practical for distribution. KRCS were also able to access economies of scale when procuring the seeds, providing a better return on investment than a cash response. Staff reported that had there been more funding, mixed seeds would have been chosen.

The choice of seeds was a result of consultations with the Ministry of Agriculture, the County Government, the Kenya Agriculture and Livestock Institute and the Kenya Seed Company and was approved by all. It was supported by agronomic knowledge; with DH04 chosen as it is known to perform well in enhanced rains. The decision was taken in Nairobi but was endorsed by the local County Government.

4.6. Learning points

➢ Maize is popular in Kitui and used mainly for home-consumption. The DH04 variety was widely acknowledged to have been a good choice for that specific situation, when enhanced rains were expected. However, maize requires more water than Kitui usually receives; a 2015 study shows a drastic decline of maize yields in Kitui, by up to 15 kg/acre per year over the last 30 years.6 This is due to high climate variability, manifested in a negative trend in onset and cessation of seasonal rainfall and rising temperatures. Given this, the Ministry of Agriculture is not encouraging planting maize

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in Kitui. Instead they are promoting drought resistant crops such as cow peas, green grams and pigeon peas, which are currently grown in the area but mainly as cash crops rather than for consumption. Equally, KRCS is trying to encourage crop diversification and a shift away from planting maize, towards other more nutritious and potentially profitable crops such as butternut squash, tomato, kale, spinach and watermelon. This strategy is shown in a longer-term livelihoods programme currently under way in Tseikuro, Kitui. This begs the question of whether it would have been better to offer seeds of different crop varieties. Had this been done, it would have supported the broader aim of diversifying the crops grown in the area and been in keeping with approaches KRCS is actively trying to promote in other programmes. Equally, farmers in Kitui frequently recycle their harvests for the following season and hybrid seeds cannot be recycled. This potentially put farmers at risk for following seasons as they would either have to procure different seeds or look for a further seed distribution.

4.7. Selection and targeting

Geographic selection:

Kitui County was selected for this intervention due to four key factors: favorable rain forecast, food insecurity, government gap in services, and agro-economic suitability.

Kitui County is a food insecure region with a large population of subsistence farmers who are vulnerable to climate related shocks. In August 2015, Kitui was classified to be in stressed food security phase (IPC Phase 2) due to the erratic temporal distribution of long rains. According to the NDMA the Food Consumption Score, between December 2014 and May 2015, showed that households with a poor score had gone up from 1% to 7% and those with a borderline score had increased from 10% to 71%.

A further key factor was that in previous years, the County Government had provided seeds to farmers in Kitui. This support was

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NDMA, August 2015: Kitui County 2015 Long Rains Food security assessment report
withdrawn in 2015 while plans were being reviewed, as part of a shift to a social protection cash assistance programme. In the early phases of planning the Kitui seed distribution, there was an ambition to cover Kitui, Kibwezi and Machakos counties; however, a review of relevant county plans revealed that Kibwezi and Machakos counties had government budgets set aside for seed distribution whereas Kitui did not have the resources available to change their plans.

The selection of the specific target locations within Kitui County was based on agro-economic suitability. Broadly, Kitui can be divided into four agro-ecological zones as shown in the map, these are influenced by a range of factors including altitude, soil type and proximity to water. The largest area, depicted in green, is considered ‘marginal’ mixed farming and is only suitable for mixed drought resistant crops and livestock; 44% of the population of Kitui lives there. The area to the South is a National Park and is not populated. The three sub-counties selected for the intervention are located in the mixed farming zone, shown in orange, where conditions are more reliable for agriculture. Within these areas, those with ‘black cotton’ soil were targeted as this type of soil is more fertile and therefore suitable for maize production. However, focus group discussions with farmers showed that the soil type can vary even within one field, contributing to different yield sizes from the seeds.

**Participant farmer selection process:**

Key criteria for selection were that participants must be capable farmers with two acres of land available. KRCS also sought primarily to target women who were perceived to be more involved in the execution of farm work and potentially more responsible with the seeds. This was a departure from a more conventional approach of targeting the most vulnerable or people affected by a disaster. A key risk mitigation strategy was to try to ensure that those who received the seeds had additional land on which to sow other crops, which would enable some agricultural output should the seeds provided have failed.

In consultation with the county government about the appropriate quantity of maize to be provided per farmer, combined with the convenience that the DH04 was packaged in 2kg bags, the 2kg per farmer figure was reached. 21,034 households were targeted, 934 more than the original target. The reach was determined by the quantity of maize available; budget calculations and negotiations with the seed supplier which resulted in a decision to procure 42 tonnes of DH04 seeds.

Local political structures were utilised to carry out the beneficiary selection and consultations took place at numerous points during the targeting process. Initially after Kitui County was selected, the County Director for Agriculture recommended the agro-ecological zone and sub-counties. Kitui branch staff then looked at the suggested sub-counties in terms of their potential for maize production and their soil type to select the specific wards. After the wards were chosen, the Chiefs were engaged to select beneficiaries; each was

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8 NDMA Feb 2016: Kitui County 2015 Short Rains Food security assessment report
given a number of beneficiaries to select, proportionate to the overall population size in their area.

4.8. Farmers reached with seeds:

<table>
<thead>
<tr>
<th>Sub county</th>
<th>Ward</th>
<th>Farmers Reached</th>
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<tbody>
<tr>
<td>Mwingi Central</td>
<td>Kyethani/Kiomo</td>
<td>3,350</td>
</tr>
<tr>
<td></td>
<td>Kivou</td>
<td>3,350</td>
</tr>
<tr>
<td>Mwingi West</td>
<td>Ngutani</td>
<td>3,350</td>
</tr>
<tr>
<td></td>
<td>Migwani</td>
<td>4,284</td>
</tr>
<tr>
<td>Kitui West</td>
<td>Kauwi/Kabati</td>
<td>3,829</td>
</tr>
<tr>
<td></td>
<td>Mutongoni</td>
<td>2,871</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>21,034</td>
</tr>
</tbody>
</table>

4.9. Learning points:

Given the extraordinarily tight timeframe for beneficiary selection, which was pressurised by the impending rains and the need to complete the seed distribution in advance of this, there was a high likelihood of problems occurring. The data suggests four key challenges were encountered:

➢ Some of the local Chiefs tasked with selecting specific beneficiaries did not follow the agreed criteria, instead they followed criteria related to poverty or vulnerability which they were more familiar with. This became clear both from beneficiary focus groups and key informant interviews. This supports the finding (outlined earlier) that the overall rationale and aims of the intervention were not well communicated or widely understood. It also potentially impacted results, as a number of farmers reported having shared their seeds, or struggled to plant all their seeds due to lack of land or time, perhaps this would have been avoided if the targeting had been as per the original criteria.

➢ Local political dynamics and lack of communication between administrative levels presented an issue during the targeting process. While the County officials and Chiefs were fully engaged, the Ward agriculture officials were not consulted about targeting or selection and fed back critically about this during KIIIs. This resulted in clear tension between the different Government administrative levels, particularly the
county and ward level, which KRCS staff then had to negotiate. While this is unlikely to have affected the overall result, as it was widely acknowledged that the Chiefs were the correct people to carry out the selection, it is important to consider if KRCS wish to continue working through local administrative structures.

➢ Feedback from farmers on the selection was mixed. Both control groups expressed interest in being included in any future distribution and one interpreted their exclusion as punishment, asking “Please tell us our wrongs”. Participant farmers in Kabati criticized the selection criteria as unfair, while other criticized the lack of timely communication about distribution related meetings. The Chief in Kabati also stated that some eligible individuals missed out, as they were not present at the selection meetings and were not put forward for selection by any meeting participants who were present.

➢ All of these issues are to some extent underpinned by the extremely short timeframe available to carry out the entire selection and distribution process. Usually branch staff would hope to verify beneficiary lists provided by chiefs but this was not possible due to the timeframe, which may also have undermined the selection process. For this intervention, the selection and distribution took place within the same week, and in one instance in Kabati, on the same day.

4.10. Distribution and mapping

The seed distribution took place between October 20 and 24th, around three weeks after the rains had been forecast to start. The planting eventually coincided almost exactly with the onset of the rains.

To monitor the intervention and to act as a baseline, an extensive mapping exercise was carried out through a survey reaching 14,432 households of the 21,034 farmers who had received seeds. This provided useful data about the participants related to their livelihood situations and supported accountability, by enabling KRCS to understand whether the seeds had actually reached the target areas. The above image shows the distribution of beneficiary farms across the
target area. In addition to the location of the farm, the mapping also collected disaggregated data (gender, age, and disability) from the households that received seeds and baseline data including tillable land, average harvest in previous season, average income, etc.

A road accident during the delivery of seeds resulted in the loss of one truck load of seeds. Fortunately, the load was insured and so additional seeds were procured (at the time of the crash, much of the seed was taken by people in the surrounding area and, no doubt, eaten, planted or sold).

### 4.11. Learning points:

Overall the distribution was successful, reaching a large number of farmers in a very short period of time, across a large area, in time for the rains. A number of challenges were however encountered.

- Distributing seeds at convenient locations, given the timeframe and size of the intervention area was challenging. KRCS did add one additional sub-location for the distribution during the process, in response to feedback. Both focus groups with beneficiaries and some key informants reported that the distance travelled by some participants was large, in proportion to value of the 2kgs of seeds provided. This was however counter-balanced by the high yield that resulted from the crops.

- There was a serious risk that the distribution could have missed the onset of the rains. A number of farmers reported that had already planted by the time the seeds were distributed. This resulted in a number of unexpected outcomes; some farmers gave the seeds away, others hired land to plant the additional seeds. On the positive side, this means that the seeds were planted in addition to, not instead of, other seeds thus increasing the size of the overall food basket for this food insecure environment.

- The post distribution mapping exercise sought to account for all beneficiaries, with the exercise driven mainly by monitoring and accountability goals. Seeking to map 100% of the 21,034 households was ambitious and far beyond the sample size required to provide a statistically significant representation of the target group. In the end, 68% of beneficiaries were reached. Of the remaining 32%, data errors and logistical challenges meant some could not be reached and it is also possible that some were not actually based in the target area or were incorrectly targeted in other ways.

- The mapping aimed to provide baseline information for the intervention, however, harvest information collected related to the ‘last season’. This means data from the March-April-May (MAM) 2015 rains was collected to compare with rain from an October-November-December (OND) season, which compromises the validity of the comparison.
5. RESULTS AND IMPACT

5.1. Harvest yield

Both control and focus group participants reported a bumper harvest following the OND rains for both DH04 and other crops. This finding is supported by the NDMA’s February 2016 Food Security report, which states that maize stocks in the areas were 27% above their long-term average at this time. This is positive news, but means that the study cannot demonstrate that participants experienced a better harvest than their non-participant peers.

The below tables show the yields reported by the focus groups and the post-harvest feedback session. While the results are overall, very positive, it is important to note that, as outlined in section 3.3, there were difficulties in precisely quantifying the results and the baseline figure is from MAM season rather than the last OND season. Also notable is that participants in Migwani, which is a densely populated area with poor soil, reported a poorer harvest than usual.

5.2. Results reported in focus group discussions

<table>
<thead>
<tr>
<th>Ward</th>
<th>Baseline (From mapping)</th>
<th>Usual amount of maize harvested</th>
<th>Amount harvested from 2kg of DH04</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kivou</td>
<td>1.54 bags</td>
<td>2 bags</td>
<td>2.5 – 3 bags</td>
<td>Bumper harvest</td>
</tr>
<tr>
<td>Nguutani</td>
<td>0.88 bags</td>
<td>Normally 1 row does not fill a bag</td>
<td>1 row gave them 1 bag</td>
<td>Bumper harvest Shared seeds</td>
</tr>
<tr>
<td>Migwani</td>
<td>1 bag</td>
<td>4 bags</td>
<td>50 kg – 2 bags (one 6 bags)</td>
<td>Difference caused by land preparation, fertilizer and booster. Most did not plant whole 2kgs</td>
</tr>
<tr>
<td>Kauwi/Kabati</td>
<td>3.1 bags</td>
<td>3-4 bags</td>
<td>4-8 bags (max 9 bags, least 3 bags)</td>
<td>DH04 was better than other seeds</td>
</tr>
<tr>
<td>Mutongoni</td>
<td>2.28 bags</td>
<td>2 bags</td>
<td>1-5 bags</td>
<td>Difference caused by soil types. Hybrid yielded three times more than previous maize harvest.</td>
</tr>
<tr>
<td>Control group Matinyani</td>
<td>N/A</td>
<td>2-3 bags</td>
<td>N/A</td>
<td>Average maize yield was 5 bags</td>
</tr>
<tr>
<td>Control group Tseikuru</td>
<td>N/A</td>
<td>No maize planted</td>
<td>N/A</td>
<td>No maize but other crops did very well</td>
</tr>
</tbody>
</table>
5.3. Results reported in February post-harvest feedback session

<table>
<thead>
<tr>
<th>Wards</th>
<th>No. of farmers</th>
<th>Average yield per ¼ acre/2kgs packet (seeds)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kivou</td>
<td>157</td>
<td>4.0 bags</td>
</tr>
<tr>
<td>Kiomo/Kyethani</td>
<td>165</td>
<td>4.0 bags</td>
</tr>
<tr>
<td>Nguutani</td>
<td>235</td>
<td>4.5 bags</td>
</tr>
<tr>
<td>Migwani</td>
<td>305</td>
<td>5.0 bags</td>
</tr>
<tr>
<td>Kauwi/Kabati</td>
<td>237</td>
<td>5.0 bags</td>
</tr>
<tr>
<td>Mutonguni</td>
<td>321</td>
<td>4.5 bags</td>
</tr>
<tr>
<td><strong>Overall average</strong></td>
<td><strong>1,420</strong></td>
<td><strong>4.5 bags</strong></td>
</tr>
</tbody>
</table>

Differences in yield size can be attributed to a range of factors including how the land was prepared, soil type, use of fertilizer and booster, pests and how the farmers tended the crops while they were growing.

5.4. Post-harvest management training

2,758 farmers from the six wards attended post-harvest management training, which was carried out by KRCS with agricultural extension workers. The training covered drying and storage, including how to avoid aflatoxin, and marketing.

A significant number of farmers from the FGDs attended the management trainings. Of those who did, the instructions most applied were on the application of pesticides and the drying process. FGD participants reported that they had been aware of some aspects of the training already, but appreciated the practical demonstration of new techniques. Some challenges in applying the content of the training were however reported as follows:

- Farmers were recommended to use a special type of storage bag, these were expensive and not readily available.

- Farmers were encouraged to use moisture meters to determine when harvests were dry enough to store. The Ministry of Agriculture, through the County Department of Agriculture, provided 10 meters which were distributed to some groups by the agricultural extension workers. However, the meters were insufficient and it is likely that most farmers did not access them. Indeed, none of the farmers in the FDGs had accessed the meters.

- The principles of the marketing training related to trying to sell in large quantities and selling at a time when market prices are higher, which is usually sometime after the harvest when supplies are running low. While the principles may have been
understood, there are pressing practical reasons why farmers were not able to apply this training outlined in section 5.3.

Despite these difficulties, no cases of aflatoxin were reported either in the FGDs or by the Local Governments or NDMA. So while not all aspects of the training were applied, it may have helped alleviate a key risk.

5.5. How did farmers use their harvest?

According to the baseline mapping exercise, 96% of households (15,033) usually use their maize harvest for home-consumption.

Following this harvest, the overwhelming majority of FGD participants reported using the maize for a mixture of home-consumption and selling some surpluses to obtain income; farmers reported that the previous cropping season had been lean and household assets were therefore running low. Most farmers reported selling in small quantities as they required the cash, which was used to pay for school fees and to cater for other household needs such as medical expenses, household items, clothing and other food items. No farmers reported using any funds to buy seeds for the subsequent planting season. School fees were the highest priority and used the largest proportion of funds, in some instances farmers paid the fees directly in maize. Some invested in livestock, which are a form of saving in the area.

Few farmers reported trying to re-use their seeds, showing that messaging that they could not be used was well received.

5.6. Selling the seeds

Farmers sold their seeds in small quantities to local kiosks, markets and brokers, which are known to pay very poor prices compared to those attainable when selling in bulk. The increase in supply due to the bumper harvest and fact that farmers were under pressure to pay school fees meant people sold at similar times which negatively affected market prices. According to the NDMA and MoA, with increased supply of maize in the main markets in Kitui, average prices decreased to an average of KES 31 per kilogram in January 2016 across all the livelihood zones, this is 7.7% lower than the five year average of KES 33.6. Between March and June prices remained relatively stable at around 9% above the long term average, and rose further in July as stocks depleted further⁹. In the FGDs, some participants reported that they sold one kg at prices as low as KES 15-20, while in Kivou some farmers sold at KES 25-30 per kg. The combination of low market prices and selling at low volume negatively affected farmers’ ability to capitalize on their bumper harvest.

Kitui is not usually and area for large scale maize production and is therefore does not contribute to the ‘food basket’ of the National Cereals and Produce Board. During the post-

⁹ NDMA Aug 2016: Kitui County 2016 Long rains food security assessment report
harvest management period, there were some discussions between KRCS, the Agriculture Department and the National Cereals and Produce Board, to explore if the Government could buy the harvest from the farmers in Kitui at a fixed price. This eventually did not happen as the farmers were not selling on the scale required. There is one outlet of the National Cereals and Produce Board at district level but they did not buy the farmers maize as, without collective action by the farmers, the Board would have to go from farm to farm to buy the maize which would not have been cost effective.

5.7. Impact on wider community

The programme had limited impact on the wider community as it targeted a small portion of the farmers in selected sub counties within a limited time.

Improvements to the communities could be observed, though the KRCS intervention should be seen as one of a mixture of causes, as all crops did well during the OND rains. Food security indicators improved; Kitui had been classified as being in the Stressed Phase (IPC Phase 2) in the past two rainy season assessments in both the marginal mixed farming and mixed farming livelihood zones. This changed to ‘Minimal phase’ (IPC Phase 1) after the OND rains. The Coping Strategy Index declined from 23 in December 2014 to 20 in December 2015, showing that households were employing less severe consumption coping strategies.\(^\text{10}\)

Key informants and farmers also cited the following benefits to the wider community

- Some shared their harvest (and seeds) among other community members
- One mentioned improvement to housing (Assistant Chief Katutuu, model farmer)
- In some instances farmers were able to pay the school fees of relatives along with the fees for their own children.

5.8. Outlook 2016

Although it was hoped that the bumper harvest would prepare farmers for a possible La Niña, no participant in either the target or control group reported the harvest would last until the next rains, nor did the report having saved any funds to prepare for a possible dry spell. Nor were participants aware of the potential for a La Niña phenomenon, although they did express general concerns about droughts following enhanced rain. Some communities were very reluctant to speculate about potential weather conditions due to religious or cultural beliefs. Eight months was the longest that anyone anticipated the harvest lasting, though most reported closer to 2-3 months; naturally this depends on household size and needs. On the other hand, few farmers in any focus group reported agriculture as their sole source of income; livestock, small scale retail and moped driving were other common livelihoods.

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\(^{10}\) NDMA Feb 2015: Kitui County 2016 Short rains food security assessment report
As of May 2016, the forecasts for the OND rains in 2016 from the International Research Institute for Climate and Society suggested a 60 – 70% global likelihood of at least a weak La Niña taking place in the latter half of 2016. This shows the rationale for the intervention held\(^\text{11}\). In addition, there were indications that the 2016 MAM rains would be worse than normal. Planting of the 2016 MAM season crops had been delayed following the late and erratic start of the rainy season. Significant soil moisture deficits persisted in most central and eastern cropping areas in late April, affecting crop development and pasture conditions. During the time of the study, many fields showed failing crops. The FAO Agricultural Stress Index (ASI) in April 2016 also highlighted a high risk of drought conditions developing in Kitui (see ASI map).\(^\text{12}\)

### 5.9. Learning points:

- It was clear from all focus groups that the farmers face a range of challenges and underlying vulnerabilities, which compromise their ability to plan months in advance for potential adverse weather conditions. Most farmers sold their harvest from the seed distribution to satisfy immediate needs, or have now consumed the maize, so will rely on other income sources in the coming months. Given the other difficulties faced by farmers, a deeper or longer-term intervention that addresses some of the root causes of issues faced by subsistence farmers would be required to prepare them for a drought. Importantly, this should consider the fact that most farmers have a mixture of livelihoods and are not solely invested in agriculture.

- Providing the farmers with more climate information could improve their knowledge of using climate forecasts to choose the best seeds to sow for that season. Based on discussions about the outlook for next year, there is clearly more work to be done to support farmers with this. The KMD and agriculture officers advised that this would require experiential learning through an engagement over a couple seasons, to increase the trust of the farmers in the seasonal advisories.

### 6. Overall programme learning

This forecast based intervention has been a rich source of learning. Considering the findings about the process and the results of the harvest, there are a number of learning areas which could inform the planning of a future forecast based interventions.

**Internal Conditions at KRCS:** Findings from the intervention clearly demonstrate that some of the enabling conditions are in place for forecast based interventions. Making this more systematic would require agreeing a fund for forecast based interventions and agreeing clear criteria for use. This could be defined in a set of standard operating procedures describing the conditions which would trigger a forecast based intervention and


potential responses, setting out roles and responsibilities and a clear approach to monitoring.

**Risk mitigation:** There were certain risks involved in the project which were not addressed; if the climate event had not come to fruition or if the farmers lost their harvests for another reason, they were not insured. KRCS tried to mitigate this by trying to ensure that only farmers with 2 acres or more were selected but this did not happen in all instances. Forecast based initiatives will always involve a component of risk as they are based on probabilities of an event occurring; as such KRCS may need to clarify its risk appetite and develop approaches to ensuring that these risks are known and not silently passed on to the participant farmers.

**Communications:** External KIIIs and FGDs demonstrated a poor understanding of the aim of the project as a forecast-based initiative, designed to enable farmers to have a positive result from El Niño and potentially prepare them for a La Niña. The beneficiary selection criteria were also poorly understood by the Chiefs. More engagement at the branch level during the design and planning stage of the programme is crucial, as is work to establish clear criteria for the identification of beneficiaries. Future projects would benefit from the clearer communications to all stakeholders and help to profile the use of climate forecasts for choosing what crops to plant for external stakeholders.

**Government Engagement:** While KRCS engaged with County officials, it opted not to involve the ward level in this intervention, who then fed back critically during key informant interviews. KRCS might want to define more clearly its approach to engaging government structures to better foster collaboration at all levels.

**Participant Farmer selection:** The selection process in this intervention relied on chiefs understanding the selection criteria and applying it in an unbiased way. KRCS are unable to guarantee this and reported that they usually try to verify that selected beneficiaries fit the agreed criteria.

Typically, a range of criteria should be used to ensure that the most suitable farmers are chosen for interventions. In this case, KRCS conducted a pilot operation under optimal conditions – focusing on farmers with the ability to take a risk (by definition these will not be the most vulnerable). Wealth or profile ranking could take place before a detailed climate forecast, to support improved targeting in a short time frame. This could include focus on access versus ownership of land (and amounts), type of farming (examining staple versus non-staple versus cash crop production), ownership of livestock and amounts, and then the profile of the population (disabled, women headed households, number of under 5s etc) and other context specific criteria. Beneficiary selection should be conducted using participatory methods as chiefs are not always neutral in their approach. Verification of beneficiary selection should always be conducted even if through random sampling.

**Working with farmers in Kitui:** The findings showed that while the farmers appreciated the seed distribution, the intervention was not sufficient to prepare them for a potential drought. There are a number of factors to consider going forward for similar projects hoping to have a more significant impact for farmers.
The farmers involved face structural poverty, of which a major cause is their relationship with local markets. All farmers were forced to sell at harvest time to pay school fees; as such they increased supply in the market which significantly reduced prices, limiting the impact of their windfall. Interventions of this type would be more effective if they were accompanied by more support to help the farmers get a better price for their maize. An initial intention was for the National Cereals and Produce Board to buy the proceeds of the harvest. As the farmers sell as soon as they harvest, instead of pooling their harvests in one location, it would not have been practical for the Cereals and Produce Board to buy in the quantities they require. Other approaches might be to support micro-credit initiatives, or linking them to other financial institutions, which would give the farmers the flexibility to sell their harvests at times when prices are higher.

School fees are required at the same time each term and thus can be planned for. In future, there is need to consider whether farmers need to have a large amount of money at a specific time. As harvests are unpredictable and impacted heavily by the weather and the inputs that are invested in the crops, farmers need diverse incomes, enabling them to fall back on alternative and less damaging mechanisms to pay for known expenses. One potential area of investment would be around the establishment of a SACCO where money would be saved throughout the year by self-selecting group members. These groups have a finite period of saving, which would cumulate in a share out period (which could be planned to coincide with a known period when a larger amount of money is needed, such as the payment of school fees). In addition, a social fund could be established within these groups which could be accessed if certain triggers related to FbF are reached.

The farmers were asked what other support they felt they needed and unanimously suggested support with water harvesting. Sand dams and earth dams were the most popular options while boreholes were regarded with a degree of suspicion, as it was felt they may dry out the surrounding areas.

More work is required to support the farmers to develop skills in interpreting and applying climate information when planning what to plant. Farmers lack trust in climate data and most FGD participants saw the next seasons harvest as completely out of their control due to their religious beliefs. Developing the farmer’s confidence in using climate data is therefore a culturally complex exercise which will require prolonged engagement. As suggested by the KMD, this would require experiential learning through a series of cropping seasons.

The farmers had also not heard about the potential La Niña; KRCS may wish to follow up promptly with communities to transmit this news. The existing seasonal advisory developed by KMD and MoA are an excellent source of relevant information but are not presented in an accessible way. If KRCS are carrying out other work with communities in Kitui, they could communicate the contents of these existing advisories.
Farmers fed back positively on the follow up survey, training and feedback sessions KCRS carried out. The choice of intervention type and follow up activities changed perceptions of KCRS from being purely a relief organisation to also looking at preparedness and resilience. Overall the intervention has been good for building community trust and relationships, this means conditions would be good in Kitui for expanded resilience or livelihoods programming if KCRS wanted to pursue this direction.

**Forecast based action:** Forecast based actions offers a wide variety of possible interventions. Providing seeds might be a very popular (and high visibility) intervention, but also has many challenges. It would be recommended to explore a variety of possible support that would provide high benefits, for example approaches to water harvesting.

**Maize:** These kind of interventions are an excellent opportunity to promote different types of crop which may be more suitable for the area in the long term. Suggestions from external key informants included cow peas, pigeon peas, green grams or sweet potatoes, which are currently grown locally as well as additionally benefiting soil fertility being nitrogen fixing. Another benefit of these is that they are not modified and can be replanted year-after year, so communities would have the opportunity to develop seed banks as a local resource.

**Monitoring and Evaluation:** The ability to conclusively say that the farmers had reaped a more productive harvest than usual was compromised by the fact that the baseline referred to a different planting season; future baselines should take care to be specific about what is being compared. Equally, the complexities encountered with regard to farmers sharing or mixing their seeds are inevitable and monitoring should anticipate this. In order to better understand the situation of the farmers, KCRS may also want to monitor pre and post-harvest losses, which can occur throughout the sowing and harvest process.

**Limitations of forecast based action:** The findings showed the problems encountered by farmers resulting from structural poverty and poor relations with markets and financial institutions. Longer term programmes can try to address these problems, forecast-based initiatives are not suitable for addressing underlying issues but can support farmers to improve their livelihoods on a short term basis, to take advantage of climate variability or protect livelihoods.

**Volunteers:** The process of the intervention contributed significantly to KCRS’s local volunteer base who received training and supported considerably with the distribution, mapping and case study exercise. This is now a significant human resource for the Kitui and beneficial for future interventions.
Annex A: Bibliography


### Annex B: Sub-counties reached by the intervention & FGDs carried out

<table>
<thead>
<tr>
<th>Sub county</th>
<th>Target Wards</th>
<th>Type of group</th>
<th>Total FGDs</th>
<th>Total number of respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mwingi Central</td>
<td>Kyethani/Kiomo</td>
<td>none</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Kivou</td>
<td>Beneficiary farmers (incl female headed household and youth)</td>
<td>1</td>
<td>28 (14m /14f)</td>
</tr>
<tr>
<td>Mwingi West</td>
<td>Nguutani</td>
<td>Beneficiary farmers (incl female headed household and youth)</td>
<td>1</td>
<td>10 (0m / 10f)</td>
</tr>
<tr>
<td></td>
<td>Migwani</td>
<td>Beneficiary farmers (incl female headed household and youth)</td>
<td>1</td>
<td>34 (9m / 25f)</td>
</tr>
<tr>
<td>Kitui West</td>
<td>Kauwi/Kabati</td>
<td>Beneficiary farmers (incl female headed household and youth)</td>
<td>1</td>
<td>20 (8m / 12f)</td>
</tr>
<tr>
<td></td>
<td>Mutongoni</td>
<td>Beneficiary farmers (incl famers who have been involved in previous livelihood programme)</td>
<td>1</td>
<td>15 (7m / 8f)</td>
</tr>
<tr>
<td>Kitui</td>
<td>Matinyani</td>
<td>Control group of non-beneficiary farmers</td>
<td>1</td>
<td>24 (17m / 7f)</td>
</tr>
<tr>
<td>Mwingi</td>
<td>Tseikuru</td>
<td>Control group - area of long-term livelihood programming but not seed intervention</td>
<td>1</td>
<td>22 (13m / 9f)</td>
</tr>
<tr>
<td><strong>Sub-total</strong></td>
<td></td>
<td></td>
<td><strong>7</strong></td>
<td><strong>153</strong></td>
</tr>
<tr>
<td><strong>KRCS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mwingi/Kitui</td>
<td>Kitui Branch Office</td>
<td>KRCS staff and volunteers (including youth)</td>
<td><strong>1</strong></td>
<td><strong>7 (4m / 3f)</strong></td>
</tr>
<tr>
<td>Kitui West</td>
<td>Mutongoni</td>
<td>KRCS volunteers</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td><strong>Sub-total</strong></td>
<td></td>
<td></td>
<td><strong>2</strong></td>
<td><strong>11</strong></td>
</tr>
</tbody>
</table>
The text contains contact information for the British Red Cross and the Kenya Red Cross. The British Red Cross is located at 44 Moorfields, London EC2Y 9AL, with telephone 0844 871 1111, fax 020 7562 2000, and email information@redcross.org.uk. The Kenya Red Cross is located at SouthC, RedCross Road, Off Popo Road, P.O.Box 40712, 00100, with telephone +254 02 3950000, emergency hotline 1199, and email info@redcross.or.ke.